

SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

[DEEMED TO BE UNIVERSITY]

THE ANNUAL QUALITY ASSURANCE REPORT (AQAR) SUBMITTED BY THE INTERNAL QUALITY ASSURANCE CELL (IQAC)



2017-18

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SSSIHL

The Annual Quality Assurance Report (AQAR) of the IQAC (2017-18)

Part – A

1. Details of the Institution

1.1 Name of the Institution	Sri Sathya Sai Institute of Higher Learning (Deemed to be University)
1.2 Address Line 1	Vidyagiri, Prasanthi Nilayam
Address Line 2	Anantapur District
City/Town	Puttaparthi
State	Andhra Pradesh
Pin Code	515134
Institution e-mail address	registrar@sssuhl.edu.in
Contact Nos.	+91 8555 287239
Name of the Head of the Institution:	Prof. K B R Varma
Tel. No. with STD Code:	+91 8555 289982
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Name of the IQAC Co-ordinator:	Dr. Pallav Kumar Baruah
Mobile:	+91 9440699887

IQAC e-mail address:

pkbaruah@sssihl.edu.in

1.3 NAAC Track ID (For ex. MHC0GN 18879)

SSSIHL11303

1.4 NAAC Executive Committee No. & Date:

(For Example EC/32/A&A/143 dated 3-5-2004.

This EC no. is available in the right corner- bottom of your institution's Accreditation Certificate)

EC/54/RAR/076 Date: January 08, 2011

1.5 Website address:

www.sssihl.edu.in

Web-link of the AQAR:

<http://sssihl.edu.in/sssuniversity/Portals/0/Images/About%20SSSIHL/AQAR/SSSIHL-AQAR-2017-18.pdf>

1.6 Accreditation Details

Sl. No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1 st Cycle	A++	96%	2003	2008
2	2 nd Cycle	A	3.63	2011	2016
3	3 rd Cycle				
4	4 th Cycle				

In the first accreditation on 21st March 2003, the Sri Sathya Sai Institute of Higher Learning (Deemed to be University) was one of the very few Universities in India to be awarded an A++ rating (95 to 100 percentile) by the National Assessment and Accreditation Council (NAAC).

In January 2011, the NAAC reaccredited Sri Sathya Sai Institute of Higher Learning (Deemed to be University) with an 'A' Grade and a Cumulative Grade Point Average (CGPA) of 3.63 (on a scale of 4.00). This put the Sri Sathya Sai Institute of Higher Learning among the top 7 out of 175 Universities accredited by NAAC.

1.7 Date of Establishment of IQAC: DD/MM/YYYY

23/06/2004

1.8 AQAR for the year (for example 2010-11):

2017-18

1.9 Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC ((for example AQAR 2010-11 submitted to NAAC on 12-10-2011)

- AQAR 2010-11 _NAAC/JP/SR/AQAR/2012/Ack/dt. 26/03/2012
- AQAR 2011-12 EC_54_RAR_076 AQAR for 2011-12 21/11/2012
- AQAR 2012-13 EC_54_RAR_076 AQAR for 2012-13 21/11/2013

- iv. AQAR 2013-14 EC_54_RAR_076 AQAR for 2013-14 21/11/2014
- v. AQAR 2014-15 EC_54_RAR_76 AQAR for 2014-15 21/11/2015
- vi. AQAR 2015-16 EC_54_RAR_76 AQAR for 2015-16 21/11/2016
- vii. AQAR 2016-17 EC_54_RAR_76 AQAR for 2016-17 11/11/2017

1.10 Institutional Status

University	State	<input type="checkbox"/>	Central	<input type="checkbox"/>	Deemed	<input checked="" type="checkbox"/>	Private	<input type="checkbox"/>
Affiliated College	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>				
Constituent College	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>				
Autonomous college of UGC	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>				
Regulatory Agency approved Institution	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>				

(e.g. AICTE for Management Courses and NCTE for Teacher Education Courses)

Type of Institution	Co-education	<input type="checkbox"/>	Men	<input checked="" type="checkbox"/>	Women	<input checked="" type="checkbox"/>
	Urban	<input type="checkbox"/>	Rural	<input checked="" type="checkbox"/>	Tribal	<input type="checkbox"/>
Financial Status	Grant-in-aid	<input checked="" type="checkbox"/>	UGC 2(f)	<input checked="" type="checkbox"/>	UGC 12B	<input checked="" type="checkbox"/>

* Recognized under notification no.F.9-11/81-U.3, Government of India, Ministry of Education and Culture (Department of Education), New Delhi dt.10.11.1981 conferred by section 3 of the UGC Act 1956 (3 of 1956), the Central Government.

Grant-in-aid + Self Financing	<input checked="" type="checkbox"/>	Totally Self-financing	<input type="checkbox"/>
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1.11 Type of Faculty/Programme

Arts	<input checked="" type="checkbox"/>	Science	<input checked="" type="checkbox"/>	Commerce	<input checked="" type="checkbox"/>	Law	<input type="checkbox"/>	PEI (Phys Edu)	<input type="checkbox"/>
TEI (Edu)	<input checked="" type="checkbox"/>	Engineering	<input type="checkbox"/>	Health Science	<input type="checkbox"/>	Management	<input checked="" type="checkbox"/>		
Others (Specify)	<div style="border: 1px solid black; padding: 5px;"> M.Tech.(Computer Science) and M.Tech.(Optoelectronics and Communications) </div>								

1.12 Name of the Affiliating University (*for the Colleges*)

Not applicable

1.13 Special status conferred by Central/ State Government-- UGC/CSIR/DST/DBT/ICMR etc

Autonomy by State/Central Govt. / University	<div>Central Govt.</div>		
University with Potential for Excellence	<div></div>	UGC-CPE	<div></div>
DST Star Scheme	<div></div>	UGC-CE	<div></div>
UGC-Special Assistance Programme	<div>Yes</div>	DST-FIST	<div>Yes</div>
UGC-Innovative PG programmes	<div>Yes</div>	Any other (Specify)	<div> UGC DBT Projects DAE Project ISRO DRDO DST-TSDB DST-SERB SSSIHL funding </div>
UGC-COP Programmes	<div></div>		

2. IQAC Composition and Activities

2.1 No. of Teachers	<div>8</div>
2.2 No. of Administrative/Technical staff	<div>2</div>
2.3 No. of students	<div>1</div>
2.4 No. of Management representatives	<div>1</div>
2.5 No. of Alumni	<div>1</div>
2.6 No. of any other stakeholder and Community representatives	<div>1</div>
2.7 No. of Employers/ Industrialists	<div>1</div>
2.8 No. of other External Experts	<div>1</div>
2.9 Total No. of members	<div>16</div>
2.10 No. of IQAC meetings held **	<div>1</div>

** Minutes attached (Enclosure-1)

2.11 No. of meetings with various stakeholders:	No.	<div>12</div>	Faculty	<div>2</div>
	Non-Teaching Staff	<div>1</div>	Students	<div>4</div>
	Alumni	<div>2</div>	Others	<div>3</div>

In addition to the above meetings, the outcome of the following meetings held with various stakeholders, have also been used as inputs by IQAC:

Committees that cater to academic standards at SSSIHL:

- Academic Council
- Research Conferment Cell
- Board of Studies
- Institutional Ethics Committee
- Institutional Biosafety Committee
- Institute Industry Interface Cell (IIIC)
- Alumni Business meet

Committees that cater to quality of life at the different Campuses of SSSIHL:

- Campus-Hostel Management Committee
- Leadership Committee

Committees that cater to governance at SSSIHL:

- Board of Management
- Planning and Monitoring Board

2.12 Has IQAC received any funding from UGC during the year? Yes ☐ No ☒

If yes, mention the amount

NA

2.13 Seminars and Conferences (only quality related)

(i) No. of Seminars/Conferences/ Workshops/Symposia organized by the IQAC

Total Nos. International National State Institution Level

Note: The institute centrally organizes various seminars, conferences, workshops, symposia to enhance quality of knowledge wherein majority of IQAC members are part of it.

(ii) Themes

To enhance the knowledge base of the students, the departments identified workshops in the following areas:

BIOSCIENCES

- Informatics, Genetics, Mycology and Antibodies
- Hands-on Experience in Advanced Research Techniques (HEART)

CHEMISTRY

- Frontiers in Chemical Sciences

ENGLISH LANGUAGE & LITERATURE

- Decoding the Media Discourse

FOOD & NUTRITIONAL SCIENCES

- Specialized, Ayurvedic & Innovative Foods & Nutrition Summit

MATHEMATICS & COMPUTER SCIENCE

- Data Science,
- Big Data Genomics Synergy,
- Deep Learning,
- Intel & Calligo Software Training: An Intro to Artificial Intelligence
- VR, IoT and Cloud

MANAGEMENT & COMMERCE

- Entrepreneurship
- Challenges of the Emerging Digital Economy
- Innovation
- Balancing life: Inside Out
- Fostering Winning Culture in an Organisation through Values and Ethics
- Concept of GST
- Healthcare Management
- Design thinking

PHYSICS

- Python for Scientific Computing,
- PULSAR-2K17, A Journey through Physics
- Computational aspects of Materials Science

2.14 Significant Activities and contributions made by IQAC (2017-18)

The IQAC monitors the progress of the following activities and contributes towards their effective implementation:

- **Academics:** The departmental committees of various departments meet regularly every year to take stock with regard to the upgradation of various academic, the allied programs, and the infrastructural facilities requirement therein.

Mathematics and Computer Science department has started a new PG program (M.Sc.) in Data Sciences and Computing and planned to start B.Sc.(Hons) in Computer Science in order to broaden the skill sets of the students.

- **Curriculum Enrichment-**

As per the guidelines provided by the NAAC with respect to(w.r.t.) Programme outcomes, Programme specific outcomes, Course objectives and Course outcomes, all the departments at SSSIHL have been requested to include these quality parameters in the syllabi of various current academic programs.

The departments reviewed the feedback with regard to the course content and its outcome received from the outgoing batches of students, alumni, professional practioners and the subject experts, considered to effectively mentor/monitor the progress of students' w.r.t. as to how to balance academics with the other activities. The task of taking corrective measures if any, the department assigned this to a panel of faculty (comprising a minimum of three) per class to assist the teacher concerned in holding special sessions (if required) to find the student's pulse/feedback/opinions/suggestions. This particular exercise has been carried out at individual department level and the class feedback based measures that are taken / to be taken are elucidated below:

- Department of Biosciences:
 - As there is a demand on a topic such as immunology the department wishes to implement for the ensuing batch of UG Students.
- Department of Chemistry:
 - Based on feedback, the department plans to introduce a few selective topics of industrial importance at both UG and PG level.
- Department of Mathematics and Computer Science:
 - It is intended to reinforce the Foundations of Mathematics for III year Undergraduate students in the area of Algebra, Analysis, Topology and Number Theory.
 - The department planned to review syllabi of Undergraduate, Postgraduate and Professional Programmes to incorporate the current developments in respective fields for implementation in June 2019.
- Department of Physics:
 - Planned to review B.Sc.(Hons.) curriculum to balance between core and allied subjects, relevance of common courses offered at the first two years etc.
 - The department plans to review the list of suggested text books for UG and PG courses.
 - The students those who are pursuing PG would be encouraged to credit personality development, IPR, communications skills and yoga as per CBCS norms.

- Department of Management and Commerce:
 - The department proposed to review the syllabus of MBA Programme for implementing from June 2019 to base it on experiential / practical learning.
 - It is proposed to introduce Healthcare Management specialisation with the help of sister organisation SSSIHMS of Prasanthigram and Whitefield.
 - The SSSIHMS would develop Internship for 12 months or fellowship programme to MBA students passing out from Sri Sathya Sai Institute of Higher Learning, which may provide all kinds of healthcare exposure to students including those at SSS medical institutions, Mobile Hospital, etc.
- Department of Economics and Humanities: (Economics, Political Science, Philosophy, History and Indian Culture)
 - Based on the subject experts and student feedback it is proposed to discuss the developments in the field of economics and weekly departmental colloquium sessions are planned by inviting economists/practitioners.
 - Planned to introduce Viva-voce at the end of the first year MA Programme, which would help in boosting their academic confidence level.
 - Planned to review Political Science curriculum offered in BA Programme.
- Department of Languages: (English Language & Literature, Sanskrit, Hindi, Telugu Language & Literature)
 - Planned to review the curriculum of General English offered in Undergraduate Programmes and BA (Optional English).
- **Research Thrust-**

The close academic interactions that the AQAC members had with different faculty members of SSSIHL resulted in identifying the following thrust areas of research that are illustrated below.

 - Department of Mathematics and Computer Science:
 - Differential Equation and Analysis
 - Mathematical Modelling
 - Deep Learning and Machine Learning
 - Computer Vision and Image processing
 - Cryptography and Digital Information Security
 - HiPC, Parellel & distributed Computing
 - Department of Physics:
 - Photonics – Fiber Optic Sensors-Fiber Lasers- Multimodal Microscopy and imaging- Nonlinear optical properties of materials- Bio-medical applications of Raman Spectroscopy- Optofulidic based technologies for disease diagnostics- Laser micromachining for integrated optics.
 - Materials Science – Thermo-electric materials- Photovoltaics, Piezoelectric & Multiferroic devices for energy harvesting- Materials for efficient Energy storage- Water defloridation using nanomaterials- Ab initio calculations of Electronic Structures of Materials, Super dielectric Materials and magneto-electric coupling.
 - Nuclear Physics – applications of Nuclear Techniques-Low cost small organ Gamma-camera for imaging- Materials for Radiation shielding- Low Energy Electron-Gamma spectroscopy.
 - Department of Chemistry:
 - Sensors and sensing technology – Water quality monitoring – Coronary heart disease markers- Bioprocessing and Bio-remediation – Cellulolytic enzymes from indigenous fungi – Microbes fortified biosorbents for water treatment-
 - Nutraceuticals – Anti-oxidants - Mushrooms enrichment with essential minerals.

- Nanotechnology and Plasmonics – Metal decorated Carbon nanostructures for catalytic applications – Generations of Plasmonic structures for studies on SPCE, SERS and MEF.
- Medicinal Plants – semi-synthesis.
- Computational chemistry – computer aided drug design.
- Liquid crystals.
- Supercapacitors – electrochemical sensing – fuel cells.
- Metabolomics and metabolic analysis.
- Interdepartmental collaborative research projects with sister institutions: SSSIHMS, Prasanthigram (Andhra Pradesh) and Whitefield (Karnataka) are being undertaken to complement the vision of 'Affordable Healthcare' – point of care diagnostics.
- Department of Biosciences:
 - Health and Environment – Disease Biology involving Bone, Eye and Heart; Regenerative Biology – Autologous Chondrocyte Implantation; Infection Biology – Antibiotic resistance; Microbial fuel cells for waste water treatment.
 - Screening and analysis of biologically important molecules – Medicinal Plants; Medicinally important fungi; Blue Proteins.
- Department of Food and Nutritional Sciences:
 - Applied Nutrition: Functional Nutrition–Dietary strategies for management of life style disorders such as obesity, diabetes, cancer, inflammatory and bone metabolic disorders; Public Nutrition and Epidemiology–Nutritional epidemiology of micronutrient malnutrition and chronic diseases; Assessment of nutritional status; Health promotion through nutrition communication with special focus on women health and child nutrition; Food Chemistry – Nutritional and metabolite profiling of conventional and unconventional food crops; Therapeutic and bioactivity assessment of phytochemicals and functional foods; Ayurvedic Nutrition and Ayurchemicals.
 - Food Science and Technology: Food Processing and Preservation Technologies – Bakery and confectionery technology, Dairy product technology, Non-thermal and bio-based food preservation technologies; Food Product Development – Value added horticultural and millet based products; Functional and dietetic foods, designer foods for special needs; Food Materials Science – Characterization of food materials for various applications
- Department of Management and Commerce:
 - Entrepreneurship, Rural management and Healthcare Management.
- Department of Education:
 - Environmental Education
 - Educational Technology
 - Value Education
- Department of Economics and Humanities:
 - Macroeconomic Policy Modelling
 - Financial Econometrics
 - Development Economics
- Department of Languages: (English Language & Literature, Sanskrit, Hindi, Telugu Language & Literature)
 - Literature: British, Postmodern, Postcolonial literatures
 - Language: Media language, ELT

- **Infrastructure-**

SSSIHL Central Research Instruments Facility (CRIF) has been created with the objective of providing the latest and advanced characterization/analytical tools to carry out translational research in various areas of Science and Technology. These in essence, include physical, biological, chemical, materials science, food and computational and interdisciplinary areas. SSSIHL CRIF also houses a complement of specialized research facilities housing several sophisticated state-of-the-art instruments in the areas of disease biology and plasmonics. This would enable our researchers to keep pace with the scientific developments taking place globally; and to publish their research findings in peer reviewed high impact journals; and through their concerted efforts to carry out research in cutting edge areas of Science and Technology and contribute to the needs of the society at large.

This facility would be used extensively by postgraduate and doctoral students as well as by faculty members across all the campuses of SSSIHL. Full-time technical assistants with specific expertise operate and maintain the instruments.

The facility is further supported through a constituted body of dynamic faculty members as instruments in-charge and full-time Research Associates assist in meeting the intended research objectives of the Centre.

The core facilities are shared resources offering a range of services to the research community at SSSIHL. Indeed, these will further strengthen, expand inter and intra-university research collaborative capabilities of our faculty.

The additional infrastructure pertaining to each department is enlisted below:

- Department of Mathematics and Computer Science: (Hardware, Software facilities)-
 - In M.Tech.(CS) the access to XSEDE (Extreme Science and Engineering Discovery Environment) has been modified. It is through OTP on smart phones.
 - For enhancing progress of M.Tech. projects the email access during college time and night study hours has been enabled. In the DMACS lab the PyTorch has been proposed to be installed in cluster.
 - The departmental library is being augmented with books on Actuarial Science, magazines and journals.
- Department of Biosciences:
 - Proposed to augment stereo microscopes in the department, proposed to setup Medicinal garden, Enhancing departmental library with the funds from UGC-SAP, DST-FIST and DBT-BIF Programmes.

In addition to the above IQAC monitors and ensures:

- The merit based open admission policy, which is a reflection of how the carefully chosen students excel in both academics and co-curricular area and make use of the best possible facilities available.
- Students diversity in enrolment: (26 out of 29 states in India).
- Academic and Administrative ratio [1 : 1.14 (154 : 177)]

- One in five teachers are residential (hostel) in this Integral Education system.
- Teaching faculty with Ph.D. and teaching experience.
- Online Feedback mechanism for reviewing and improving Quality of Teaching.
- Promotion and reward of quality of teaching/research ('Sai Krishna' awards are given every alternate year, one for each campus of the University).
- Conduction of interdisciplinary Science colloquia every fortnight to facilitate better understanding amongst various Science discipline.
- Recruitment of faculty as per UGC's standards. (10 recruitments at faculty level were made in the year 2017-18).
- Final year postgraduate students (81%) appear for national examinations such as the GATE/JEST, DBT, CSIR-UGC NET etc.
- Publication of the research findings of the faculty in peer reviewed national and international journals of high repute. (The faculty at SSSIHL across various departments regularly publish their findings in leading scientific journals such as Chemical Communications, Nature Scientific Reports, IEEE based journals, Physical chemistry, ACS Applied materials and interfaces, Applied Biochemistry and Biotechnology etc.)
- Collaborative research with sister organisations, Linkages and Research for Societal Benefit.
- Engaging Young Faculty Members in Research.
- Better quality of life through Campus-Hostel Management Committee (CHMC)
- Promotion of Public Awareness of SSSIHL's Contribution of Quality Education.
- Sri Sathya Sai Values based Integral Education System is internalised. (The University education system focuses on grooming the Intellectual, Physical, Academic and emotional facets of a personality)

2.15 Plan of Action by IQAC/Outcome (2017-18)

The plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year.

Plan of Action	Outcome / Achievements																											
<ul style="list-style-type: none">Curriculum review through Boards of Studies and Academic Council meetings.	<p>The Board of Studies of various departments were conducted during July to October 2017.</p> <ul style="list-style-type: none">Introduction of new stream of specialization in Actuarial Science in the M.Sc.(Mathematics) ProgrammeIntroduction of new electives viz., Topology, Linear Algebra and Complex Analysis in M.Sc.(Mathematics) ProgrammeIntroduction new specializations such as (1) Photonics, (2) Nuclear Physics and (3) Materials Science in the M.Sc.(Physics) ProgrammeUpdated the syllabus of B.Sc.(Hons.) in Physics ProgrammeUpdated the syllabus of M.Sc.(Physics) ProgrammeUpdated academic regulations of Postgraduate ProgrammeUpdated the syllabus of B.Sc.(Hons.) in Chemistry ProgrammeUpdated the syllabus of M.Sc.(Chemistry) ProgrammeUpdated the syllabus of M.Sc.(Biosciences) ProgrammeUpdated the syllabus of M.Sc.(Food and Nutritional Sciences) ProgrammeRatification of newly introduced syllabus and academic regulations of BPA(Music)Updated the syllabus of General English for all Undergraduate ProgrammesUpdated syllabus of UPHL-602 in BA major in Philosophy Programme <p>The Academic Council meeting was conducted on 11 October 2017 and approved / ratified the above deliberations.</p>																											
<ul style="list-style-type: none">Collaborative research with Govt. and Private agencies, and Research for Societal Benefit.	<p>COLLABORATORS</p> <p>The Science faculty at SSSIHL have established collaborative links with national and international premier academic institutions and industries as listed below:</p> <p>Collaborators</p> <table><tr><th colspan="3">Collaborators from Academia & Research Institutions</th></tr><tr><td>IGCAR, Kalpakkam</td><td>IIT - Madras, Kharagpur</td><td>CBER/US-FDA, USA</td></tr><tr><td>IISER Mohali</td><td>IBAB, Bengaluru</td><td>Univ. of Maryland BC, USA</td></tr><tr><td>RRI, Bengaluru</td><td>IIHR, Bengaluru</td><td>New Jersey Inst. Tech., USA</td></tr><tr><td>TIFR Mumbai</td><td>MDRF, Chennai</td><td>Clemson University, USA</td></tr><tr><td>GSI, Hyderabad</td><td>IISc, Bengaluru</td><td>JAIST, Japan</td></tr><tr><td>NIN, Hyderabad</td><td>Shalgreńska Univ Hosp, Sweden</td><td>Baylor Colg. Med., USA</td></tr><tr><td>NCL Pune</td><td>Univ of Wollongong, Australia</td><td>Univ. of Colorado, USA</td></tr><tr><td>ICGEB, New Delhi</td><td>NIPER, Hyderabad</td><td>Univ. del Norte, Columbia</td></tr></table>	Collaborators from Academia & Research Institutions			IGCAR, Kalpakkam	IIT - Madras, Kharagpur	CBER/US-FDA, USA	IISER Mohali	IBAB, Bengaluru	Univ. of Maryland BC, USA	RRI, Bengaluru	IIHR, Bengaluru	New Jersey Inst. Tech., USA	TIFR Mumbai	MDRF, Chennai	Clemson University, USA	GSI, Hyderabad	IISc, Bengaluru	JAIST, Japan	NIN, Hyderabad	Shalgreńska Univ Hosp, Sweden	Baylor Colg. Med., USA	NCL Pune	Univ of Wollongong, Australia	Univ. of Colorado, USA	ICGEB, New Delhi	NIPER, Hyderabad	Univ. del Norte, Columbia
Collaborators from Academia & Research Institutions																												
IGCAR, Kalpakkam	IIT - Madras, Kharagpur	CBER/US-FDA, USA																										
IISER Mohali	IBAB, Bengaluru	Univ. of Maryland BC, USA																										
RRI, Bengaluru	IIHR, Bengaluru	New Jersey Inst. Tech., USA																										
TIFR Mumbai	MDRF, Chennai	Clemson University, USA																										
GSI, Hyderabad	IISc, Bengaluru	JAIST, Japan																										
NIN, Hyderabad	Shalgreńska Univ Hosp, Sweden	Baylor Colg. Med., USA																										
NCL Pune	Univ of Wollongong, Australia	Univ. of Colorado, USA																										
ICGEB, New Delhi	NIPER, Hyderabad	Univ. del Norte, Columbia																										

	Industrial Partners	
	Grey Scientific Labs, Visakapatnam	Agilent Technologies India Pvt. Ltd.
	Amara Raja Batteries Pvt. Ltd., Tirupati	Twastrix, Pune
	LightMotif Automation Sensors and Systems Pvt. Ltd., Hyderabad	Omix Research & Diagnostics Laboratories Pvt. Ltd., Bengaluru
	Lab Engineers, Bengaluru	Labby Inc., USA
	Insta Power Ltd., New Delhi	Symrise, Chennai
	Indras Pvt. Ltd., Hyderabad	Syngene Intl Ltd, Bengaluru
	<p>IQAC has its imprint on all the following research projects/activities:</p> <p>The institute, in order to support socially beneficial research and to provide the best possible facilities for students, scholars and faculty, has invested on equipment and infrastructure across all the campuses. The expenditure on general equipment and infrastructure was ₹8.11 crores.</p> <p>The ongoing department-wise research projects are as follows:</p> <p>Mathematics and Computer Science:</p> <ul style="list-style-type: none"> Automatic Defense against Zero Day Polymorphic Worms in Communication Networks using Machine Learning Algorithms – SSSIHL funding. <p>Physics:</p> <ul style="list-style-type: none"> Design and Development of Small Organ Imaging Gamma Camera System – SSSIHL funding. Multi Model Microscope: Field Trails (Phase-II) – DST-TSDB. Research based reforms in Physics Instruction: Classroom and Laboratory – VGST, DST, Govt. of Karnataka. DST special assistance Programme (FIST). <p>Chemistry:</p> <ul style="list-style-type: none"> Synthesis of novel Andrographolide derivatives as potential anticancer and antibacterial agents – CSIR. Development and Validation of an indigenous high sensitivity low cost paper based assay for Lp-PLA2 and other cardiac markers to identify Indians at risk for early onset of coronary artery disease – 4S Foundation (USA). Regiospecific functionalization of Anisotropic Nanoparticles & Implications towards generation Plasmonic Metal Nanoclusters – DST INSPIRE Faculty Award <p>Biosciences:</p> <ul style="list-style-type: none"> Augmenting Postgraduate Teaching & Research facilities – DST-FIST. Antibiotic resistance in clinically isolated bacteria - OMIX research and diagnostic laboratories Pvt. Ltd. Bioinformatics Infrastructure Facility (BIF) – DBT. Mechanism of ATP secretion and the role of ATP-activated P2 receptors in the Microglial inflammatory response: Implications for multiple sclerosis – DBTD. 	

	<p><u>Few Research outcomes:</u></p> <p>Active Collaborative Research Projects with International Institutions and Companies:</p> <ul style="list-style-type: none"> • The Department of Biosciences has established a “Centre for Regenerative Medicine and Tissue Engineering” in Collaboration with Sri Sathya Sai Institute of Higher Medical Sciences – Prasanthigram. Faculty from the Department of Biosciences have developed “Autologous Chondrocyte Implantation” to treat the osteochondral defects of the knee in collaboration with the Department of Orthopedics, SSSIHMS-PG. This project has been approved by the Institutional Ethics Committee of SSSIHL (SSSIHL/IEC/PSN/BS/2012/01) and Clinical Trials Registry of India (CTRI/2015/06/005841). First transplantation of invitro Cultured Autologous Chondrocytes has been successfully performed and one year followup reveals excellent regeneration and repair of the knee cartilage. • The Department of Biosciences along with the Dept. of Physics, SSSIHL has signed a Memorandum of Understanding with Centre for Biologics Evaluation and Research (CBER), Food and Drug Administration (FDA), Bethesda, Maryland, USA. As part of the research agreement, our research teams have synthesized several fluorescent nanoparticles for ultrasensitive, rapid and specific detection of HIV-1 p24 using Time Resolved fluorescence in a Sandwich ELISA format. The lowest detection limit of this assay is 0.3 pg/ml in blood serum or plasma. There have been no false positive reactions and cross reactivity was not observed, when tested using serum/plasma samples infected with other viruses such as Dengue, Hepatitis-B and HCV. • The Department of Mathematics and Computer Science has signed an MoU with Maestro Technologies, Inc. located at 1 W State Street, Trenton, NJ 08608 to work with infrastructure dedicated to Data Science, Analytics and Computing program and also enable engaging suitably qualified Academic Faculty to educate and train students in related new technologies and help in implementation of Research projects with protocols and objectives of the Institute. – 1st October 2017. • The Department of Biosciences, SSSIHL in Collaboration with OmiX Research and Diagnostics Laboratories Private Limited, Bangalore for a project on '<i>Detection of Antimicrobial resistance genes in bacterial cultures and clinical isolates</i>' – 2nd November 2017. <p>New MoUs signed during 2017-18:</p> <ul style="list-style-type: none"> • The Department of Chemistry has signed an MoU with Labby Inc., a company registered in United States of America having its registered office at 125 Chiswick Rd, Brighton, 02135, Massachusetts, USA dt. 2nd February 2018. The purpose of the agreement is to set out the arrangements for collaboration between the parties for the 'Design, Development and trials of Device(s) for Spectrometry and Image based Bio-medical sensing' for a duration of 5 years. • The Department of Chemistry has signed an MoU with Twastrix a company registered in India under the Maharashtra Shops and Establishments Act 1948 having registered office at G-602, Mystique Moods, New Airport Road, Viman Nagar, Pune 411014 dt. 15th March 2018. The purpose of this MoU is
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	<p>to set out the arrangements for collaboration between the parties for Design, Assembly and Development of Surface Plasmon-Coupled Emission based Hand-held and/or Benchtop Device(s) for Spectrometry and Image based Bio-medical and Chemical Sensing.</p> <ul style="list-style-type: none"> • An agreement between TATA Education and Development Trust, C/o Sri Ratan Tata Trust, Bomaby House, Homi Mody Street, Fort, Mumbai – 400 001 and department of Chemistry dt. 23rd August 2017. The Trust sanctioned an amount of Rs.96.92 lakhs over three years to SSSIHL for the research project title 'ANIRVID' A cellphone based point-of-care diagnostic device (for dopamine and serotonin) to evaluate the effect of Therapeutic interventions on depression and heart ailments. <p>Research for Societal benefit:</p> <p>Research at the institute continues to touch greater milestones without sacrificing the focus on societal benefit. For instance, SSSIHL faculty are involved in the development of sensors for water monitoring in and around Anantapur District. Successful performance of autologous chondrocyte implantation in a patient with osteochondral defect in collaboration with Sri Sathya Sai Institute of Higher Medical Sciences is a noteworthy achievement by the faculty. This project was completed in 2017.</p> <p>Besides meeting in rural needs, our faculty are also involved in the design and fabrication of high end equipment such as multimodal microscope and resonant optical gyroscope for a variety of applications.</p> <p>The Research Conferment Cell (RCC) meets twice a year and sends the inputs to the administration on various aspects of research and research related activities.</p> <p>Research Highlights in the year 2017-18</p> <p><u>Sciences</u></p> <p>BIG DATA ANALYTICS AND HIGH PERFORMANCE COMPUTING The Department of Mathematics & Computer Science are working on DNA sequence Analysis and Structural Biology using High Performance Computing (HPC) and Machine Learning (ML) tools. They also envisage providing a framework for compressed storage, analysis and secured sharing of genome sequence. They are working to build an immutable data storage and management platform in Big Data environment using Scalable Blockchain. Study on issues of Interoperability of Blockchain is opening up ways to develop platform for Fraud Free financial transactions, Comprehensive Health Insurance Management systems, E-voting platform etc. The researchers intend to use HPC technology to detect fake news and rumours using epidemic models and large graphs. Efforts are on to demonstrate that Artificial Learning (AI) and Blockchain together can provide solutions to many real-life problems and finally deliver the promise that AI holds. Work on predictive analytics in healthcare, such as effective treatment for Perinatal depression, Automatic segmentation and detection of stones in case of Renal CT images, early detection of cardiac disorders from CT images is also underway.</p>
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	<p>DEVELOPMENT OF SMALL ORGAN IMAGING GAMMA CAMERA SYSTEM</p> <p>Thyroid diseases are among the commonest endocrine disorders worldwide and in India. It is estimated that 42 million people in India suffer from thyroid diseases. Early diagnosis and treatment remain the cornerstone of medical management. Development of portable thyroid specific imaging system which serves as a cheaper alternative to the traditional large field and expensive gamma cameras is being pursued at the Department of Physics. The spatial resolution is expected to be better than the traditional Gamma Cameras. The Department of Physics has developed a prototype of Small Area Imaging Gamma Camera (SAI-GC), with all digital Front End Electronics and Data Acquisition System. Relevant software is being developed for Image Reconstruction and Processing of gamma camera images to detect the cases of abnormalities like hyper and hypothyroidism.</p> <p>RESEARCH BASED REFORMS IN PHYSICS INSTRUCTION - CLASSROOM AND LABORATORY</p> <p>One of the ways of improving the quality of Physics Education is through research-based methodologies involving concept inventories, active learning, clicker methods, Interactive Lecture Demonstrations, Computer Simulations & Virtual Experiments and Context rich problems. The faculty members involved in undergraduate teaching are involved in the design and development of courses based on physics educational research practices in which efficacy of research-based physics learning strategies are tested and implemented in classroom with active participation of learners. This is sponsored by the Government of Karnataka under the scheme of establishment of centers of Innovative Science Education (CISE) through VGST, DST, Karnataka.</p> <p>SYNTHESIS AND SEMI-SYNTHESIS OF NOVEL MOLECULES WITH POTENTIAL THERAPEUTIC APPLICATIONS</p> <p>In this regard, spirobibenzopyrans and andrographolide have been identified as the novel synthetic and semi-synthetic pharmacophores respectively. In due course of research, we have discovered a new class of spirobibenzopyrans with potent anti-cancer activity. A library of over 40 novel spirobibenzopyrans have been synthesized and studied for their therapeutic applications. On the other hand, andrographolide is known to possess a wide range of biological activities such as anticancer, antidiabetic, anti-inflammatory, etc. Currently, isolation of the active compound andrographolide from <i>Andrographis paniculata</i> and further synthesis of derivatives as potential leads against various diseases is under progress.</p> <p>The clear objective of the research is to provide new compounds having potent biological activities like anti-cancer, anti-inflammatory and anti-bacterial properties with lesser side-effects, which therefore has high social relevance in tackling major health problems in our country.</p> <p>DEFLUORIDATION OF WATER BY POLYMER-METAL ION NANO-COMPOSITES: SYNTHESIS, CHARACTERIZATION AND THEIR APPLICATION STUDIES</p> <p>Fluoride has a tendency to disperse in ground water from the rocks and soil. The excess amount (≥ 1.5 mg/L) of fluoride intake leads to fluorosis, collagen break down and disruption of immune system. The Geographical Information System (GIS) aided assessments of the ground water of the Rayalseema region of Andhra Pradesh, India revealed that more than 70% of the villages surpass maximum limit of fluoride (1.5 mg/L) defined as per World Health Organization</p>
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	<p>(WHO) and Bureau of Indian Standards (BIS).</p> <p>Therefore, the development of cheaper, robust, eco-friendly, and easy to use materials for defluoridation of drinking water would be the best to assist to extenuate this 'fluorosis menace'. The Department of Chemistry is actively engaged in the synthesis of potential adsorbents based on polymer metal nanocomposites for effective removal of fluoride from ground water.</p> <p>SURFACE PLASMON-COUPLED EMISSION BASED BENCH-TOP DEVICE FOR CARDIAC TROPONIN T QUANTIFICATION</p> <p>Troponin T (cTnT) measurement is important for ruling in or ruling out heart attacks and evaluation of patients with acute coronary syndromes. With the inclusion of high-sensitivity cTnT (hs-cTnT) assays, an early and more frequent diagnosis of AMI has been made possible. However, there is an increased need for individualized care in patients with heart disease, especially in resource limited settings. Ironically, the reliability, sensitivity and rapid diagnostics of current cTnT detection platforms come with the need for sophisticated instrumentation due to the non-specificity of the existent low-cost methods and increasing health care expenditure.</p> <p>The researchers at the Department of Chemistry are engaged in the design and development of SPCE based bench-top device for cTnT quantification resulting in near real-time cardiac damage assessment, and clinical decision making, in rural India and emergency conditions.</p> <p>The current capital-intensive technology that is in use towards quantification of cardiac Troponin T, restricts its reach to a large segment of the Indian population. A low-cost affordable technology would help widen the impact and also to render timely treatment during first Aid and emergency conditions.</p> <p>DETECTION OF ANTIMICROBIAL RESISTANCE GENES IN BACTERIAL CULTURES AND CLINICAL ISOLATES</p> <p>Drug resistant bacteria have been the major cause of increased morbidity and mortality affecting the vulnerable patients with decreased immunity. They are also one of the major causes of nosocomial infections in India. Antimicrobial resistance is a major clinical challenge in treating patients infected with antibiotic resistant bacteria. Hence, understanding the mechanisms of antibiotic resistance among clinically isolated bacterial pathogens may help in developing appropriate intervention strategies to tackle this global menace.</p> <p>The researchers intend to gain insights into the mechanisms of antibiotic resistance being employed by the pathogens and their capacity for horizontal gene transfer using whole genome sequencing. Scant information is available on WGS based genomic analyses of clinical isolates from India.</p> <p>The proposed research efforts could offer insights into the prevalence of the antibiotic resistance genes (AMR genes) in the Indian subcontinent. Our laboratory is involved in the characterization of (AMR genes) using a range of molecular tools among the isolated resistant cultures.</p> <p>RECEPTORS IN THE MICROGLIAL INFLAMMATORY RESPONSE: IMPLICATIONS FOR MULTIPLE SCLEROSIS</p> <p>Researchers at the Department of Biosciences are actively trying to understand whether secreted ATP has a role in the LPS and cytokine (TNFα and IFNγ) induced calcium response, expression of critical genes in inflammation, and</p>
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	<p>activation of phagocytosis and chemotaxis. This will help to understand the role of P2 receptors and downstream signaling events involved in the processes. It will also help us to dwelve into the details of the role of P2 receptors in a mouse model of MS and help identify possible therapeutic targets. It may be noted that some P2 receptor inhibitors are currently used as drugs, such as for thrombosis. Some are in phase II and phase III clinical trials for various cancers. The research work will validate these drugs for mouse model of MS (Multiple Sclerosis).</p> <p>This work proposes to reduce the lag period of these drugs for human MS trials. It will have considerable impact on understanding and identifying possible therapeutic targets in other neuro-degenerative diseases. Many genes that are induced by exogenous treatment of ATP (Hsp90 and HDACs) are known therapeutic targets in various diseases and hence inhibiting up-regulation of these genes by targeting purinergic receptors will have a favourable therapeutic effect. These diseases include Parkinsons, retinal degeneration and Alzhimers disease.</p> <p><u>Management & Commerce</u></p> <p>SPIRIT AT THE WORKPLACE (S@W): A STUDY OF S@W IN BUSINESS ORGANIZATIONS IN INDIA</p> <p>The dawn of the twenty first century has witnessed what appears to be a turnaround with many business organizations laying emphasis on ethics / values, Corporate Social Responsibility, and sustainability, with a focus on multiple stakeholder welfare maximization. Business organizations in many parts of the world still maintain a skewed attention to mere economic criteria, even at the cost of societal and environmental factors, leading to a sense of hollowness, ‘something missing,’ in the organization. Using the phrase that has become widespread today, we seem to have lost ‘spirit at the workplace’ also referred to as ‘S@W’ or ‘spirituality at the workplace’ or ‘workplace spirituality’.</p> <p>This exploratory research study, investigates the construct ‘Spirit at Work’ in an Indian context. This research uses extant literature coupled with empirical investigation of the perspectives and the perceptions of managers in Indian business organizations. This study has adopted a multiparadigmatic approach using a mix of quantitative and qualitative methods.</p> <p>The study identified new elements of S@W specific to the Indian context and thereby highlighted the differences in the perceptions and views of S@W between the Indian and Western context. It has drawn upon insights from Karma Yoga principles, an Indian pyscho-philosophical equivalent of S@W. It further depicted S@W as a dynamic experience – as a journey to be undertaken by business organizations as well as business managers from a basic level to an advanced level.</p> <p>In addition, it has presented both an individual-centric and an organization-centric approach to S@W. It shows that individual values and attitudes play a role in integration of S@W through ‘Personal attitude’ at the basic level and ‘Transpersonal work orientation’ at the advanced level of the S@W journey. Unlike earlier studies, this study indicates that organizational culture and philosophy too have an explicit role to play in the integration of S@W through ‘Engagement at the workplace’ at the basic level and ‘Transorganizational work orientation’ at the advanced level of the S@W journey.</p>
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	<p>DEVELOPING THE CONCEPT AND PRACTICE OF ‘INCLUSIVE BUSINESS’ FOR POVERTY ALLEVIATION: A STUDY OF SELECT ORGANIZATIONS IN INDIA</p> <p>This research work focuses on the concept and applications of Inclusive Business (IB) - businesses that enable the economically-weaker section of the populace to participate in market activities to gain by becoming part of the value-chain of firms as suppliers, distributors, employees or consumers. The study addresses three foundational issues, with the aim of advancing knowledge in this field relating to IBs: What is Inclusive Business, What is the process of value creation in an Inclusive Business, and How can organizations formulate strategies for developing inclusive business models?</p> <p>It has adopted a qualitative research design using the case-study method. The study of successful and unsuccessful IBs have led to three unique and important contributions to the body of knowledge available on the theory and practice of IBs.</p> <p>The first contribution aims at advancing the theoretical foundations of the field, by proffering a framework and a working definition for IB. The framework bridges—for the first time—ideas of human development and business strategy, by delineating how integration of the disenfranchised communities into value-chains can and must lead to the expansion of human capabilities on one hand, and enhanced firm competitiveness on the other.</p> <p>The second contribution of this study is the operationalization of the Human Development and Capabilities Approach (HDCA) through the development of a human-centric value-chain intervention (HC-VCI) framework. The HC-VCI framework is a first-of-its-kind management tool that focuses on helping the poor transition into market economies, rather than focusing exclusively on firm efficiency or competitiveness. The HC-VCI framework offers a novel perspective to human lives, where humans are valued not as factors of production but as social agents with human rights. These findings resonate with the latest research on well-being, human development and happiness.</p> <p>The third contribution is the development of a framework for formulating strategies for developing successful inclusive business models. This contribution is divided into two parts. In the first part, the study identifies specific contingencies that IBs face, and relevant capabilities needed to overcome the contingencies. Specifically, the contingency-capability framework developed in this study points towards a holistic view of strategy. In the second part, the study develops a process model of strategy formulation in IBs.</p> <p><u>Economics & Humanities</u></p> <p>FINANCIAL AND MACROECONOMIC MODELLING</p> <p>Research at the Department of Economics is primarily focused on financial and macroeconomic modelling leading to policy analysis on the domestic and international economies. While the studies relating to economic policies, financial markets and their interlinkages in the emerging economies were taken up on the international front; the research on the domestic economy concentrated on diverse issues relating to various aspects of the Indian economy. These include topics like determination of exchange rate, inflation, oil prices, automobile demand, modelling volatility in stock markets, measuring operational efficiency in Indian banks, studies in the fiscal aspects relating to GST, fiscal policy etc.</p>
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	<p>The research is quantitatively oriented, relying on leading edge techniques in statistics and econometrics in delivering research publications of high standard. Apart from producing high quality research publications in reputed national and international journals, the faculty at the department have also been regular participants in the conferences and seminars conducted by prestigious institutions across India.</p> <p>As an outcome of macroeconomic modelling, a doctoral research was done in the area of Current Account of India's Balance of Payments Under the New Economic Policy Regime. The summary is as follows:</p> <p>One of the most successful aspects of India's structural reforms has been the strength and dynamism of its external sector. The sector continues to be robust, despite sharp increase in India's imports over exports leading to huge trade deficits. India's balance of payments has recorded large and persistent surpluses, with foreign exchange reserves currently around US\$ 400 billion. Increased earnings from exports of services and remittances coupled with enhanced foreign investment inflows have provided strength to the external sector. The overall objective of this work is to identify and quantify linkages between the domestic and world economic developments on the one hand and the current account of India's Balance of Payments on the other, so as to make them more meaningful in terms of policy initiatives. Applied econometric methodology in keeping with the modern time series analysis is utilized to ensure rigorous analysis and valid inferences.</p> <p>THE 'I' OF WOMAN THROUGH THE EYE OF SHAKESPEAREAN DRAMA</p> <p>The thesis is an investigation of the nature and locus of the feminine as represented in the aesthetic universe of the Shakespearean oeuvre. About 20-25 plays of Shakespeare have been reviewed in this study, using variables such as the trappings of patriarchy, agency and the principle of androgyny. This triangulation helped in mapping the complexity of human behaviour and also minimised the intrinsic shortcomings of any single approach of the feminist coterie. Whereas some texts were more viable for particular kinds of interpretations, the others refused to render meaning when subjected to certain other theories, owing both to formal principles and the specificity of the content.</p> <p>Each chapter reads a cluster of plays and traces a subliminal and discontinuous emergence of notions associated with feminine identity. There are some counterintuitive findings on the attribution of evil on the nexus of femininity and agency. The study discovers how the conceptions of androgyny in the human personality, and the uroboric unity of being, help in negotiating selfhood as transcendent of gender dispositifs.</p> <p>The plays are, more or less, an alibi. The single desideratum that has guided this disquisition is inclusion, even at the risk of a rupture of coherence. The conclusion highlights how Shakespeare balanced his imagination with reality to produce some of the most enduring portraits of women in the whole of world literature. Reconnaissance of gender and its performativity, through the trope of female characters in Shakespearean drama, unravelled inclusion and relatedness as the core of femininity.</p> <p>Yearly faculty workshops were organized. Faculty workshop is organized in the last week of May every year. The training for young faculty was provided with regards to question paper setting, evaluation and other rules of engagement.</p>
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<ul style="list-style-type: none"> Engaging Young Faculty Members in Research Consultancy Services offered free of charge Campus-Hostel Management Committee 	<p>Young faculty members were also encouraged to enrol for doing Ph.D. and those faculty with Ph.D. qualifications were encouraged to undertake supervision of research work either through projects or by research scholars.</p> <ul style="list-style-type: none"> Sri Sathya Sai General Hospital: e-NeutriAnalyzer: A Mobile App to help physicians to evaluate the nutritional needs of focusing on various categories, such as Lifestyle, Food Habits, History of Diseases etc. – 2018 and ongoing SSSIHMS Whitefield: SARANG – A HL7 interoperability engine to integrate the communication between different medical equipment – 2018 SSSIHMS Whitefield: An application to map the medical terms in SSSIHL to international standards – SNOMED-CT – in order to process intelligent searches – Ongoing and 2019 release. SSSIHMS Whitefield: Structured Data Capture – Dynamic and structured data capture of patient data based on context for effective procedures – Ongoing and 2019 release. SSSIHMS Prasanthigram – CT image segmentation and classification for kidney stone, 2018 SSSIHMS Prasanthigram – Mobile App for Automatic Announcement over PA system for Blood Donors, 2018 Sri Sathya Sai Hostel for Senior Students, Prasanthinilayam, DialIn – A customizable telecommunication framework, 2018 Sri Sathya Sai Digital Studio: Automatic content based classification of images & videos 2017-18. SSSIHL: Internet Email – An intranet based email communication framework to communicate between campuses only MPLS network – 2018 Sri Sathya Sai Hostel, Muddenahalli: Health Score – An Android based customizable application to collect patient health, dietary and other habits to calculate a health score in order to prescribe treatment with a holistic approach – 2018 Sri Sathya Sai Hostel, Muddenahalli: HSBC – Hostel Services Banking Centre – An online application that integrates multiple self-reliance departments of the hostel to enable on point payment and multi-point spending e.g.,: Photocopy, Laundry, Photocopy, Telephones etc. - 2017 Sri Amit Sood, Five consultancy Projects for Ernest & Young MBA - Three Projects on Lean Six Sigma interventions MBA- Energy conservation in SSSIHMS <p>The four campuses and hostels of SSSIHL are important and co-dependent and complementary parts of the Institute. This committee deliberates and approves all decisions pertaining to the Campus and Hostel to ensure smooth functioning of the Campus-Hostel dyad.</p> <p>Three meetings were held in the year 2017-18 and issues related to faculty and students, curricular, co-curricular and extra-curricular activities of students, management, parity across campuses, campus-working schedule, campus-workers' welfare, facilities like bathroom complex in the hostel, garbage disposal, sports, cultural & self-reliance calendar, access of IT infrastructure to the students were discussed regularly in the CHMC meetings.</p>
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<ul style="list-style-type: none"> Leadership Team for Quality assurance 	<p>Leadership Team consisting of Vice-Chancellor, Registrar, Controller of Examinations, Directors of the Campuses, Wardens of the Campuses, Heads of Departments and Associate Heads of Departments of the Institute has been established in 2015. Periodical meetings are being held ever since.</p> <p>This team takes leadership role in all the academic and administrative matters. Points discussed in this meeting were on the topic of Sri Sathya Sai System of Integral Education and how to effectively implement it in the dynamically changing world of today. Detailed deliberations were held on aspects like effective student mentoring, awareness courses, need for cooperation from parents, more teacher's workshops and orientation programmes, collective ownership of students by teachers etc.</p>
<ul style="list-style-type: none"> Sri Sathya Sai Values-based Integral Education 	<p>Student teacher ratio of 9:1 is maintained as one of the best in the country. The model of integral education adopted, necessitates a favourable student-teacher ratio and a host of residential teachers who are willing to make sacrifices by living with the students and these by the student-teacher interaction that is the basis of a modern <i>Gurukula</i>.</p>
<ul style="list-style-type: none"> Promoting Green Initiatives in the campus 	<p>800kWp Solar Roof-top and Ground Mounted System was installed in Prasanthi Nilayam Campus of SSSIHL in April 2018. This will cater to the energy needs of CRIF and the Prasanthi Nilayam campus.</p>
<ul style="list-style-type: none"> Promoting Public Awareness of SSSIHL's Contribution and Quality Education 	<p>A well formulated and comprehensive annual report is brought out by the institute every year reporting the milestones achieved in the field of Quality education and other dimensions of holistic development being undertaken for the students in the institute. This is uploaded on the website for the public at large to refer to it.</p> <p>As a part of creating awareness about the institute for prospective applicants during the admissions season, admissions posters briefly describing the salient features of the value based education at SSSIHL is circulated to all the major schools and universities across India.</p> <p>Help of the Sri Sathya Sai Seva Organization, a sister organization of SSSIHL is taken to create awareness about this unique experiment of value based education across the country. This is done through the sevadal volunteers and office bearers of SSSSO.</p>

* Attached the Academic Calendar of the year as Annexure-I.

PS: Faculty achievements are given in the **Annexure-II**.

2.16 Whether the AQAR was placed in statutory body Yes ☒ No ☐

Management ☒ Syndicate ☐ Any other body ☐ Board of Management ☐

Provide the details of the action taken

AQAR along with Annual Report presented in Board of Management on 01/07/2018

The points stated in AQAR reflect in the Annual Report of the University. The key points and achievements are figured in comparison with the National averages in the Annual Report. The infographics provide qualitative status w.r.t. NAAC parameters and national averages.

Part – B

Criterion – 1

1. Curricular Aspects

1.1 Details about Academic Programmes

Level of the Programme	Number of existing Programmes	Number of programmes added during the year	Number of self-financing programmes	Number of value added / Career Oriented programmes
PhD	11	0	11	11
PG	7	1 (M.Sc. (Data Sci and Computing))	8	8
UG	11	0	11	11
PG Diploma	Not applicable	Not applicable	Not applicable	Not applicable
Advanced Diploma	Not applicable	Not applicable	Not applicable	Not applicable
Diploma	1	1	1	1
Certificate	Not applicable	Not applicable	Not applicable	Not applicable
Others (Professional)	5	-	5	5
Total	35	2	36	36
Interdisciplinary	0	-	0	0
Innovative	3	1**	3	3

** M.Sc Data Science and Computing

For complete details for all the programmes offered in each campus are given in the website

<http://sssihl.edu.in/sssuniversity/Admissions/CoursesforAdmissions.aspx>

1.2 (i) Flexibility of the Curriculum: ~~CBCS~~/Core✓/Elective option ✓ / ~~Open options~~

(ii) Pattern of programmes:

Pattern	Number of programmes
Semester	✓ All programmes
Trimester	NA
Annual	NA

1.3 Feedback from stakeholders* Alumni ☒ Parents ☒ Employers ☒ Students ☒
(On all aspects)

Mode of feedback : Online ☒ Manual ☒ Co-operating schools (for PEI) ☐

**Please provide an analysis of the feedback in the Annexure (See Annexure-X)*

In order to ensure that the academic curriculum of the Institute is in sync with the developments happening in the scientific, economic and business world, regular interactions are held with the alumni, employers, members from the scientific and business community. Interactions are also held with parents and students of the Institute to analyse and study the impact of the inputs on their career and all round personality development.

The Alumni actively participate in providing feedback on the practical relevance of the courses that they have undergone on their work/profession. They also share the new developments which have happened in the field of their work/profession, which may be included as a part of the curricula. They help the alma mater in the conduct of annual workshops, seminars, and conferences. They are a part of the placement structure for the outgoing batch of students each year by running a programme which makes the students industry ready. (Refer to **Annexure-VIII**)

The feedback from different stakeholders are factored in the curricular design and upgradation, like starting new courses, new chapters to the syllabi of several courses in various disciplines and modifying the curriculum vis-à-vis the latest trends in the industry and academia.

Students: Through formal and informal interactions in and outside the classroom and through written course-wise feedback every semester. **Refer to Annexure-IX** for the Questionnaire of the online teaching quality feedback. The students also have interactions with the HoDs, Director, senior faculty and administration where their inputs are taken.

Industry: The industrial experts and employers of our students visit the institute for guest lectures, colloquia and give their valuable feedback regarding all aspects of the institute.

Parents: A comprehensive report on the performance of the students, both academic and integral item is sent to the parents when the students go for vacation. The parents share their feedback based on the report and their observations on the growth/development of their ward. A formal/informal interaction with the parents of each ward to appraise them about the performance of the student and elicit feedback about the different dimensions in the student life is also carried out at regular intervals. (Refer to **Annexure-X**)

Employers: The employers of our students generally use the alumni who are a part of the placement team, to share feedback on the performance of the newly recruited students to reinforce the current practices adopted by the various departments of the institute and at times also suggest introduction of new techniques which can further augment the skill set of the students.

1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.

- Mathematics & Computer Science- Steady Growth in the insurance industry in the last decade has significantly increased the demand for a qualified actuary in India. Actuarial Science is the most happening stream in the present times. Keeping in tune with the demand and due to the availability of qualified faculty, the DMACS department introduced a specialization in Actuarial Science in the M.Sc.(Mathematics) Programme. There was also an introduction of new electives viz., Topology, Linear Algebra and Complex Analysis in M.Sc.(Mathematics) Programme.
- Physics- Revision and update of syllabi was undertaken keeping in view the latest developments in the Physics. The salient features were:- redistribution of credits among core papers, introduction of additional electives, removal of specialization papers and interchange of papers among semesters.

- Updated academic regulations of Postgraduate Programme
- Updated the syllabus of B.Sc.(Hons.) in Chemistry Programme
- Updated the syllabus of M.Sc.(Chemistry) Programme
- Updated the syllabus of M.Sc.(Biosciences) Programme
- Updated the syllabus of M.Sc.(Food and Nutritional Sciences) Programme
- Ratification of syllabus and academic regulations of BPA(Music)
- Updated the syllabus of General English for all Undergraduate Programmes
- Updated syllabus of UPHL-602 in BA major in Philosophy Programme

1.5 Any new Department/Centre introduced during the year. If yes, give details.

Department of Music has been established offering Bachelor of Performing Arts in Music [B.P.A. (Music)] in June 2017-18 at Prasanthi Nilayam Campus of the Institute.

Central Research Instruments Facility (CRIF) has been established and started functioning (Testing) from June 2017-18 at Prasanthi Nilayam Campus of the Institute.

Criterion – 2

2. Teaching, Learning and Evaluation

2.1 Total No. of permanent faculty

Total	Asst. Professors	Associate Professors	Professors	Others
154	80	48	17	9 *

* Others: Teaching Assistant = 5, Information Scientist = 1, Placement Officer = 1, Part-time = 2

2.2 No. of permanent faculty with Ph.D.

102/154

2.3 No. of Faculty Positions Recruited (R) and Vacant (V) during the year

Asst. Professors		Associate Professors		Professors		Others (Research Faculty)		Total	
R	V	R	V	R	V	R	V	R	V
5	4	2	0	0	1	-	-	7	5

2.4 No. of Guest, Visiting and Temporary faculty

Not applicable

177

9

2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level	State level
Attended	2	94	
Presented papers	47	47	
Resource Persons	0	10 *	

* Resource persons/Chaired Person PS: Details are given in the **Annexure-III** and **Annexure-IV**

2.6 Innovative processes adopted by the institution in Teaching and Learning:

- Majority of the classrooms were converted to smart classrooms
- Several faculty members administered instantly graded quizzes using learning management system custom designed (e-Guru portal) for SSSIHL.
- National Science Day was conducted on Feb 28th 2018 having the theme “Scientific issues for the development of the Nation” with the objective to ignite young minds, in service of the country.
- The institute is in the process of adopting Programme Objectives (POs), Programme Specific Outcomes (PSOs) and Course Outcomes (Cos) based on the recommendations from the SSSIHL Strategic leadership team.

2.7 Total No. of actual teaching days during this academic year

199

2.8 Examination/ Evaluation Reforms initiated by the Institution (for example: Open Book Examination, Bar Coding, Double Valuation, Photocopy, Online Multiple Choice Questions)

Double Valuation, Semester system, Grading system from inception, Continuous Internal Evaluation (CIE)

2.9 No. of faculty members involved in curriculum restructuring/revision/syllabus development as member of Board of Study/Faculty/Curriculum Development workshop/Academic Council

All the faculty members of the SSSIHL

2.10 Average percentage of attendance of students

93%

2.11 Course/Programme wise distribution of pass percentage: (2017-18)

Title of the Programme	Total no. of students appeared	Division				
		O & O+ grade	A & A+	B grade	C grade	
		Distinction %	I %	II %	III %	Pass %
Ph.D	13	-	-	-	-	-
M.B.A	53	75	25	-	-	100
M.Tech. in Computer Science	24	46	54	-	-	100
M.Tech. in Optoelectronics and	7	71	29	-	-	100

Communications						
M.Sc. in Mathematics	17	18	76	-	-	100
M.Sc. in Physics	21	62	38	-	-	100
M.Sc. in Chemistry	9	22	78	-	-	100
M.Sc. in Biosciences	11	82	18	-	-	100
M.Sc.(food and Nutritional Sciences)	10	40	60	-	-	100
M.A. in English Language & Literature	4	50	50	-	-	100
M.A. in Economics	14	43	50	-	-	100
Integrated MCA	7	-	100	-	-	100
B.A.	19	37	58	5	-	100
B.Sc.(Hons) Economics	6	-	83	17	-	100
B.A. (Hons.) Economics	8	50	50	-	-	100
B.Sc. (Hons.) Biosciences	22	-	95	-	-	95
B.Sc. (Hons.) Chemistry	17	29	71	-	-	100
B.Sc. (Hons.) Mathematics	30	20	73	7	-	100
B.Sc. (Hons.) Physics	32	22	72	3	-	97
B.Sc.(Food and Nutritional Sciences)	16	-	94	-	-	94
B.Sc.(Food Technology)	6	-	100	-	-	100
B.Com.(Hons.)	74	54	39	3	-	96
BCA	10	10	90	-	-	100
BBA	40	35	50	13	-	98
B.Ed.	8	88	12	-	-	100

2.12 How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes:

Through reports of departmental committee meetings (held every month), Research Advisory Board, Academic Council meetings, Examination Committee, Teaching quality feedback, performance of students results and performance of students at national level exams etc.

2.13 Initiatives undertaken towards faculty development

<i>Faculty / Staff Development Programmes</i>	<i>Number of faculty benefitted</i>
FDP / Refresher courses	0
UGC – Faculty Improvement Programme	1
HRD programmes	0
Orientation programmes	0
Faculty exchange programme	0
Staff training conducted by the institute	Annual Faculty Development Programme Department of Mathematics & Computer Science-21, Physics- 15, Chemistry- 15, Biosciences- 16, Food & Nutritional Sciences- 6, Management and Commerce- 23, Economics- 7, Education- 7, English- 9 and Honorary faculty, teaching assistants and adjunct faculty etc.
Staff training conducted by other institutions	IISc
*Summer / Winter schools, Workshops, etc.	18 workshops/seminars 7 departments 127 faculty
Others	19

*PS: For further details, please see the **Annexure-IV**

2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	71	0	2	0
Technical + Support Staff	106	0	9	0
Total	177	0	11	0

Criterion – 3

3. Research, Consultancy and Extension

3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

The “*Sai Krishna Award for excellence in research and teaching*” has been instituted to recognize the prominent researchers and teachers at the Sri Sathya Sai Institute of Higher Learning each year. This award is given for excellence in Research for a given year and for excellence in teaching the next year and so on, alternately. The research awards are given for excellence in research in three categories viz., **a. Sciences b. Management, Commerce, Economics and Education c. Languages and Philosophy.**

Interdepartmental Science Colloquium provides an opportunity for doctoral research scholars, teaching faculty and visiting experts to share their research experiences with one another. It breaks down barriers of communication and helps merge traditionally distinct scientific disciplines, thereby creating new opportunities for research. There are around 18-20 sessions in one academic year. Details of colloquia for the year 2017-18 is provided under **Annexure-VII.**

Research Conferment Cell continues its activities of sensitization and promotion of research climate in the institute.

The Research Advisory Board of the institute monitors and gives inputs to faculty in Research, Consultancy and Extension.

Research Highlight for the year have been provided under 2.15 under page no.16 - 22 above.

3.2 Details regarding major projects

	Completed	Ongoing	Sanctioned	Submitted
Number	4	13	13	7
Outlay in ₹ Lakhs	₹ 94.26	₹ 555.96	₹ 204.42	₹ 200

For more details see the **Annexure-V**

3.3 Details regarding minor projects

	Completed	Ongoing	Sanctioned	Submitted
Number	1	1	-	-
Outlay in Rs. Lakhs	₹ 5	₹ 3.042	-	-

3.4 Details on research publications

	International + National	Others
Peer Review Journals	90	Books 2
Non-Peer Review Journals	-	
e-Journals	-	
Conference proceedings	116	

3.5 Details on Impact factor of publications:

Range 0.592 – 6.35 Average 2.726 h-index 2 Nos. in SCOPUS 32

PS: Sadhana – 0.592, WIREs Nanomedicine and Nanobiotechnology – 6.35,
Nanobiotechnology – 6.35

3.6 Research funds sanctioned and received from various funding agencies, industry and other organisations

Nature of the Project	Duration Year	Name of the funding Agency	Total grant Sanctioned (Rs. in lakhs)	Received (Rs. in lakhs)
<u>Major projects</u>				
1. Synthesis of Novel Andrographolide Derivatives as Potential Anticancer & Antibacterial Agents	3	CSIR	₹ 20	₹ 11.16
2. Fund for Science & Engineering Research (SERB) (ATP Campus)	2	DST SERB	₹ 19.20	₹ 6.45
3. Mechanism of ATP Secretion & role of ATP-activated P2 receptors in the Microglial Inflammatory response: implications for Multiple sclerosis	3	DBT	₹ 53.72	₹ 12.43
4. Bio-Informatics Facility	3 (Project extended)	DBT	₹ 16.32	₹ 6.88
5. Surface Plasmon-Coupled Emission based Compact Diagnostic Devices (Benchtop & Hand-held) for Cardiac Troponin T Quantification	3	DST	₹ 45.68	₹ 26.33
6. Regiospecific functionalization of anisotropic nanoparticles and Implications towards generation of plasmonic metal nanoclusters	5	DST INSPIRE	₹ 35	₹ 15.73
7. Research Collaboration between OMIX & SSSIHL*	1	OMIX	₹ 2.75 per annum	₹ 2.06
8. 'ANIRVID'- A Cellphone based Point of Care Diagnostic Device (for Dopamine and Serotonin) to Evaluate the Effect of Alternative Therapeutic Interventions on Depressions and Heart Ailments*	3	TATA Trust	₹ 97	₹ 50.25

9. Development of Automated microfluidic -Surface Plasmon Coupled Emission Chip towards Real Time Protein & DNA detection	9 months	Centre for Advanced Sensor Technology, University of Maryland Baltimore County	₹ 10	₹ 6.40
10. Design and Development of Small Organ Imaging Gamma Camera System	2	DST	₹ 90.67	₹ 3.73
11. Augmenting Postgraduate Teaching & Research Facilities in Dept. of Biosciences	3	DST-FIST	₹ 88	₹ 10
12. Mechanism of ATP secretion and the role of ATP-activated P2 receptors in the Microglial Inflammatory response: implications for Multiple sclerosis	1	DBTD	₹ 59.62	₹ 35
13. Big Data Analytics and High Performance Computing*	5	Maestro Technology, USA	₹18 per annum	₹18.00
Minor Projects	0			0
Interdisciplinary Projects				
Industry sponsored*	5	OMIX, Tata Trust, Maestro Technology	₹117.75	₹70.31
Projects sponsored by the University/ College	1	Autologous Chondrocyte Implantation	₹3.042	₹3.042
Students research projects- - Lean Six Sigma Interventions* (other than compulsory by the University)	6 months	SSSIHL	--	--
Any other(Specify)				
Total		15	559	207.46

PS: For more details see the **Annexure-V**

* Lean Six Sigma interventions carried out for the sister organizations of SSSIHL solely by students of MBA which are then certified by Lean Six Sigma black belt professionals. These are carried out in the odd semester i.e. between June- October every year. There are generally 6-7 such projects every year. These interventions improve the methodology to eliminate problems and inefficiencies to provide a better response to the consumer's needs.

3.7 No. of books published i) With ISBN No. Chapters in Edited Books

ii) Without ISBN No.

3.8 No. of University Departments receiving funds from

UGC-SAP CAS DST-FIST
DPE DBT Scheme/funds

3.9 For colleges

Autonomy CPE DBT Star Scheme
INSPIRE CE Any Other (specify)

Not applicable

3.10 Revenue generated through consultancy

The outcomes of any innovation is made available for all those who can benefit from them, without any charge. As a matter of policy, the innovations are conceived as contributions of knowledge for the benefit of the society. The Institute provides education at all levels and in all disciplines TOTALLY FREE OF COST. The innovations are focused on the regional and socio-economic needs in the neighbourhood areas of the Campuses and also on the needs of the state(s). They are not pursued with the objective of commercial exploitation.

3.11 No. of conferences organized by the Institution

Level	International	National	State	University	College
Number	18	-	-	-	--
Sponsoring agencies	SSSIHL	-	-	-	--

3.12 No. of faculty served as experts, chairpersons or resource persons - 10

3.13 No. of collaborations International National Any other

PS: Refer to answer given under point no.2.15 in page no.12 (Part – A)

3.14 No. of linkages created during this year

3.15 Total budget for research for current year in lakhs:

From Funding agency From Management of University/College
Total

3.16 No. of patents awarded this year

Type of Patent		Number
National	Applied	1
	Granted	1
International	Applied	0
	Granted	0
Commercialised	Applied	0
	Granted	0

3.17 No. of research awards/ recognitions received by faculty and research fellows of the institute in the year 2017-18

Total	International	National	State	University	Dist	College
9	1	8	-	-	NA	NA

3.18 No. of faculty from the Institution who are Ph. D. Guides and students registered under them

42

69

3.19 No. of Ph.D. awarded by faculty from the Institution

10

3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

JRF 26

SRF -

Project Fellows 12

Any other* 31

* SSSIHL

3.21 No. of students Participated in NSS events:

** The NCC aims at developing character, comradeship, discipline, secular outlook, the spirit of adventure and ideals of selfless service amongst young citizens.
Source: <http://nccindia.nic.in/en/node/141>

National Service Scheme (NSS) was introduced in 1969 with the primary objective of developing the personality and character of the student youth through voluntary community service. 'Education through Service' is the purpose of the NSS. Jul 23, 2018.

The sole aim of the NSS is to provide hands on experience to young students in delivering community service. Source: <https://nss.gov.in/>

In line with this overarching objective, the Sri Sathya Sai System of Integral Education that has been developed and is being followed at this institute has a packed schedule that includes academics and participation in various curricular and co-curricular activities throughout the year that include Sports and Games, participation in cultural activities (music, dramatics, etc.), Social Service (Grama seva) etc. The institute aims at producing students who are academically sound, socially responsible and spiritually aware. The way of life at this institute holistically provides the necessary foundations to produce good citizens.

University level	<input type="text"/>	State level	<input type="text"/>
National level	<input type="text"/>	International level	<input type="text"/>

3.22 No. of students participated in NCC events:

University level	<input type="text"/>	State level	<input type="text"/>
National level	<input type="text"/>	International level	<input type="text"/>

3.23 No. of Awards won in NSS:

University level	<input type="text"/>	State level	<input type="text"/>
National level	<input type="text"/>	International level	<input type="text"/>

3.24 No. of Awards won in NCC:

University level	<input type="text"/>	State level	<input type="text"/>
National level	<input type="text"/>	International level	<input type="text"/>

3.25 No. of Extension activities organized

University forum *	<input type="text" value="1"/>	College forum**	<input type="text" value="4"/>
NCC	<input type="text"/>	NSS	<input type="text"/>
		Any other	<input type="text"/>

* Final year students serving in sister organizations of the institute

** Every campus conducts their own extension activities like cleaning up of river, service in the leper colony, poor feeding, village adoption programmes etc.

3.26. Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility

- Development of Small Organ Imaging Gamma Camera System for early diagnosis and treatment of Thyroid diseases which effects nearly 40 million people in India alone. The department of Physics has developed a prototype of Small Area Imaging Gamma Camera (SAI-GC) for this purpose.
- Department of Mathematics & Computer Science are trying to apply the Artificial Learning (AI) and Blockchain together to many real-life problems like effective treatment of Perinatal depression, Automatic segmentation, detection of stones in case of Renal CT images, detection of cardiac disorders in CT images etc.
- Synthesis and semi-synthesis of novel molecules with potential applications which have potent anti-cancer activity and also other wide ranging biological activities like antidiabetic, anti-inflammatory etc.

- The researchers of department of Chemistry are engaged in design and development of Surface Plasmon-Coupled emission based Bench-Top device for Troponin measurement for cardiac damage assessment in rural India and emergency conditions.
- The research efforts for detection of antimicrobial resistant genes in bacterial cultures in Indian subcontinent. This will help reduce the increased morbidity and mortality affecting the vulnerable patients with decreased immunity due to drug resistant bacteria.
- The department of Biosciences is trying to reduce the lag period of the drugs for human Multiple Sclerosis trials. This will be helpful in diseases like Parkinsons, Retinal degeneration and Alzheimer's disease.
- Developing the concept and practice of 'Inclusive Business' for Poverty Alleviation through the study of select organizations in India.

Criterion – 4

4. Infrastructure and Learning Resources

4.1 Details of increase in infrastructure facilities:

Facilities	Existing	Newly created	Source of Fund	Total
Campus area	147 acres*		Sri Sathya Sai Central Trust	147
Class rooms	178**	--		178
Laboratories	35			35
Seminar Halls	5			5
No. of important equipments purchased (\geq 1 lakh) during the current year.	See Annexure-VI	8	UGC and SSSIHL	
Value of the equipment purchased during the year (Rs. in Lakhs)	₹ 4272 Lakhs (2016-17)	₹ 1135 Lakhs		₹ 5407 Lakhs
Others (CRIF) \$\$	₹ 750 Lakhs (2016-17)	₹ 950 Lakhs		₹ 1700 Lakhs

\$\$ Building and infrastructure facilities for 'Central Research Instruments Facility' (CRIF) has been established.

* **Total Area:** The Sri Sathya Sai Institute of Higher Learning (Deemed to be University) comprises four Campuses viz.,

- 1) Prasanthi Nilayam Campus for men at Prasanthi Nilayam, Anantapur District, Andhra Pradesh
- 2) Anantapur Campus for women at Anantapur, Anantapur District, Andhra Pradesh
- 3) Brindavan Campus for men at Kadugodi, Whitefield, Bangalore, Karnataka and
- 4) Muddenahalli Campus for men at Muddenahalli, Chickballapur district, Karnataka

[Total area in acres]

- 1) Prasanthi Nilayam Campus for men = 20.53 acres

(Academic area=5.20 acres + Playground=7.71 acres + Planetarium=2.13 acres + Stadium=5.49 acres)

- 2) Anantapur Campus for women = 82.6 acres
- 3) Brindavan Campus for men = 35.55 acres
- 4) Muddenahalli Campus for men at Muddenahalli, Chickballapur district, Karnataka (in 8.10 acres)

Total Constructed area: [In sq.m.]

- 1) Prasanthi Nilayam Campus for men = 56,217.38 sq.mts.
(Main building= 44,638 sq.mts. + Humanities building=1,744 sq.mts. + Annexe = 4,088 sq.mts. + Central Library = 5,018 sq.mts. + Planetarium = 729.381 sq.mts.)
The Central Research Instruments Facility (CRIF) is a new and modern Advanced Research Centre [43,000 sq. ft. (4000 m2)] at the Prasanthi Nilayam Campus.
- 2) Anantapur Campus for women = 20,018 sq.m. (3 buildings)
- 3) Brindavan Campus for men = 29,874 sq.m. (2 buildings)
- 4) Muddenahalli Campus for men = 4979.60 sq.m. in 8.10 acres

University Administrative building = 4025 sq.m. in 2.25 acres

**** No. of Classrooms**

- 1) Prasanthi Nilayam Campus = 42
- 2) Anantapur Campus = 40
- 3) Brindavan Campus = 31
- 4) Muddenahalli Campus = 14

Most of the classrooms are well equipped with DLP Projectors, projector screens, White boards, PC on Stick facility. In addition to this, the campuses have latest multimedia learning centers and language labs.

4.2 Computerization of administration and library

University Management System (UMS) has been initiated in the year 2011-12. Admissions have been totally computerized. Examination module and other modules such as Accounting and Finance, Hostel maintenance, administration, Back-office, etc., are being developed. Admissions module is fully functional.

Note: E-journals- The Central Library of the University is fully networked with INFLIBNET/INFONET with VSAT connectivity with extension of network to other departments initially by the UGC. The UGC INFONET - WAN networks all the universities in India. EBSCO & Scifinder: The new addition of EBSCO collection and databases and Science finder are also available in the University. The SSSIHL users can access the databases of Web of Sciences, Science Direct, J-CCC, J-STORE, Oxford University Press, Cambridge University Press and PRO-QUEST through INFLIBNET.

All these Journals are available to all the students and staff over our University campus network. These Journals cover various teaching and research disciplines actively pursued by the departments.

4.3 Library services:

2017-18	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
		(₹ in lakhs)		(₹ in lakhs)		(₹ in lakhs)
Text Books	171080	₹ 839.38	1189	₹ 6.36	172269	₹ 844.1
Reference Books	6835	₹ 37.23	24	₹ 1	6859	₹ 37.42
e-Books	-	-	-	-	-	-
Journals	177	₹ 2.2	4	₹ 0.03	180	₹ 2.27
e-Journals*						
Digital Database	EBSCO- 8500	₹ 20.42				
	SCOPUS- 8500 in 50 different languages					
CD & Video	3228	0	0	0	3228	0
Others (specify)						

Note: * E-journals- The Central Library of the institute is fully networked with INFLIBNET/INFONET with VSAT connectivity with extension of network to other departments initially by the UGC. The UGC INFONET - WAN networks all the universities in India. The SSSIHL users can access the databases of Web of Sciences, Science Direct, J-CCC, J-STORE, Oxford University Press, Cambridge University Press and PRO-QUEST through INFLIBNET.

All these Journals are available to all the students and staff over our institute campus network. These Journals cover various teaching and research disciplines actively pursued by the departments.

4.4 Technology up gradation (overall)

	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Departments	Others
Existing	1112	Labs = 14	All the computers in the institute have internet browsing facility		Computer Centres = 4	44	440	106
Added	26	Students computers = 548						
Total	1138							

4.5 Computer, Internet access, training to teachers and students and any other programme for technology upgradation (Networking, e-Governance etc.)

The University has provided Laptops for all the Research Scholars, and PCs for teachers. The University has established Multimedia Learning Centre and English Language Labs at Prasanthi Nilayam, Anantapur and Brindavan Campuses to cater to the needs of video-conferencing. The University is in the process of establishing Multimedia Learning Centre and English Language Lab at Muddenahalli Campus too. All the Campuses are centrally provided with the Computer Centres. The student -computer ratio is **2.4 : 1 (1330: 548)**.

E-journals- EBSCO & Scifinder: The Central Library of the University is fully networked with INFLIBNET/INFONET with broadband VSAT connectivity with extension of network to other departments initially by the UGC. The UGC INFONET - WAN networks all the universities in India. More importantly, it offers a consortia subscription to the online content of many important periodicals relevant to the research community. The package includes access to a bouquet of around 10,000 journals covering all disciplines.

We have a well-established Computer Centres at the Prasanthi Nilayam Campus which are fully networked. The Central Library is also networked with INFLIBNET/INFONET with 1 Gbps NKN/NMEICT connectivity and the internet connectivity is 100Mbps.

This facility has been extended to other campuses as well by a dedicated 2 mbps connections to each of the offsite campuses. All the e-journals are available to all the students and staff over our university campus network.

4.6 Amount spent on **maintenance** in lakhs : (2017-18)

i) ICT	19.69
ii) Campus Infrastructure and facilities	35.48
iii) Equipments	20.16
iv) Others	19.34
Total :	94.67

Criterion – 5

5. Student Support and Progression

5.1 Contribution of IQAC in enhancing awareness about Student Support Services

- In tune with the philosophy of the Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba, high quality education is imparted TOTALLY FREE OF COST to all the students for all courses of study.
- In Sathya Sai Hostels, all students willingly undertake all the tasks to run the hostel and stay as one big family with one fourth of the teachers staying in the hostel. The students naturally pick up soft skills, get personal counselling from the teachers and get coaching and guidance on not only academic aspects but also aspects regarding life. All this facilitate a great amount of multi-skill-development. They also get coaching for games, music etc. in this unique self-reliance model.
- Rich pool of faculty visiting the institute helps the students in deciding their career path and guidance for competitive examinations.
- The senior and junior students live as one family, which facilitates cooperation and not competition among the students. The concept of ragging is unheard of in Sathya Sai Hostels.
- Grievance redressal mechanism exists. A student can approach his/her room teacher with his/her grievance. If the student is not satisfied, the student can approach the floor teacher, warden and the Campus Hostel Management Committee (CHMC) in that order for the redressal of his/her grievance. If still not satisfied the matter can be escalated to the Vice-Chancellor.
- The preceptorial system that ensures that each student has a teacher who is a mentor and helps the student develop a holistic personality. Mentors also review the progress of their mentees and make a collective and comprehensive review during the mentors' meetings.
- One of the significant teaching-innovations is "E-Guru" software package developed by a faculty and his project student, which enables the teachers to upload all the teaching material, quizzes, syllabus, session-wise schedule of each course, old question papers, standard formats for submission to examinations section, etc. This enhances the effectiveness of teaching-learning to a great extent.

5.2 Efforts made by the institution for tracking the progression

- Students appear for different competitive examinations and the results obtained are communicated to the university.
- The passed out students fill an online form every year circulated by the university, updating the institute about the details of their progression.
- Information of job placement is provided in a structured manner by the CATALYST team which facilitates placement of the passing out students.
- University has integrated courses in sciences where the student progresses directly into the respective master's degree by obtaining a minimum CGPA.
- During their course of study, students are evaluated from time to time and wherever necessary, remedial classes, tutorial classes are conducted. Students are being encouraged to take up projects and dissertations in their final year of study so that it can help them to focus on a problem at hand and pursue research beneficial for the society.

5.3 (a) Total Number of students

UG	PG	Ph.D.
855	374	101

(b) No. of students outside the state
(out of 1330)

889

(c) No. of international students

6

	No	%
Men	-	-

Women

No	%
6	0.45%

Last Year (2016-17)						This Year (2017-18)					
General	SC	ST	OBC	Physically Challenged	Total	General	SC	ST	OBC	Physically Challenged	Total
344	18	18	91	-	471*	317	9	19	137	--	482*

* Newly enrolled

Demand ratio: 1 of 5 admitted

Dropout %: 0.5% of new Admitted

5.4 Details of student support mechanism for coaching for competitive examinations (If any)

Students of post graduate programmes are given special coaching for taking different competitive examinations like UGC NET, JRF, Actuarial exams (IAI-India, IFoA-UK), GATE etc. Faculty members focus on the format and type of questions generally asked in these competitive examinations and are actively involved in helping the students in solving model question papers. The students are evaluated and mentored one on one on a weekly basis. The teachers keep in mind the special skill sets required to be successful in these examinations and impart the same to the students as part of the teaching learning process.

The under graduate students are given training for taking competitive examinations such as CAT and G-MAT.

No. of students beneficiaries

All PG students of the relevant departments are given coaching for competitive examinations and the interested students take the examinations. (51 out of 63)

5.5 No. of students qualified in these examinations

NET	8	SET/SLET	-	GATE	23	CAT	-
IAS/IPS etc	-	State PSC	-	UPSC	-	Others *	28

* UGC JRF, JEST, LS

5.6 Details of student counselling and career guidance

Students are given inputs about the different avenues available in their respective course of study from time to time throughout their period of study at the institute. Interaction with rich pool of visiting and guest faculty also broadens their perspective and gives them clarity about the career path to be chosen by them. Students are encouraged to take up projects in the 3rd year under graduation in their areas of interest which can lead to the student pursuing research or career in that field. Career guidance to final year PG students is given by alumni in a unique forum of CATALYST where tips for CV preparation, mock interviews, generating leads for the passing out students is done.

No. of students benefitted- All PG and final year UG students.

5.7 Details of campus placement *

<i>On campus</i>			<i>Off Campus</i>
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
21	95	80	12 **

* Remaining students of PG and UG are pursuing higher studies at SSSIHL and elsewhere (IISc, IIT, TIFR, etc.)

** The off-campus placements are also done by alumni referrals.

Our Placement Officer has close interaction with Business and Industry and, therefore, many organizations are aware of the institute's Philosophy, functioning, academic excellence and positive attitude of the students. They also know of the uniqueness of the Integral Education system of the institute, with its special emphasis on moulding the students into a wholesome and balanced personality, academically Sound and Spiritually Aware. Many organizations, who have employed our students and observed their competence and sense of commitment to basic values, seek our graduates repeatedly. Most of these graduates are occupying good and rewarding positions in India and abroad and many of them have progressed to very senior levels.

The alumni of the institute play an important role in helping graduating students find suitable employment opportunities in their chosen vocation.

They achieve this through an outreach programme called CATALYST (Corporate Aptitude Training – an **Arena to Leverage Your Skills and Talents**) where graduating students are coached in preparing résumés, the application process, interview techniques, networking and the like. The programme has been very successful.

5.8 Details of gender sensitization programmes- Gender related problems never occur in this institute as the campuses for men and women are different with dedicated men and women staff respectively. Revered Found Chancellor, Bhagawan Sri Sathya Sai Baba has said, “Women should never be slighted or treated with disrespect. Wherever women are honoured, there is prosperity and happiness.”

In **Awareness courses**, the inputs relating to gender sensitivity are also provided. Students both men and women are exposed to the discourses of the Revered Founder Chancellor, Bhagawan Sri

Sathya Sai Baba, who had many times spoken at length about the exalted status given to women in Indian Culture. This makes a very deep impression on the young minds of the students.

5.9 Students Activities

5.9.1 No. of students participated in Sports, Games and other events

State/ University level* National level International level

No. of students participated in cultural events

State/ University level* National level International level

*All students participate in the institute Annual Sports and Cultural Meet.

Note: The Sri Sathya Sai System of Integral Education that has been developed and is being followed at this institute has a packed schedule that includes academics and participation in various curricular and co-curricular activities throughout the year that include Sports and Games, participation in cultural activities (music, dramatics, etc.), Social Service (Grama seva) etc. The institute aims at producing students who are academically sound, socially responsible and spiritually aware. The way of life at this institute leaves little time available for students to participate in external activities and holistically provides the necessary foundations to produce good citizens.

Participation in sports, cultural and literary activities is mandatory for all students at all campuses and is indeed an integral part of the learning process. This is remarkably demonstrated by the Annual Sports and Cultural Meet which climaxes from 11th to 15th January every year with athletic and sports competitions and by the high quality of dramas and musical programmes presented to thousands of visitors in the Sai Kulwant Hall. It may be reiterated that this kind of participation of students in sports, cultural and other activities is rather rare even in the best of our universities.

The infrastructural and other facilities needed for sports and cultural activities available to students and faculty at the SSSIHL are exceptionally good. These include a world class indoor stadium, tennis courts, a well-maintained hill view open stadium including a cricket ground, an excellent gymnasium along with well-equipped sports facilities in each campus.

5.9.2 No. of medals /awards won by students in Sports, Games and other events

Sports: State/ University level National level International level

Cultural: State/ University level National level International level

5.10 Scholarships and Financial Support	Number of students	Amount
Financial support from institution	1330	33.65 crores p.a.
Financial support from government	0	0
Financial support from other sources	4	₹6.04 lakhs
Number of students who received International/ National recognitions		

* Education is provided TOTALLY FREE OF COST to all the students of the institute in tune with the philosophy of Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba

5.11 Student organised / initiatives- Nil

Fairs : State/ University level National level International level

Exhibition: State/ University level National level International level

* **Annual Sports and Cultural Meet** is held every year which is held in the Sri Sathya Sai Hill view stadium and in the Sai Kulwant Hall. It is witnessed by thousands which includes school children of many schools who specially come to witness this spectacle.

Exhibition as part of National Science Day was conducted on Feb 28th 2018 having the theme “Scientific issues for the development of the Nation” with the objective to ignite young minds, in service of the country.

5.12 No. of social initiatives undertaken by the students

- Final year students of all campuses do service in different sister organizations of the institute for a period of 10 days at the end of each academic year. This includes serving in hospitals, canteens, maintenance, cleanliness and upkeep of the Prasanthi Nilayam Township etc.
- The Anantapur Campus faculty of the departments of Bioscience and Food and Nutritional Sciences visit the neighbouring areas to advice the residents about health and cultivation. This enhances the development of appropriate fruit and vegetable preservation technologies for providing avenues for self-employment to rural women. They also taught the newer packaging technologies for rural level product developments (2007 onwards)
- Adoption of a lepers colony of 25 families near the town of Anantapur for the last twenty five years where the students render service once in a month taking care of various dimensions of health and hygiene, education, social issues and self-sufficiency etc.
- Students under the able guidance of the teachers, participate regularly in ‘Village Integrated Programmes’ and take up service activities namely providing smokeless *chulhas*, solar bottle bulbs, painting the school and houses, enacting street plays on social and health issues, sanitation etc.
- Students of all the campuses periodically take up tree plantation initiatives in and around their campus areas.
- Students and staff of the institute are regular donors of blood to the blood banks of the two Super Speciality Hospitals in Prasanthi Nilayam and Bangalore.

The following activities are being undertaken by the alumni under the aegis of Sri Sathya Sai Institute of Higher Learning-

- Regular medical camps are conducted all over the globe where treatment and medicines are given totally free of cost. Narayan Seva- mass feeding is also a part of these camps.
- Establishing and running of 2 children’s homes and 3 schools in different parts of the country imparting value education free of cost to underprivileged children.
- Distribution of blankets and warm clothing to the less fortunate in major cities all over the country every year, at the onset of winter.

5.13 Major grievances of students (if any) redressed: No issues raised.

Criterion – 6

6. Governance, Leadership and Management

6.1 State the Vision and Mission of the institution

THE VISION

To assist generations of students acquire Self-knowledge (*Atma Vidya*) and Self-confidence (*Atma Vishwas*), so as to cultivate Self-sacrifice and earn Self-realisation; thereby moulding them into leaders who will benefit society.

THE MISSION

To mould well-rounded holistic individuals – professionally sound, socially responsible and spiritually aware – who embody noble values and a right attitude, through Educare (*Integral Education based on Human Values*) that caters to the physical, intellectual, emotional, psychological and spiritual dimensions of the human personality.

THE UNDERLYING PHILOSOPHY

The Sai educational institutions have been established not merely to enable students to earn a living but to make them acquire good traits, lead ideal lives, and give them ethical, moral and spiritual strength. I have established them with a view to inculcate love and teach good qualities to students. They will learn here humility, discipline and faith.

I have established these institutions to impart spiritual education as a main component and worldly education as a secondary one. Education should enable one to cultivate good qualities, character and devotion. The teaching of the institute curricula is only the means employed for the end, namely, spiritual uplift, self-discovery and social service through love and detachment.

This will be a Gurukula - a place where teachers and taught will grow together in love and wisdom - and like the ancient system of education, it will develop in its students a broad outlook and promote virtues and morals, which serve to foster noble ideals in society.

This Institute will be a temple of learning where youth are shaped into self-reliant, contented and enterprising heroes of action and self-sacrifice, for the purpose of serving humanity.

Sri Sathya Sai Baba
Revered Founder Chancellor

THE CORE PURPOSE OF THE UNIVERSITY IS:

- To impart true, ideal education, and mould students as ideal citizens wedded to the service of society.
- To provide the youth with an education which, while cultivating their intelligence, will also purify their impulses and emotions and equip them with the physical and mental disciplines needed for drawing upon the springs of calmness and joy that lie in their own hearts.
- To help students to cultivate self-knowledge and self-confidence, so that each one can learn self-sacrifice and earn self-realisation.
- To blossom students as true representatives of Bharatiya Samskriti, spreading tolerance, charity and brotherhood throughout the World.
- To equip students for the role of future leaders of India, as persons of integrity and character, as embodiments of truth, justice (righteousness), peace and love; and to confer on them the courage to stand up against injustice, indiscipline, immorality and falsehood.

Elaborating the purpose and philosophy of the University, the Revered Founder Chancellor says, *“This Institute has not been established just to prepare you for earning degrees...Teaching you the University curricula, preparing you for the institute examinations, and awarding you institute degrees – these are only means employed for the end, namely – spiritual uplift, Self-discovery and social service through love and detachment. Our objective is to provide the youth with an education, which while cultivating their intelligence will also purify their impulses and emotions, and equip them with the physical and mental disciplines needed for drawing upon the springs of calmness and joy that lie within their own hearts. Our hope is that by their lives, they will be shining examples of spiritual awareness and its beneficial consequences to the individual and society.”*

6.2 Does the Institution have a Management Information System.

Yes. The University has implemented a computer based University-wide Management System (UMS) that include modules for managing the Examination Section, Admissions, University Administration, Hostel etc. Moreover, the finance section has Management Information System which facilitates all kinds of information in a very structured manner for meetings of Board of Management, Finance committee, Trust Meetings and such other related administrative matters. Moreover, the finance section works on Tally for accounting, Saral Paypack for payroll and TDSMan for online TDS filing. This facilitates all kinds of information in a very structured manner for meetings of Board of Management, Finance committee, Trust Meetings and such other related administrative matters.

6.3 Quality improvement strategies adopted by the institution for each of the following:

6.3.1 Curriculum Development

To supplement the conventional classroom chalk-talk method, the following avenues are created by the University for Effective learning of the subject by the students.

- a) Open ended / outcome based projects for students to extend and reinforce understanding of the concepts and translate them into possible profitable devices.
- b) Dissertation/Project Work is compulsory for all the postgraduate/professional courses in their final year curriculum. This trains the students to develop the capacity to analyze large amounts of data and draw conclusions. It also cultivates the ability to clearly define a research problem and choose an appropriate research methodology to meet the intended objectives.
- c) Industrial tours/corporate visits are organized in all the professional programmes to complement and corroborate classroom teachings. These are usually organized at the end of the first year during the summer holidays. The objective of the industry visit is to enable the student to see the relevance of the concepts studied and expose them to different/emerging technologies. These visits also give them opportunities to interact with technical experts and carry out their final year projects in the areas of current interest to the Industry. It also builds a bridge between academia and industry.
- d) Each department organizes at least one or two seminars/workshops per year and International Seminar/Workshops periodically in focused Thrust areas of Research. These facilitate the exposure of students to the current research/market trends and equip the students to face the real challenges in the World after they complete Undergraduate and Postgraduate studies.
- e) Internal workshops, special guest lectures are also organized by various departments periodically to make students appreciate industry's perspective to learning.
- f) The final year professional programmes students are allowed to attend and present high quality research papers in national and international conferences organized by other institutions. (Number of M.Tech. students have attended and presented papers and demonstrations in various Conferences.)
- g) Students are also encouraged to write articles and publish based on the Research Work they undertake as part of their course curriculum or otherwise.

6.3.2 Teaching and Learning

- Open ended experiments at both UG and PG levels (Physics) to enthuse students to come out with new ideas.
- In MBA, the course of “Entrepreneurship & Innovation” the students work on a business idea which has Social Impact & Commercial Value. The Alumni Entrepreneurs do the mentoring and help the students to understand & apply the practical nuances of businesses.

- Students are encouraged to take up mini projects as part of the Lab courses.
- Participative learning by students through departmental colloquium sessions
- Problem solving sessions and surprise tests are conducted regularly to induce constant touch of the students with the course materials.
- Lean six sigma interventions are conducted by the students of MBA for solving the problems encountered by the different sister organizations to improve their efficiency and productivity. The students are then certified by a six sigma professional.
- Tutorial Classes are given for every subject to enhance problem solving skills.
- Technology assisted Learning - Access to e-content: repository of video lectures, animated videos on concepts, e-books, white papers, old question papers, etc. which students are permitted to access in their free time.
- As a part of the institute's initiative to improve and maintain teaching quality, the SSSIHL regularly conducts a formal and structured Online Teaching Quality Feedback Student Feedback mechanism at the end of every semester. The same is communicated to individual teachers for their self-introspection and development.

6.3.3 Examination and Evaluation

The whole admissions test process is conducted through University Management System (UMS) package. UMS is a well-protected and composite software package initiated by the University.

Examination has Continuous Internal Evaluation (CIE) and End semester examination as its components. The CIE comprises assignments, seminars, quiz tests and students participation in class in addition to periodic tests. Some departments using the e-guru platform, administer online test to the students. The evaluation tests are conducted with clockwork precision and the final semester results are declared within a couple of months. All the documents and files related Examination Section are stored in a NAS storage device to ensure strict confidentiality and timely creation of snapshots and backups for retrieval in case of data loss.

Examination Committee monitors and advises administration regarding performance of students and identify weakness if any. The exams pass-rate for the year 2017-18 for Undergraduate and Postgraduate Programmes are 94% and 96% respectively. The examination and evaluations for Ph.D. Programmes are based on minimum standards specified in the UGC's standards for PhD Programmes.

Electronic Document Dispatch & Receipt System (EDDRS) has been implemented for dispatch and receipt of examination related information in an online format. This in conjunction with Question Paper Scrutiny Board (QPSB) which is already in place makes the paper setting process a very smooth and streamlined one.

6.3.4 Research and Development

Sri Sathya Sai Institute of Higher Learning (SSSIHL) has identified thrust areas of research around which several research projects and studies are designed, cutting across traditional subject boundaries.

The research activities of faculty and students at SSSIHL envision exploration and promotion of socially relevant, rural-friendly, translational research encompassing three domains - Health, Environment and Energy, as elucidated below. This section details the research objectives, relating to aforementioned thrust areas, their outcomes and applications related to these three areas, along with the state-of-the-art infrastructural facilities that have been established to accomplish the well designed objectives encompassing the thrust areas.

SSSIHL Central Research Instruments Facility (CRIF) has been created with the objective of providing the latest and advanced characterization/analytical tools to carry out translational research in various areas of Science and Technology. These in essence, include physical, biological, chemical, materials science, food and also computational and interdisciplinary areas. SSSIHL CRIF also houses a complement of specialized research facilities housing several sophisticated state-of-the-art instruments in the areas of disease biology and plasmonics.

This would enable our researchers to keep pace with the scientific developments taking place globally; and to publish their research findings in peer reviewed high impact journals; and through their concerted efforts to carry out research in cutting edge areas of Science and Technology and contribute to the needs of the society at large.

This facility would be used extensively by postgraduate and doctoral students as well as by faculty members across all the campuses of SSSIHL. Full-time technical assistants with specific expertise operate and maintain the instruments. The facility is further supported through a constituted body of dynamic faculty members as instruments in-charge and full-time Research Associates assist in meeting the intended research objectives at the Centre.

The core facilities are shared resources offering a range of services to the research community at SSSIHL. Indeed, these will further strengthen, expand inter and intra-university research collaborative capabilities of our faculty.

Internal Quality Assurance Cell, Research Advisory Board, departmental Research Committee and Research Conferment Cell provides valuable inputs to the research faculty and students.

- Teachers are also encouraged by the Institute to attend the International / National Conference, Seminars, Workshops and training Programmes organized by various Universities/Institutions for enhancing their knowledge in Research and Teaching.
- Regular Seminars, Workshops are organized by each department in their chosen contemporary areas of interest. An interdepartmental Science Colloquium is conducted once in a fortnight. The colloquium provides an opportunity for doctoral research scholars and the teaching faculty to share their research experiences, insights and observations with fellow researchers.

- Visiting Scientists, Educationists and Executives from Industry visit the University regularly, interact with faculty members, and research scholars thereby, making them aware of recent developments in their respective subject areas.
- As stated above, Research at the institute continues to touch greater milestones without sacrificing the focus on **societal benefit**.
- The research highlights at SSSIHL for the Academic Year 2017/18 are presented below:

BIG DATA ANALYTICS AND HIGH PERFORMANCE COMPUTING

- The Department of Mathematics & Computer Science are working on DNA sequence Analysis and Structural Biology using High Performance Computing (HPC) and Machine Learning (ML) tools. They also envisage providing a framework for compressed storage, analysis and secured sharing of genome sequence. They are working to build an immutable data storage and management platform in Big Data environment using Scalable Block chain. Study on issues of Interoperability of Block chain is opening up ways to develop platform for Fraud Free financial transactions, Comprehensive Health Insurance Management systems, E-voting platform etc. The researchers intend to use HPC technology to detect fake news and rumours using epidemic models and large graphs. Efforts are on to demonstrate that Artificial Learning (AI) and Block chain together can provide solutions to many real-life problems and finally deliver the promise that AI holds. Work on predictive analytics in healthcare, such as effective treatment for Perinatal depression, Automatic segmentation and detection of stones in case of Renal CT images, early detection of cardiac disorders from CT images is also underway.

DEVELOPMENT OF SMALL ORGAN IMAGING GAMMA CAMERA SYSTEM

- Thyroid diseases are among the commonest endocrine disorders worldwide and in India. It is estimated that 42 million people in India suffer from thyroid diseases. Early diagnosis and treatment remain the cornerstone of medical management. Development of portable thyroid specific imaging system which serves as a cheaper alternative to the traditional large field and expensive gamma cameras is being pursued at the Department of Physics. The spatial resolution is expected to be better than the traditional Gamma Cameras. The Department of Physics has developed a prototype of Small Area Imaging Gamma Camera (SAI-GC), with all digital Front End Electronics and Data Acquisition System. Relevant software is being developed for Image Reconstruction and Processing of gamma camera images to detect the cases of abnormalities like hyper and hypothyroidism.

RESEARCH BASED REFORMS IN PHYSICS INSTRUCTION - CLASSROOM AND LABORATORY

- One of ways of improving the quality of Physics Education is through research-based methodologies involving concept inventories, active learning, clicker methods, Interactive Lecture Demonstrations, Computer Simulations & Virtual Experiments and Context rich problems. The faculty members involved in undergraduate teaching are involved in the design and development of courses based on physics educational research practices in which efficacy of research-based physics learning strategies are tested and implemented in classroom with active participation of learners. This is sponsored by the Government of Karnataka under the scheme of establishment of centers of Innovative Science Education (CISE) through VGST, DST, Karnataka.

SYNTHESIS AND SEMI-SYNTHESIS OF NOVEL MOLECULES WITH POTENTIAL THERAPEUTIC APPLICATIONS

Spirobibenzopyrans and andrographolide have been identified by the Department of Chemistry as novel synthetic and semi-synthetic pharmacophores respectively. In the due course of research, the department has discovered a new class of spirobibenzopyrans with potent anti-cancer activity. A library of over 40 novel spirobibenzopyrans have been synthesized and studied for their therapeutic applications. Andrographolide is known to possess a wide range of biological activities such as anticancer, antidiabetic and anti-inflammatory properties. Currently, isolation of the active compound andrographolide from *Andrographis paniculata* and further synthesis of derivatives as potential leads against various diseases is under progress.

The clear objective of the research is to provide new compounds having potent biological activities such as: anti-cancer, anti-inflammatory and anti-bacterial properties with lesser side-effects, which therefore has high social relevance in tackling major health problems in our country.

DEFLUORIDATION OF WATER BY POLYMER-METAL ION NANO-COMPOSITES: SYNTHESIS, CHARACTERIZATION AND THEIR APPLICATION STUDIES

Fluoride has a tendency to disperse into ground water from the rocks and soil. The excess amount (≥ 1.5 mg/L) of fluoride intake leads to fluorosis, collagen break down and disruption of immune system. The Geographical Information System (GIS) aided assessments of the ground water of the Rayalseema region of Andhra Pradesh, India revealed that more than 70% of the villages surpass maximum limit of fluoride (1.5 mg/L) defined as per World Health Organization (WHO) and Bureau of Indian Standards (BIS).

Therefore, the development of cheaper, robust, eco-friendly, and easy to use materials for defluoridation of drinking water would be the best assist to extenuate this 'fluorosis menace'. The Department of Chemistry is actively engaged in the synthesis of potential adsorbents based on polymer metal nanocomposites for effective removal of fluoride from ground water.

SURFACE PLASMON-COUPLED EMISSION BASED BENCH-TOP DEVICE FOR CARDIAC TROPONIN T QUANTIFICATION

Troponin T (cTnT) measurement is important for ruling in or ruling out heart attacks and evaluation of patients with acute coronary syndromes. With the inclusion of high-sensitivity cTnT (hs-cTnT) assays, an early and more frequent diagnosis of AMI has been made possible. However, there is an increased need for individualized care in patients with heart disease, especially in resource limited settings. Ironically, the reliability, sensitivity and rapid diagnostics of current cTnT detection platforms come with the need for sophisticated instrumentation due to the non-specificity of the existent low-cost methods and increasing health care expenditure.

The researchers at the Department of Chemistry are engaged in the design and development of SPCE based bench-top device for cTnT quantification resulting in near real-time cardiac damage assessment, and clinical decision making, in rural India and emergency conditions.

The current capital-intensive technology that's in use towards quantification of cardiac Troponin T, restricts its reach to a large segment of the Indian population. A low-cost affordable technology would help widen the impact and also to render timely treatment during first Aid and emergency conditions.

DETECTION OF ANTIMICROBIAL RESISTANCE GENES IN BACTERIAL CULTURES AND CLINICAL ISOLATES

Drug resistant bacteria have been the major causes of increased morbidity and mortality affecting the vulnerable patients with decreased immunity. They are also one of the major causes of nosocomial infections in India. Antimicrobial resistance is a major clinical challenge in treating patients infected with antibiotic resistant bacteria. Hence, understanding the mechanisms of antibiotic resistance among clinically isolated bacterial pathogens may help in developing appropriate intervention strategies to tackle this global menace.

The researchers at the department of Biosciences intend to gain insights into the mechanisms of antibiotic resistance being employed by the pathogens and their capacity for horizontal gene transfer using whole genome sequencing. Scant information is available on WGS based genomic analyses of clinical isolates from India.

The proposed research efforts could offer good insights into the prevalence of the antibiotic resistance genes (AMR genes) in the Indian subcontinent. Our laboratory is involved in the characterization of (AMR genes) using a range of molecular tools among the isolated nitrofurantoin resistant cultures.

RECEPTORS IN THE MICROGLIAL INFLAMMATORY RESPONSE: IMPLICATIONS FOR MULTIPLE SCLEROSIS

The researchers at the Dept of Bioscience are trying to understand whether secreted ATP has a role in the LPS and cytokine (TNF α and IFN γ) induced calcium response, expression of critical genes in inflammation, and activation of phagocytosis and chemotaxis. This will help to understand the role of P2 receptors and downstream signalling events involved in the processes. It will also help us to delve into the details of the role of P2 receptors in a mouse model of MS and help identify possible therapeutic targets. It may be noted that some P2 receptor inhibitors are currently used as drugs, such as for thrombosis. Some are in phase II and phase III clinical trials for various cancers. The research work will validate these drugs for mouse model of MS (Multiple Sclerosis).

This work proposes to reduce the lag period of these drugs for human MS trials. It will have considerable impact on understanding and identifying possible therapeutic targets in other neuro-degenerative diseases. Many genes that are induced by exogenous treatment of ATP (Hsp90 and HDACs) are known therapeutic targets in various diseases and hence inhibiting up-regulation of these genes by targeting purinergic receptors will have a favourable therapeutic effect. These diseases include Parkinsons, retinal degeneration and Alzheimer disease.

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6.3.5 Library, ICT and physical infrastructure / instrumentation

- All the faculty have access to computers and are encouraged to explore various knowledge data bases. The University has 1Gbps Internet connectivity under the aegis of the National Knowledge Network (NKN), for academic and research pursuits of staff and students. All the campuses of the University are interconnected via 2Mbps leased lines. The University is part of INFONET, E-Journal Consortium. We therefore get access through INFLIBNET to nearly 10,000 online Journals in various disciplines, from fifteen International Publishers. All these Journals are available to all the students and staff over our University campus network. These Journals cover various teaching and research disciplines pursued by the department.
- Students have access to online course material in the browsing centers of the institute where they can pick up skills from the tutorials of renowned faculty and information about the latest trends in their fields of study.
- The Library every year procures latest books pertaining to the different fields of study based on the recommendation of the respective HoDs. This includes latest editions
- The finance section works on Tally for accounting, Saral Paypack for payroll and TDSMan for online TDS filing
- Teaching aids do facilitate effective teaching as well as learning, and all the required facilities like LCD projectors, OHPs, Magnetic White Boards, Smart Class rooms etc are available. They enhance the quality of teaching and aid the students to grasp the lessons and concepts thoroughly. Multimedia learning centres and language labs are also available for the students to pick up the necessary skills.
- Library in the hard and electronic form is used extensively by teachers as well as students. **Library books Purchase Committee** decides the quality and need for purchasing books and journals. The central administration decides based on the recommendations of the Committee with Vice-Chancellor as the Chair-Person.
- Physical infrastructure plays a major role in improving the quality of research undertaken, curricular, co-curricular and extra-curricular learning of students. The university continuously adds and upgrades its infrastructure to meet the quality needs of the students, teachers, research scholars and support staff.
- Addition of Central Research Instruments Facility (CRIF) as a cutting edge research facility has enhanced the effectiveness of research conducted at SSSIHL.

6.3.6 Human Resource Management

- The dictums of Bhagavan Sri Sathya Sai Baba of ‘Work is Worship’ and Duty is God’ motivates all the staff and students of the institute to give their best to every task at hand.
- Having said that, the institute takes care of the career advancement of all teaching and non-teaching staff in a very regular and structured manner.
- Workload is allocated to the faculty in a departmental meeting. This helps in participative management where workload is shared in a cohesive way with mutual discussion and consultation. This makes the departments work as one unit and shortfalls, if any, arise other faculty members step in to fill that gap. This brings to forth the dictum of sharing and growing.
- Sai Krishna Teaching awards for best teacher, motivate teachers to give their best. The teachers and staff can also avail the services of the two general and two super specialty hospitals which are run totally free of cost by the parent trust. They are also provided accommodation at a very nominal cost. Sports and recreational facilities are also available for the staff and faculty. Congregational singing and other spiritual activities in Prasanthi Nilayam, the abode of the revered founder chancellor, give food for the soul to all the staff and faculty.
- Faculty are encouraged to apply for research projects and find solutions to some problems identified by the different research and funding agencies
- Students and faculty members interact with the industrial experts and academia and get valuable inputs about the latest trends in their respective fields.
- All the staff and students of SSSIHL have world class health facilities at their disposal totally free of cost due to the presence of two general hospitals and two super specialty hospitals run by the parent organization.
- Children of the staff get free education in the schools run by the parent trust, SSSCT.
- The institute has excellent sports facilities and gymnasiums in all the campuses and all items of day to day needs are provided at a nominal costs to the staff and students.
- The elevating spiritual talks, congregational singing and celebration of different global festivals provide food for the soul to the staff and students and broaden their perspective.
- The education in Sri Sathya Sai Institute of Higher Learning (Deemed to be University) is IMPARTED TOTALLY FREE OF COST for all courses of study.

6.3.7 Faculty and Staff recruitment

Through Selection Committee as prescribed by the UGC under the regulations of Deemed to be Universities, 2010.

An employment notice is published in the website of the University inviting applications for faculty positions. The employment notice specifies and eligibility criteria for faculty position. On receipt of applications, the same will be sent to the Head of the concerned Department for scrutiny. Eligible candidates are called for giving a demonstration lecture to teachers and students. Based on the demonstration lecture, eligible candidates are shortlisted and called for an interview by a duly constituted Selection Committee consisting of the Vice-Chancellor as Chairperson, two external subject experts, Dean of the Faculty, and Head of concerned Department.

Based on the qualifications, experience and performance in the interview and if found suitable, the Selection Committee recommends the candidate for appointment as Assistant Professor/Associate Professor as the case may be.

6.3.8 Industry Interaction / Collaboration

Detection of Antimicrobial Resistance (AMR) Genes in bacterial cultures and clinical isolates is a collaborative research project undertaken by the Department of Biosciences with OMIX Research and Diagnostic Research Laboratories Pvt Ltd, a start up based in Bengaluru, India. An MOU was signed with the company on October 1st 2017.

This has also led to a joint publication with OMIX labs- Mahalingam N, Manivannan B, Khamari B, Siddaramappa S, Adak S, Bulagonda EP*. Detection of Antibiotic Resistance Determinants and their Transmissibility among Clinically-isolated Carbapenem-resistant Escherichia coli from South India. Med Princ Pract. 2018 May 8. PMID: 29739004

The Department of Mathematics and Computer Science (DMACS), SSSIHL, has signed a MOU with Maestro Technologies, Inc. located at 1 W State Street, Trenton, NJ 08608 to work with infrastructure dedicated to Data Science, Analytics and Computing program and also enable engaging suitably qualified Academic Faculty to educate and train students in related new technologies and help in implementation of Research projects with protocols and objectives of the Institute on October 1st 2017.

The Department of Chemistry, SSSIHL has signed the following MOU's with two different start-ups for the manufacture of point-of-care diagnostic devices-

1. Design, Development and Trials of Devices for Spectrometry and Image based Bio-medical Sensing with Labby Inc., USA on February 2nd 2018.
2. Design, Assembly and Development of Surface Plasmon-Coupled Emission based Hand-held and/or Benchtop Device(s) for Spectrometry and Image based Bio-medical and Chemical Sensing with Twastrix, a Pune based start-up on March 15th 2018.

Further, under the Central Research Instrument Facility (CRIF) umbrella, the Science faculty at SSSIHL have established collaborative links with national and international premier academic institutions and industries listed below:

Industrial Partners	
Grey Scientific Labs, Visakapatnam	Agilent Technologies India Pvt. Ltd.
SmartX Connected Products Pvt Ltd, Chennai	Twastrix, Pune
Light Motif Automation Sensors and Systems Pvt. Ltd., Hyderabad	Omix Research & Diagnostics Laboratories Pvt. Ltd., Bengaluru
Lab Engineers, Bengaluru	Labby Inc., USA
	Symrise, Chennai
Indras Pvt. Ltd., Hyderabad	Syngene Intl Ltd, Bengaluru

6.4 **Welfare schemes-** Education is imparted completely FREE OF COST in this institute and for those students who are under privileged, the mess charges are also waived Teachers and non-teaching staff of the institute can avail residential facilities at a nominal cost. Two super specialty hospitals and two general hospitals one each in Prasanthi Nilayam and Bengaluru cater to the health needs of the students, teachers and non-teaching staff of the institute. There are fair price shops run by the parent trust where all the essential day to day items are available for a nominal price.

6.5 Total corpus fund generated

₹ 5.82 crores

6.6 Whether annual financial audit has been done

Yes

☒

No

☐

6.7 Whether Academic and Administrative Audit (AAA) has been done?

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	Yes	12B & DU	Yes**	VC
Administrative	Yes	12B & DU	Yes**	VC

** Research Conferment Cell, Internal Quality Assurance Cell, Internal Audit

6.8 Does the University/ Autonomous College declares results within 30 days?

For UG Programmes Yes

☒

No

☐

For PG Programmes Yes

☐

No

☒

Note: Double evaluation of scripts takes more than 30 days.

6.9 What efforts are made by the University/ Autonomous College for Examination Reforms?

Examination Reforms Unit sponsored by UGC existed from 1985-1992. The activities of it are being carried on, viz., such as 10 points scale grading system, semester system, structured question papers, CIE and ESE pattern, question bank inputs, double evaluation in PG and professional programmes etc.,

6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?

Not applicable

6.11 Activities and support from the Alumni Association

The alumni of the institute play an important role in helping graduating students find suitable employment opportunities in their chosen vocation. They also help in academic inputs and industrial exposure.

They achieve this through an outreach programme called CATALYST (Corporate Aptitude Training – an Arena to Leverage Your Skills and Talents) where graduating students are coached in soft skills and in preparing résumés, the application process, interview techniques, networking and the like. The programme has been very successful.

Alumni contribute to the development of the institution in many ways. They provide valuable feedback regarding various courses and help in updating them. They help the alma mater in the conduct of annual workshops, seminars, and conferences. They are a part of the placement structure for the outgoing batch of students each year. They assist the departments by providing the list of latest references followed in similar programmes of overseas universities.

Alumni also help in formulation of courses and syllabus as members of the Board of Studies, help the research scholars with their research. Also help the students appreciate the unique value based education model of the institute.

All the modalities have been worked out to set up a formal Alumni Cell in the next academic year 2018-19 in the institute campus. Broad objectives is to act as a liaison between the institute and alumni and provide support and help both to the institute and the alumni community.

6.12 Activities and support from the Parent – Teacher Association

The support of the parents is sought in the following manner:

Parents of all the new students have a meeting with the warden, director and faculty at the time of joining the institute.

Feedback is taken from the parent at the end of each semester. Hostel warden sends a progress report at the end of each semester and parent's feedback and comments are received. Parents are required to meet the director/warden/resident teachers one in an academic year to appraise them of the progress of their ward in five dimensions of education practiced at SSSIHL namely intellectual, physical and cultural, devotional and service.

6.13 Development programmes for support staff

Career Advancement Scheme regularly promotes support and non-teaching staff. They are sent for courses on computers and are allowed to enrich their job description by following job rotation.

6.14 Initiatives taken by the institution to make the campus eco-friendly

All the Campuses have facilities like use of biogas, vermicomposting, use of eco-friendly briquettes for cooking, solar heaters for hot water, water harvesting facility, proper waste disposal. The institute also promotes students to take up tree plantation programmes on a regular basis.

Criterion – 7

7. Innovations and Best Practices

7.1 Innovations introduced during this academic year which have created a positive impact on the functioning of the institution. Give details.

The Institute Industry Interface Cell (IIIC) was created in February 2018 to cater to research innovation at SSSIHL.

The Council of Wardens was instituted to discuss and provide real time guidance to the students. The mentorship role provided by the council has been of significant benefit to the students, especially since SSSIHL is a residential setup.

In the following academic year the creation of the Alumni cell in SSSIHL is also being contemplated. This cell will serve as a liaison for all the activities between the Alumni and the institute. The cell will facilitate alumni participation in the formulation of courses, revision of syllabus, assist research scholars with their research.

The syllabus technical review committee with Controller of Examinations as the Chairperson is being constituted for implementation from June 2018.

7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year

Yes. The statutory committees provide action taken reports.

7.3 Give two Best Practices of the institution (*please see the format in the NAAC Self-study Manuals*)

Academic:

- 1) Sri Sathya Sai System of Integral Education is being imparted totally free of cost with stress on experiential learning
(Please refer to **Annexure-XI** for details)

Administrative:

- 2) Online Teaching Quality Feedback from the Students
(Please refer to **Annexure-XII** for details)

Best Practices at SSSIHL since Inception 1981:

- Socially relevant projects are encouraged
- Exposure to top academia and industrialists
- Committed and dedicated teaching fraternity
- Totally free education of high quality
- Values-based Integral education
- Vibrant academic environment
- Holistic ambience catering to body, mind and spirit
- Rich student diversity
- Preceptorial System
- Awareness Programme
- Self-reliance programmes
- Extension programmes – Grama Seva
- Annual Sports and Cultural Meet – 100% participation
- Punctuality in all schedules
- No student unrest at any point of time.
- No concept of Ragging at all in the hostels

The Institute works with clockwork precision:

- Academic Year commences on the 1st of June every year.
- Academic Year concludes on the 15th April every year.
- Admission Entrance Examinations for all Programmes is held from April 17-30 every year.
- Convocation ceremony of the institute is held on the 22nd of November every year.
- April 15th to May 31st – Summer Vacations every year.
- 15 days Winter Vacation in October-November every year.
- Examination results always declared in time – within a month of the examinations for Undergraduate Programmes

7.4 Contribution to environmental awareness / protection

A two credit Environmental Awareness is offered in the first and second semester for all the Undergraduate students. The department of Biosciences offers elective courses in Environment. Students periodically take up tree plantation initiatives in and around the campuses. A solar power plant has been installed in the Prasanthi Nilayam campus for providing clean energy catering to the needs of the Prasanthi Nilayam campus and the Central Research Instruments Facility (CRIF)

7.5 Whether environmental audit was conducted? Yes ☒* No ☐

* Environmental audit is done at all the Campuses and Hostels in an informal way. It is pertinent to share the following processes carried out in the campuses which show concern for the environment:

Energy conservation: All the Campuses and Hostels are equipped with CFL bulbs for energy consumption and are in the process of adopting LED bulbs in a phased manner in the entire institute. Combustible non-toxic waste like coconut shells, paper, carton boxes that is produced in the hostel is used as fuel for the boiler in the kitchen.

Use of renewable energy: Solar heating panels are used in all the four hostels as a renewable energy for the requirement of hot water for the students and in the kitchen. Solar panel street lights are also used. Kitchen is a zero LPG zone running on briquettes which is made by saw dust, groundnut shells, rice husk. A solar power plant has been installed in the Prasanthi Nilayam campus for providing clean energy catering to the needs of the Prasanthi Nilayam campus and the Central Research Instruments Facility (CRIF). There is a proposal to introduce solar power in a phased manner in the institute in the coming academic years. There is a plan to put solar panels on the stands of Sri Sathya Sai Hillview stadium. This will provide self sufficiency to the Prasanthi Nilayam campus in terms of energy needs. This will be operational by the end of next academic year.

Water harvesting: Rain water harvesting facility is available in all the campuses of the institute. In Prasanthi Nilayam campus water from the hostel building flows into a specially made soak pits on either side of the hostel through pipes and a cement channel. This helps in recharging the bore well which is in front of the hostel. This bore well is used for meeting the hostel water requirements.

Tree Plantation: Tree plantation is taken up on a regular basis by the students under the guidance of the hostel teachers. The students participate in planting trees like neem, coconut and *kanuga* (local fast growing variety) in and around the campuses under self-reliance activities.

*** Efforts for Carbon neutrality:** Biomass gas and gohar gas is used in place of fossil fuels and fire wood thus preventing pollution of the atmosphere. The institute campuses have lot of greenery which reduces the CO₂ content though the institute is located in dry region of Rayalaseema, Andhra Pradesh.

Hazardous waste management: A Radiation Safety Officer (RSO), certified and authorised by AERB has been nominated to take care of procurement and storage of radioactive material and disposal of radioactive waste as per AERB guidelines. RSO has been submitting the Annual reports of radioactive material usage and radioactive waste disposal in adherence to AERB regulations.

The radioactive material procured by SSSIHL from BRIT: Board of Radiation and Isotope Technology (a unit of BARC) is for research purpose only and is of very minimal strength / activity (few micro- milli Ci). After using the material for research purposes, depending on the half-life of the isotope and permissions from AERB, this radioactive waste is categorized and disposed as per the AERB norms

*** e-waste management:** Institute adopts buy back policy and obsolescence removal policy and through which e-waste management is controlled.

Drip irrigation facility is available in one of the campuses of the institute.

7.6 Any other relevant information the institution wishes to add. (for example SWOT Analysis):

SWOC analysis

Strength (Salient Features)-

- **Unique blend of Spiritual and Secular Education-** Following the dictum of Revered Founder Chancellor, 'Education is for life and not merely for a living', this institute helps a student in acquisition of both secular and spiritual knowledge. This enables a student to connect to his/her Divine inner self resulting in a calm, focused and intuitive mind.
- **Modern Infrastructure-** This Institute provides modern infrastructure to the students like digital classrooms, high speed broadband connectivity, well-equipped libraries & research laboratories and excellent sports facilities. It houses an indoor stadium, an outdoor stadium, a planetarium, accommodation for teaching and non-teaching staff and has two super-specialties and two general hospitals for health related issues (free of cost). The student-computer ratio of the institute is 2.5:1 which is very high compared to the national average.
- **Academic Excellence-**
 - More than 70% of the teachers have Ph.D. qualification and another 15% are pursuing doctoral research. There is a 33% increase in teaching faculty strength and 57% increase in doctoral research scholars in the last four years. Research Scholars represent 6% of the total student population at SSSIHL, a figure far above the national average. Experts from academia and industry visit the institute from time to time and share their rich experience with students in forums like departmental colloquium, guest lectures, workshops and conferences held in the institute.
 - The university has adopted the semester system right from its inception (over 34 years) and a credit based grading system on a 10 point scale comprising continuous internal evaluation (CIE) and End Semester Examination (ESE) for the students. This helps the students to progressively improve their performance and have a sound conceptual knowledge. The pass percentage of students since the inception of the institute is well above 90% in undergraduate programmes and 96% in postgraduate and professional programmes. On an average, 40 % of the students secure distinction in the semester examination and one out of every four final year post-graduate students qualify in national exams such as GATE/JEST, CSIR-UGC-NET. The pass percentage in competitive examinations is far above national average.
- **Compulsory Residential Character-** The students live in the hostel following the ideal of 'each lives for the other and all live for God'. This equips them with the soft skills and life skills in a practical way. The hostel runs as a self-sufficient unit where the students take care of all activities of the hostel. This makes them appreciate the dignity of labour and spirit of work. They also acquire the traits of adaptability, empathy and team work. Nearly one third of the teaching faculty stay with the students in the hostel and are readily available round the clock for students to freely discuss both academic issues and personal matters with them.
- **Socially Relevant Research-** According to our Revered Founder Chancellor, knowledge that is not translated into skills that benefit society is useless. Thus, research topics across all departments are chosen with great diligence, leading to translation research or directed basic research like sensors for Disease Biology, Tropical Microgreens – A viable answer to malnutrition in rural India, Next-Gen Plasmonics Technology for point-of-care diagnostics, deflouridation, Spirit at Work, Values in Management etc. A state of the art Central Research Instruments Facility, will give further impetus to the interdisciplinary research leading to societal benefit.
- **Free Education-** The Institute offers education TOTALLY FREE OF COST for all courses of study.
- **Service Dimension-** The students are encouraged to experience the deep inner satisfaction of giving

joy to others through selfless service. The students under the able guidance of the teachers run the hostel as a self-sufficient unit. They take care of departments like Housekeeping, Health Care, Publications, Culinary tasks, Entertainment, Provision Stores without any external support. These self-reliance activities enable students to become self-confident and independent, and also contribute to leadership and entrepreneurial development. The students and teachers of the institute participate in Grama Seva, a sacred activity of serving nearly 3,00,000 poor and needy of the nearly 150 villages around Puttaparthi. This is being modified from this year onwards to make it an ongoing activity rather than a one off event with an objective to give a better hands on experience to the students. Activities being contemplated are- Skill development of youth, Vocational training, inculcating cleanliness culture, tree plantation.

- **Cultural Dimension-** SSSIHL on an average has student representation from almost all the states of India making it rich in diversity. This helps in a healthy exchange of ideas, beliefs and facilitates mutual appreciation of cultural nuances, instilling in them the virtue of 'Unity in Diversity.' All students are also exposed to life lessons in forums like Summer Course in Indian and Spirituality, Awareness Courses, Moral Classes, Dramatics, Public speaking etc.
- **Physical Dimension-** The students are trained to overcome their physical limitations and strive for excellence. Daily yoga classes are conducted for the students at the hostel. Students have to participate in compulsory morning exercises and games every day. All students enthusiastically participate in different sports and cultural events in the 'Annual Sports and Cultural Meet'.
- **Gender Sensitivity-** Gender related problems never occur in this university as the campuses for men and women are different with dedicated men and women staff respectively. Revered Found Chancellor, Bhagawan Sri Sathya Sai Baba has said, "Women should never be slighted or treated with disrespect. Wherever women are honoured, there is prosperity and happiness." Students are taught this ideal of respect for women during their course of study.
- **Clockwork Precision-** The academic year commences on 1st June and ends on April 15th the subsequent year. The results of every semester are declared within two and half months of the end of the semester.

Spirit of Camaraderie- The students live in the hostels in a spirit of camaraderie. One alumnus recollects, "When I entered the hostel for the first time, the seniors came forward and helped me to feel at home. I was surprised that the word ragging is unheard of in Sri Sathya Sai Hostels."

Weaknesses-

- Though the system at SSSIHL doesn't have any obvious weakness, the newly admitted students in our unique system of Integral Education may have some difficulties to adjust to the system in the initial stages. Nevertheless, the same students after a couple of months of experiencing the system seem to enjoy the system at SSSIHL and continue to practice the same in future life.

Opportunities-

- Conducive atmosphere for students to achieve academic excellence.
- Lot of opportunities for students to develop and chisel their academic skills and talents.
- Students can go beyond the mundane to enquire and explore the real purpose of life and inculcate virtues of ethical and moral living.
- Due to the rural set up of the institute, there is immense potential to undertake need based research for the benefit of the society.

Challenges-

- In this internet age with so many distractions, temptations and instant gratifications, it is the biggest challenge to make young minds of the students to be focussed and self-sufficient and inspire them to dive deep within to know the true purpose of life.
- Maintaining Sathya Sai System of Integral Education for making ideal Sai student / Ideal Citizen.

- Contemplating on multi-disciplinary programmes and advanced research with a policy on social relevance for the neighbourhood and the society.

8. Plans of institution for next year:

Road Map Ahead:

The quality initiatives SSSIHL that need to take in order to improve and sustain quality in teaching and research were discussed. The points that emerged from this discussion are listed below.

- Central Research Instruments Facility (CRIF) has become functional and the allied experimental facilities will be augmented.
- Though the curricula associated with various academic programmes are being reviewed regularly, the institute is open to implement the advancements that are taking place elsewhere in the world. On the same lines our Ph.D. programmes will be need based.
- Alignment of thrust areas of teaching and research with the vision of SSSIHL.
- Since, the emphasis is going to be on quality research for societal benefits, it is required to strengthen the ongoing scientific collaborations with like-minded organizations/academic/science community both at national and international levels.
- As proposed the process of identifying the talent / spark in UG students early to orient his / her line of thinking in a focussed manner by assigning project oriented work which is extendable to his/her higher studies which can culminate into a research problem of his/her own interest would be continued in a sustainable manner.
- The SSSIHL continues to have robust quality assurance system in place through inputs received from: Department committee, Research Conferment Cell, Boards of Studies, Academic Council, Campus-Hostel Management Committee and Leadership Committee.
- Continue to have Faculty Training in-House and by deputation to other External Institutions (National and International)
- Promoting Green Initiatives in the institute.
- It is intended to strengthen the on going activities concerning the needs of villagers by running the programmes such as soft-skills, computer literacy, promoting rural entrepreneurship, facilitating incubation cell through IIC, helping farmers to identify soil / weather compatible crops through the research efforts of faculty, conversion of waste materials into useful products.

- Continue to have certificate course in skill development once a year in the Department of Management & Commerce and Department of Mathematics & Computer Science.
- Extend the required support to the rural students to excel in their future endeavours.
- Continue to identify exotic Plants in and around Anantapur District for medicinal applications.
- Continue to have our Research focus on the development of efficient materials for strategic, automobile, Green building etc., applications.



Signature of the Coordinator, IQAC

Name: Dr. Pallav Kumar Baruah



Signature of the Chairperson, IQAC

Name: Prof. K B R Varma




SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING
 (Deemed to be University)

Academic Calendar 2017/18

SUMMER SEMESTER		
JUNE		
1	Thu	Summer Semester Commences
9-11	Fri-Sun	Summer Course in Indian Culture & Spirituality ^{††}
26	Mon	Eid al-Fitr*
JULY		
9	Sun	Guru Poornima*
22-26	Sat-Wed	Supplementary End-Semester Examinations
AUGUST		
15	Tue	Sri Krishna Janmashtami* / Independence Day*
25	Fri	Ganesh Chaturthi*
SEPTEMBER		
24-30	Sun-Sat	Dasara Celebrations
28	Thu	Durgashtami*
29	Fri	Mahanavami*
30	Sat	Vijayadasami*
OCTOBER		
1	Sun	Muharram*
1-3	Sun-Tue	Study leave for End-Semester Examinations ^{††}
2	Mon	Gandhi Jayanti*
4-16	Wed-Mon	End-Semester Examinations
16	Mon	Summer Semester Ends
19	Thu	Deepavali*
17-31 Oct		Winter Vacation

* Holiday

†† Classes Suspended

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 Classes will be suspended on 14 Feb (the day following Shivaratri
 and 24 Nov (the day following Bhagawan Baba's Birthday)

WINTER SEMESTER		
NOVEMBER		
1	Wed	Winter Semester Commences
11-12	Sat-Sun	Akhanda Bhajan
22	Wed	SSSIHL 36 th Annual Convocation
23	Thu	Bhagawan Baba's 92 nd Birthday*
DECEMBER		
25	Mon	Christmas*
JANUARY		
28 Dec - 15 Jan	Thu-Mon	Annual Sports & Cultural Meet ^{††}
14	Sun	Bhogi*
15	Mon	Makarasankranti*
26	Fri	Republic Day*
FEBRUARY		
13	Tue	Mahashivaratri ^{††}
21-24	Wed-Sat	Supplementary End-Semester Examinations
MARCH		
18	Sun	Ugadi*
25	Sun	Sri Ramanavami*
26-31	Mon-Sat	Study Leave for End-Semester Examinations ^{††}
30	Fri	Good Friday*
APRIL		
1-15	Sun-Sun	End-Semester Examinations
15	Sun	Winter Semester Ends
24	Tue	Sri Sathya Sai Aradhana Mahotsavam
16 Apr - 31 May		Summer Vacation

17-30 April SSSIHL Admissions Tests & Interviews

Fri, 1 Jun Academic Year 2018/19 commences



SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(Deemed to be University)

Faculty Achievements 2017/18

Mathematics and Computer Science

Sri Darshan Gera

Invited Talk on Generative adversarial Network and Variational Auto Encoders, and conducted a hands-on lab, National Workshop on Deep Learning: Bridging Theory and Practice, University of Calicut, 22-24 Feb 2018.

Dr. Pallav Kumar Baruah

Keynote Talk on Blockchain and Big Data, IEEE International Conference on Data Security, Kalasalingam University, Tamil Nadu, 11 Dec 2017.

Dr. S Balasubramanian

Hands-on tutorial on Convolutional Neural Networks, National Workshop on Deep Learning: Bridging Theory and Practice, University of Calicut, 22-24 Feb 2018.

Dr. Krishna Kiran Vamsi Dasu

Teacher Invitee, Eighty-third Annual Meeting of the Indian Academy of Sciences at NEHU, Shillong, 3-5 Nov 2017.

Young Scientist Award 2017 in the field of Mathematical Sciences, Andhra Pradesh Akademi of Sciences (APAS), Andhra Pradesh Science Congress, Andhra University, 7-9 Nov 2017.

Dr. Srinath M S

Invited Talk on Supersingular Isogeny-based Cryptography, National Workshop on Post-Quantum Cryptography held at Society for Electronic Transactions and Security, Chennai, 27 Mar 2018.

Physics

Dr. Gowrishankar R

Invited Plenary Talk on Investigations of Long-lived isomers in transuranic actinides, 62nd DAE-BRNS Symposium on Nuclear Physics, Thapar University, Patiala, Punjab, 20-24 Dec 2017.

Resource Person, National level workshop on Laser and Light, Department of Postgraduate Studies and Research, University College of Science, Tumkur University, Tumkur, 17-18 Aug 2017.

Examiner for Practicals, Department of Electronics, Sri Krishnadevaraya University, Anantapur, 11-12 Dec 2017.

Chemistry

Dr. G Nageswara Rao

Filed a Patent Application for Spirobibenzopyrans and Analogues as Multitherapeutic Agents, 15 Jun 2017. The filing numbers are: PCT/IB2018/054280 (U.S.A.) and IN 201741020910 (India).

Biosciences

Dr. (Ms.) Seethalakshmi Laxmanan

Co-Chairperson, National Seminar on Current Trends in Biosciences, 22-23 Jan 2018

Dr. B S Vijayakumar

Invited Ph.D. examiner and conducted a Ph.D. defense (viva voce), Bharathiyar University, Coimbatore, Tamil Nadu, May 2018.

Evaluated 18 Doctoral Research theses for candidates from Bharathiyar University, Coimbatore, Periyar University, Salem and Bharathidasan University, Trichy, Tamil Nadu.

Mrs. B Anusha

Invited Oral Presentation on Radical scavenging and reducing potential of *Trachyspermum ammi* L (Ajwain) plant extracts, National conference on Advanced Research in Pharmaceutical and Chemical Sciences - Emerging Challenges in Practice, Jawaharlal Nehru Technology University - Oil Technological and Pharmaceutical Research Institute (JNTU-OTPRI), Anantapur, Andhra Pradesh, 15-16 Sep 2017.

Invited Oral Presentation on *In vitro* anti-inflammatory activity of Ajwain (*Trachyspermum ammi* L) plant extracts, Pharma Transpire - 3rd International Conference on Design Development and Practice of Drugs, CES College of Pharmacy, Kurnool, Andhra Pradesh, 1-2 Feb 2018.

Food and Nutritional Sciences

Dr. (Miss) N Srividya

Best Oral Presentation Award for the paper, Nutritional quality and novel culinary applications of 'microgreens' – An emerging space age food crop, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.

Best Poster Presentation Award for the paper, Agronomic biofortification: A simple and low-cost strategy for the improvement of essential minerals, phytochemicals, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.

Best Poster Presentation Award for the paper, Formulation and evaluation of vitamin fortified instant rasam mix, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.

Dr. (Mrs.) M Srijaya

Invited Talk on Food irradiation: Scope and potential in processing and preservation of fruits and vegetables, National conference on Advanced Research in Pharmaceutical and Chemical Sciences - Emerging Challenges in Practice, Jawaharlal Nehru Technology University - Oil Technological and Pharmaceutical Research Institute (JNTU-OTPRI), Anantapur, Andhra Pradesh, 15-16 Sep 2017.

Chaired Scientific Session on Food Processing Technologies, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.

Evaluator and Judge for Scientific Poster Sessions, Food Processing and Preservation, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.

Evaluator and Judge for Scientific Poster Session, Food Technology, National conference on Advanced Research in Pharmaceutical and Chemical Sciences - Emerging Challenges in Practice, Jawaharlal Nehru Technology University - Oil Technological and Pharmaceutical Research Institute (JNTU-OTPRI), Anantapur, Andhra Pradesh, 15-16 Sep 2017.

Dr. (Mrs.) Ambati Padmaja

Best Poster Presentation Award for the paper, Extraction and Characterization of Passion Fruit Peel, 26th Indian Convention of Food Scientists & Technologists, CSIR-Indian Institute Chemical Technology, Hyderabad, 7-9 Dec 2017.

Dr. (Ms.) Meera Manikkavachakan

Chaired Scientific Session for Oral Presentation on Food Technology, National conference on Advanced Research in Pharmaceutical and Chemical Sciences - Emerging Challenges in Practice, Jawaharlal Nehru Technology University - Oil Technological and Pharmaceutical Research Institute (JNTU-OTPRI), Anantapur, Andhra Pradesh, 15-16 Sep 2017.

Chaired Scientific Session on Indian Food culture / Ayurvedic Nutrition, International Conference on Specialised Ayurvedic and Innovative Foods and Nutrition, Sri Sathya Sai Institute of Higher learning, Anantapur Campus, Andhra Pradesh, 16-17 Feb 2018.

Prof. (Mrs.) B Andallu

Chaired Oral and Poster Presentations, and Delivered Invited Lecture on Phytoceuticals: Isolation, Identification and Assessment of Bioactivity (*in vitro*), National conference on Advanced Research in Pharmaceutical and Chemical Sciences - Emerging Challenges in Practice, Jawaharlal Nehru Technology University - Oil Technological and Pharmaceutical Research Institute (JNTU-OTPRI), Anantapur, Andhra Pradesh, 15-16 Sep 2017.

Invited Talk on Protective effect of phytochemicals in *Pimpinella anisum* L. against H₂O₂-induced oxidative stress in human leukocytes, 105th Annual Session of the Indian Science Congress Association (16-20 Mar 2018) Manipur University, Imphal, Manipur.

Management and Commerce

Dr. (Mrs.) Swetha Thiruchanuru

Invited Talk on The Glory of Women: Nurturing her innate qualities to become an entrepreneur, Women Empowerment Cell, Sri Sai Baba National Degree College, Anantapur, Dec 2017.

Dr. Sayee Manohar K

Resource Person for the topic, New Dimensions of Commerce in Globalized Era - 2018, at Marudhar Kesari Jain College for Women, Vaniyambadi, Tamil Nadu, 27 Feb 2018.

Dr. (Miss) Ch Radhakumari

Best Paper Award for the Research Paper, The SIR impact of demonetization – measure of long-term growth with statistical evidence, International Conference on Recent Trends in Technology and its impact on Indian Economy, Bathinda, Punjab, 24 Oct 2017.

Dr. (Miss) T R Rajeswari

Invited Talk on Sustainable Management Practices to Promote Welfare of the People and the Planet, National Conference on Emerging Trends in Management Practices in the Globalised Era, Sivakasi, Tamil Nadu, 2 Feb 2018.

Economics

Dr. (Ms.) M R Geetha Bala

Invited Talk on Inflation and Business Cycles, GATES Institute of Technology, Gooty, Andhra Pradesh, Dec 2017.

Education

Prof. (Miss) Madhu Kapani

Invited Talk, Value Education and The Role of Teachers, National Seminar on Advanced Trends in Value Education, University College of Education, Sri Krishnadevaraya University, Anantapur on 5 Dec 2017.

Dr. (Mrs.) P Lavanya

Invited Talk, Value Integration through Mathematics, National Seminar on Advanced Trends in Value Education, University College of Education, Sri Krishnadevaraya University, Anantapur on 5 Dec 2017.

English Language and Literature

Dr. Arun Kumar Behera

Resource Person, Interactive Meeting for R N Bajaj Global University, Bikaner at the Sambhram Academy of Management, Bangalore.

Sub-departments and Languages

Dr. (Miss) Kiron Bala Arora

Invited Talk on Seva as the way to True Education and Liberation, Sri Sathya Sai Gramin Jagriti project, Ambala, Haryana, May 2018.

Dr. N Venkatesha Rao

Received Bharath Jyothi Award for Outstanding Achievements in Literature, India International Friendship Society, New Delhi, 26 Mar 2018.

Invited Talks on the works of Vadiraja & Rare Commentaries, National Research Institute - Poornaprajna Samshodha Samsthanam, Bangalore, 5-12 May 2018.

Invited Talks on Sandhyadhikarana, Brahmasutra, Dwaita Vedanta Samskrit Conference - Srimannyyaya Sudhaa Mahotsava, Poornaprajna Vidyapeeta Samskrit College, Udupi, Karnataka, 3-5 Jan 2018.

Dr. (Mrs.) M Praphulla

Invited Talk on Telugu Bhasha - Vaisishtyamu, Government Degree College, Uravakonda, Andhra Pradesh, 29 Aug 2017.

Faculty participation in conferences and symposia

Faculty attended in conferences/symposia are given under point no.2.13 above in the AQAR report. Following are the conference papers presented in the various conference at national and international levels.

Biosciences

1. B. E. Pradeep , M. Bhavani , M. Niranjana, Manmath Lama, P. Chanakya, K. Balaram, J. Sudhir, V. Madavan and V. Nagaraja (September 7-9, 2017) Elizabethkingia anophelis, an emerging opportunistic pathogen involved in diverse human infections. In *TWAS ROCASA - Infectious Diseases : Biology to Intervention Strategies. A Conference of Young Scientists in Central & South Asian Region*, JNCASR, Bengaluru,
2. Mukul Anand and R. Basavaraju (15 Sep 2017) Phytochemical profile and pharmacological potential of Tecoma stans. In *National conference on Advanced Research in Pharmaceutical and Chemical Sciences- Emerging Challenges in Practice*, Oil Technological Research Institute (Affiliated to JNTUA), Anantapur, Andhra Pradesh
3. Thirnahalli Nagaraj Girish (26 Feb 2018) Heat and humidity trigger plastic changes in body lipids and starvation resistance in the tropical Zaprionus indianus. In *Integrative Biology 2018*, Bangkok, Thailand.

Chemistry

1. Dr. Sahida Sharma & Prof. B. Andallu (16 &17 February 2018) Heavy metals in soil, water, vegetables and fruits in the fields close to cement and slab industries in Anantapur District.. In *Specialised, Ayurvedic & Innovative Nutrition*, Sri Sathya Sai Institute of Higher Learning, Anantapur,
2. Dr. B. Siva Kumar,* and Thota Sai Praneeth (16 Mar 2018) Groundnut shell as renewable alternative source for biofuels, carbon dots and ultracapacitors. . In *105th Annual Session of the Indian Science Congress Association*, Manipur University, Imphal , Yes.
3. S. K. Belliraj*,T. S. Praneeth, P. V. Vadlani (13 May 2018) Biomass processing for renewable energy applications: microbial consorti. In *3rd Green & Sustainable Chemistry Conference.*, Berlin, Germany, NA

Mathematics and Computer Science

1. Vsairaam, Dr. S.Balasubramaniyan, Darshan Gera (22 Dec 2017) Multiple Face-Component Analysis: A Unified Approach towards Facial Recognition Tasks. In *2017 2 nd International Conference on Man and Machine Interfacing, MAMI 2017*, Bhubvnswar, IEEE Advancing Technology for Humanity
2. B V K Bharadwaj and Pallav Kumar Baruah (15 Mar 2018) Oscillation Criteria for Higher Order Coupled Systems. In *International conference on applied analysis, mathematical modelling and computing techniques* , The Gandhigram Rural Institute, Gandhigram, Dindigul, Tamilnadu,
3. Manuj Subhankar Sahoo, Pallav Kumar Baruah (27 Mar 2018) HBasechainDB – A Scalable Blockchain Framework on Hadoop Ecosystem,. In *Asian Conference on Supercomputing Frontiers, SCFA 2018*, Singapore, Supercomputing Frontiers pp 18-29, Part of the Lecture Notes in Computer Science book series (LNCS, volume 10776)
4. B Abhinay, K Anirudh, J Bhanu Teja, Pallav Kumar Baruah, (18 Dec 2017) A Fast GPU-based Global Sampling Method for Alpha Matting on High Resolution Images. In *IEEE International Conference on. High Performance Computing, Data, and Analytics. Student Research Symposium*, Jaipur, India, Poster Presentation.
5. Manuj Subhankar Sahoo, Digendra Rai, P Sai Laskhman, Pallav Kumar Baruah, Adarsh Saraf (18 Dec 2017) HBasechianDB2.0 – A Scalable Blockchain Framework on Hadoop Ecosystem. In *IEEE International Conference on. High Performance Computing, Data, and Analytics. Student Research Symposium*, Jaipur, India, Poster Presentation.

6. Manoj Kumar, Digendra Rai, Abhishek Gupta, Pallav Kumar Baruah (18 Dec 2017) Parallel Implementation of Screen Content Video Compression based on Block Classification Scheme. In *IEEE International Conference on. High Performance Computing, Data, and Analytics. Student Research Symposium*, Jaipur, India, Poster Presentation.
7. P Murali Krishna, Pallav Kumar Baruah, (18 Dec 2017) Scalable Real Time Rule Engine Model. In *IEEE International Conference on. High Performance Computing, Data, and Analytics. Student Research Symposium*, Jaipur, India, Poster Presentation.
8. K Sathyanarayanan, Kota Chetan Satyanarayan, R Sai Varun, Pallav Kumar Baruah, (18 Dec 2017) Parallel Implementation of Neighbourhood Repulsed Metric Learning. In *IEEE International Conference on. High Performance Computing, Data, and Analytics. Student Research Symposium*, Jaipur, India, Poster Presentation.
9. B V K Bharadwaj and P K baruah (11 Feb 2018) Oscillation Criteria for Higher order Coupled Systems. In *International Conference on Applied Analysis, Mathematical Modeling and Computing Techniques (ICAAMMCT – 2018)*, Gandhigram Rural Institute (Deemed to be University), Gandhigram, Tamil Nadu. India, No.
10. Anil Kumar Reddy, Sai Vikas, R. Raghunatha Sarma, Gurudat Shenoy, and Ravi Kumar (Jun 22, 2018 - Jun 23, 2018) Segmentation and Classification of CT Renal Images using Deep Networks. In *ICSCSP-2018 : Springer- International Conference on Soft Computing and Signal Processing*, Malla Reddy College of Engineering And Technology (MRCET AUTONOMOUS) affiliated to the Jawaharlal Nehru Technological University, Hyderabad., To appear in Advanced Intelligent Systems and Computing (AISC)” Springer publication this year.
11. V Sairaam Darshan Gera S Bsalasubramanian (21 - 23 Dec 2017) Multiple Face-Component Analysis: A Unified Approach towards Facial Recognition Tasks. In *IEEE International conference on Man and Machine Interfacing (MAMI)*, C V Raman College of engineering, Bhubaneswar, IEEE Explore
12. Sai Shyam Sharma, Sanik Thapa, Chaitanya Pavan Tanay (08 Dec 2017) A Robust Colour Video Watermarking Technique using DWT, SVD and Frame Difference. In *Pattern Recognition and Machine Intelligence*, Kolkata, Springer, 7th International Conference, PReMI 2017, Kolkata, India, December 5-8, 2017, Proceedings

Physics

1. Abhilash Achanta, Balla Ananda Rao, Sai Sundar Kandarpa, Siva Sankara Sai, Krishna Chaitanya Vishnubhatla ,Krishna Kumar. (17 Dec 2017) Radio over Fiber link design for the Fronthaul of cellular communication systems. In *IEEE International conference on Advanced Networks and Telecommunication Systems*, CV Raman Engineering College, Bhubaneswar, Odisha.
2. L.A. Avinash Chunduri, Aditya Kurdekar, Sandeep Patnaik, E Rajasekhar, Saikiran Aditha, C Prathibha, Kamiseti Venkataramaniah (09 Nov 2017) Single step Hydrothermal Synthesis of Amine Functionalized Carbon Quantum Dots from Citric acid for early Diagnosis of HIV Infection . In *Andhra Pradesh Science Congress*, Visakhapatnam.
3. Sandeep Patnaik, L. A. Avinash Chunduri, Aditya D. Kurdekar, Saikiran Aditha, C. Prathibha and Venkataramaniah Kamiseti (09 Nov 2017) Novel Nanoformulations for overcoming the challenge of poor water solubility of some Nonsteroidal Anti-inflammatory Drugs . In *Andhra Pradesh Science Congress*, Visakhapatnam ,
4. Ruman Dutta, Sai Krishna S, Gowrishankar R, Subhanu G J, Siva Sankara Sai S (17 Dec 2017) Fragmentation-Aware Routing, Wavelength and Spectrum Assignment (RWSA) Scheme in Flex-grid Optical Networks. In *11th IEEE International Conference on Advanced Networks and Telecommunications Systems*, Bhubaneswar.
5. B.V. Avinash, M. Sai Siva Ramakrishna, R. Gowrishankar, Siva Sankara Sai S (17 Dec 2017) A Docker based test-bed for GMPLS simulation. In *11th IEEE International Conference on Advanced Networks and Telecommunications Systems*, Bhubaneswar.

6. Muralikrishna Molli, Bharadwaj Chowdary, V. Sai Muthukumar, R. Gowrishankar (24 Nov 2017) Nonlinear Optical transmission of Nanocrystalline FeSe₂ in the ultrafast excitation regime. In *International Conference on Condensed Matter and Applied Physics (ICC 2017)*, Govt. Engineering College, Bikaner, Rajasthan.
7. Muralikrishna Molli, Bharadwaj Chowdary, V. Sai Muthukumar, R. Gowrishankar (19 Dec 2017) Nonlinear Optical transmission of Nanocrystalline Cu₂Se in the ultrafast excitation regime. In *International Workshop on Advanced Materials (IWAM 2017)*, NIST Berhampur, Odisha.
8. R. Gowrishankar and P. C. Sood (20 Dec 2017) Two-particle structure in odd-odd nucleus. In *DAE Symp. on Nucl. Phys.*, Thapar University, Patiala, Punjab, Proceedings of the DAE Symp. on Nucl. Phys. 62 (2017), 134-135.
9. P. C. Sood, and R. Gowrishankar (20 Dec 2017) Non-Coriolis Band Mixing in Deformed Nuclei. In *DAE Symposium on Nuclear Physics*, Thapar University, Patiala, Punjab, Proceedings of the DAE Symposium on Nucl. Phys. 62 (2017), 214-215.
10. Muralikrishna Molli, Bharadwaj Chowdary, V Sai Muthukumar, R Gowrishankar, Nonlinear optical transmission of nanocrystalline FeSe₂ in the ultrafast excitation regime. Inc, AIP Conference Proceedings 1953, 030273 (2018); <https://doi.org/10.1063/1.5032608>
11. Pamarti Viswanath¹, Sadhu Sai Pavan Prashanth, Muralikrishna Molli, Jaschin Prem Wicram and Sai Muthukumar V (23 Dec 2017) Optical and vibrational spectroscopy of Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O₃ modified lithium borate glass ceramics. In *DAE-BRNS-62nd Solid State Symposium*, BARC, Mumbai, AIP Conference Proceedings 1942, 070035 (2018); <https://doi.org/10.1063/1.5028833>
12. Bharadwaj Chowdary, Kaushik Jayaraman, Muralikrishna Molli (24-25th November 2017) Effect of sulfur doping on thermoelectric properties of Sodium Tantalate – A first-principles study. In *ICC 2017, 2nd International Conference on Condensed Matter and Applied Physics*, Govt. Engineering College, Bikaner, Rajasthan, India, AIP Conference Proceedings 1953, 110005 (2018); <https://doi.org/10.1063/1.5033030>
13. S. Sairam, Ranjan Rai, Muralikrishna Molli (24-25th November 2017) Studies on temperature coefficient of resistivity of Cu₂Se – V₂O₅ nanocomposite. In *ICC 2017, 2nd International Conference on Condensed Matter and Applied Physics*, Govt. Engineering College, Bikaner, Rajasthan, India, AIP Conference Proceedings 1953, 030266 (2018); <https://doi.org/10.1063/1.5032601>
14. Muralikrishna Molli, Bharadwaj Chowdary, Sai Muthukumar, R. Gowrishankar (24-25th November 2017) Nonlinear optical transmission of nanocrystalline FeSe₂ in the ultrafast excitation regime. In *ICC 2017, 2nd International Conference on Condensed Matter and Applied Physics*, Govt. Engineering College, Bikaner, Rajasthan, India, AIP Conference Proceedings 1953, 030273 (2018); <https://doi.org/10.1063/1.5032608>
15. Pamarti Viswanath, Sadhu Sai Pavan Prashanth, Muralikrishna Molli, Jaschin Prem Wicram, and Sai Muthukumar V (26th - 31st December 2017) Optical and vibrational spectroscopy of Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O₃ modified lithium borate glass ceramics. In *62nd DAE Solid State Physics Symposium*, BARC, Mumbai, AIP Conference Proceedings 1942, 070035 (2018); <https://doi.org/10.1063/1.5028833>

Food and Nutritional Sciences

1. Manjula D. Ghora and N. Srividya (16-17 Feb 2018) Nutritional quality and novel culinary applications of “microgreens” – An emerging space age food crop. In *International Conference on Specialised, Ayurvedic & Innovative Foods & Nutrition*, Sri Sathya Sai Institute of Higher Learning, Anantapur,
2. Ashrita C. Haldipur and N. Srividya (16-17 February 2018) Antidiabetic plant metabolites, in vitro therapeutic potential and Ayurveda based evaluation of Kattuyanam and Bamboo rice. In *International Conference on Specialised, Ayurvedic & Innovative Foods & Nutrition*, Sri Sathya Sai Institute of Higher Learning, Anantapur.

3. Pushkala R. Padmanabh and N. Srividya (16-17 February 2018) Applications of international software tools for community-based nutrition research. In *International Conference on Specialised, Ayurvedic & Innovative Foods & Nutrition*, Sri Sathya Sai Institute of Higher Learning, Anantapur.
4. S. T. Uma Bharathi, Ashrita C. H., and N. Srividya. (16-17 February 2018) Agronomic biofortification: A simple and low-cost strategy for the improvement of essential minerals, phytochemicals, and antioxidant quality of sunflower sprouts. In *International Conference on Specialised, Ayurvedic & Innovative Foods & Nutrition*, Sri Sathya Sai Institute of Higher Learning, Anantapur.
5. Swati S., Manjula D. Ghoola and N. Srividya (16-17 February 2018) Comparative studies on pre and postharvest treatments with Aloe vera gel and CaCl₂ on the shelf life quality of sunflower microgreens. . In *International Conference on Specialised, Ayurvedic & Innovative Foods & Nutrition*, Sri Sathya Sai Institute of Higher Learning, Anantapur ,
6. N. Srividya, Gayathri S. and Shagana M. (16-17 February 2018) Formulation and evaluation of vitamin fortified instant rasam mix. . In *International Conference on Specialised, Ayurvedic & Innovative Foods & Nutrition*, Sri Sathya Sai Institute of Higher Learning, Anantapur,
7. A. Lakshmi, Shrijana Rasaily and N. Srividya (16-17 February 2018) Ayurvedic principles of diet for weight reduction. . In *International Conference on Specialised, Ayurvedic & Innovative Foods & Nutrition*, Sri Sathya Sai Institute of Higher Learning, Anantapur.
8. V. Amrutha Sai, V. Devi and N. Srividya. (16-17 February 2018) Home remedies using spices and herbs for common ailments, In *International Conference on Specialised, Ayurvedic & Innovative Foods & Nutrition*, Sri Sathya Sai Institute of Higher Learning, Anantapur ,
9. S. Saidharshini, A. Thejaswi and N. Srividya (16-17 February 2018) Fasting as a healing therapy –Ayurvedic perspective and scientific evidence. . In *International Conference on Specialised, Ayurvedic & Innovative Foods & Nutrition*, Sri Sathya Sai Institute of Higher Learning, Anantapur ,
10. V. Harshini, Sai Gayathri H., Gracy Rai and N. Srividya (16-17 February 2018) Ancient food culture-What and why? In *International Conference on Specialised, Ayurvedic & Innovative Foods & Nutrition*, Sri Sathya Sai Institute of Higher Learning, Anantapur.
11. Manjula D. Ghoola and N. Srividya (7-9 December 2017) Tropical microgreens: A nutritional and antioxidant-rich novel produce for enhancing rural and household food and nutritional security. In *26th ICFoST, Association of Food Scientists & Technologists (India)*, , CSIR- Indian Institute of Chemical Technology, Hyderabad.
12. Susmitha T., Manjula D. Ghoola and N. Srividya (7-9 December 2017) Effect of temperature, packaging and edible coating on the postharvest quality and shelf life of roselle (*Hibiscus sabdariffa* L.) microgreens. In *26th ICFoST, Association of Food Scientists & Technologists (India)*, CSIR- Indian Institute of Chemical Technology, Hyderabad.
13. Uma Bharathi S.T., Swati Shende, Ashrita C.H., Manjula D. Ghoola and N. Srividya (7-9 December 2017) Nutritional profile, phytochemical content and agronomic biofortification studies in sunflower (*Helianthus annuus*) sprouts . In *26th ICFoST, Association of Food Scientists & Technologists (India)*, , CSIR- Indian Institute of Chemical Technology, Hyderabad.
14. Manjula D. Ghoola and N. Srividya (2-3 October 2017) Elemental composition, phytochemical content and in vitro antioxidant activity of fenugreek micro-, baby- and mature leaves. In *17th Global Dieticians and Nutritionists Annual Meeting*, Kuala Lumpur, Malaysia.
15. Keerthana H K & Sriyaya M (15 to 16 Sep 2017) Recent developments in osmotic dehydration technique for improving the post-harvest quality of fruits and vegetables. In *National Conference on Advanced research in Pharmaceutical and Chemical Sciences -Emerging Challenges in practice*, Oil Technological and Pharmaceutical Research Institute, JNTU, Anantapur, Conference Proceedings; pp 109
16. Vijaya M, Sriyaya M. (07 to 09 Dec 2017) Effectiveness of using osmo active infusion substances alternative to sucrose in osmotic dehydration of selected fruits. In *ICFoST, National Conference on " Food and Nutrition Challenges: Role of Food Science and Technology"*, IICT, Hyderabad, Conference Proceedings; pp

17. Keerthana H. K. and M. Srijaya (16 to 17 Feb 2018) Influence of process parameters on mass transfer rates during osmotic dehydration of jamun fruit (*Syzygium cumini*. L.) skeels using dynamic infusion technique. In *International Conference on "Specialized, Ayurvedic and Innovative Food and Nutrition"*, Department of Food and Nutritional Sciences, Anantapur Campus., Conference Proceedings; pp 76
18. Sailavanya K. and Srijaya M (16 to 17 Feb 2018) Development and storage stability of functional guava flakes. In *International Conference on "Specialized, Ayurvedic and Innovative Food and Nutrition"*, Department of Food and Nutritional Sciences, Anantapur Campus., Conference Proceedings ; pp 84
19. Amrutha Sai Vadde and M. Srijaya (16 to 17 Feb 2018) Assessment of nutritional status among school going children (7-11 years) of Anantapur district. In *International Conference on "Specialized, Ayurvedic and Innovative Food and Nutrition"*, Department of Food and Nutritional Sciences, Anantapur Campus., Conference Proceedings ; pp 53
20. G. Pushpalatha, Iyer G. Ananya, G. Santoshi and M. Srijaya (16 to 17 Feb 2018) Emerging trends in food processing. In *International Conference on "Specialized, Ayurvedic and Innovative Food and Nutrition"*, Department of Food and Nutritional Sciences, Anantapur Campus., Conference Proceedings ; pp 77
21. Varsha R.Murkhandi and Sumana.A (15 and 16 Sep 2017) Evaluation of Shoe (*Hibiscus Rosa-Sinensis*.) flower extract as biocolorant in a food model system. Oral presentation. In *Advanced Research In Pharmaceutical And Chemical Sciences- Emerging Challenges In Practice (Ncarpc-Ecp2k17)*, Jntua-Otpri, Anantapur, p107
22. E.Vijaya and Sumana.A. (15 and 16 Sep 2017) Prospects for biocolourants- The next generation food additives in food industry. . In *Advanced Research In Pharmaceutical And Chemical Sciences- Emerging Challenges In Practice (Ncarpc-Ecp2k17)*, Jntua-Otpri, Anantapur, p107
23. Kritika .S and Sumana A (16 and 17 Feb 2018) A comparative study of conventional processing methods of wheat-horse gram-An underutilised legume. In *International conference on Specialised Ayurvedic and Innovative Foods and Nutrition.*, Sri Sathya Sai Institute of Higher learning, Anantapur., p 71
24. Gayathri.S and Sumana A. (16 and 17 Feb 2018) Acceptability and Consumption of dark chocolates- An Indian perspective. In *International conference on Specialised Ayurvedic and Innovative Foods and Nutrition.*, Sri Sathya Sai Institute of Higher learning, Anantapur, p51
25. Anjali R, Narmada R, Pavani L, Sai Priya K.S and Sumana A (16 and 17 Feb 2018) Management of food needs and nutritional requirements in emergency situations. In *International conference on Specialised Ayurvedic and Innovative Foods and Nutrition*, International conference on Specialised Ayurvedic and Innovative Foods and Nutrition., p57
26. A.Padmaja, K.Nageswari and NBL Prasad (15 and 16 September, 2017) Development of value added food products from green gram. In *National Conference on Advanced research in pharmaceutical and chemical sciences-emerging challenges in Practice (NCARPC-ECP 2K17)*, Oil Technological and Pharmaceutical Research Institute(OTPRI), Anantapur, Souvenir of National Conference on Advanced research in pharmaceutical and chemical sciences-emerging challenges in Practice (NCARPC-ECP 2K17) FTO-3, Pg.No.106
27. Bhawana Rai and A.Padmaja (15 and 16 September, 2017) Development of passion fruit jelly. In *National Conference on Advanced research in pharmaceutical and chemical sciences-emerging challenges in Practice (NCARPC-ECP 2K17)*, Oil Technological and Pharmaceutical Research Institute (OTPRI), Anantapur, Souvenir of National Conference on Advanced research in pharmaceutical and chemical sciences-emerging challenges in Practice (NCARPC-ECP 2K17) FTP-6, Pg.No.113
28. N.Saiharini and A.Padmaja (07 to 09 Dec 2017) Extraction and characterization of passion fruit peel. In *26th Indian Convention of Food Scientists and Technologists (ICFoST XXVI) Food and Nutrition Challenges:Role of Food Science and Technology*, CSIR- Indian Institute of Chemical Technology, Hyderabad, Souvenir of 26th Indian Convention of Food Scientists and Technologists (ICFoST XXVI): FVT 43, Pg.No.150

29. A. Pavani, Naresh K. and Padmaja A. (16 and 17 February, 2018) Development of cereal bar enriched with fruit and peanut meal. In *International Conference - Specialised Ayurvedic and Innovative Foods and Nutri Summit (SAI-FNS- 2018)*, Sri Sathya Sai Institute of Higher Learning, Anantapur , Souvenir of International Conference - Specialised Ayurvedic and Innovative Foods and Nutri Summit (SAI-FNS- 2018)P-IF-03, Pg.81
30. N.Saiharini and A.Padmaja (16 and 17 February, 2018) Study on nutrient composition and invitro bio active properties of passion fruit peel. In *International Conference - Specialised Ayurvedic and Innovative Foods and Nutri Summit (SAI-FNS- 2018)*, Sri Sathya Sai Institute of Higher Learning, Anantapur, Souvenir of International Conference - Specialised Ayurvedic and Innovative Foods and Nutriti Summit (SAI-FNS- 2018) P-FPP-09, Pg.No. 75
31. B. Sai Suruthi, P. Jeevana Sindhu, U. Sai Mounica, Sparsh Sumniron Subba and A.Padmaja (16 and 17 February, 2018) Current regulations for food labeling in India. In *International Conference - Specialised Ayurvedic and Innovative Foods and Nutri Summit (SAI-FNS- 2018)*, Sri Sathya Sai Institute of Higher Learning, Anantapur, Souvenir of International Conference - Specialised Ayurvedic and Innovative Foods and Nutriti Summit (SAI-FNS- 2018) P-FPP-13, Pg.No. 78
32. K. Avantika & Meera M (15 and 16 September, 2017) Development of gluten free cookies for better health. In *National conference on Advanced research in Pharmaceutical and chemical sciences- Emerging challenges in Practice (NCARCP-ECP 2K17)*, Oil Technology & Pharmaceutical Research Institute (OTPRI), Anantapur-515001, Conference proceedings:pp-110
33. Asharani Pichika & Meera M (15 and 16 September, 2017) Flax seed and Garden-cress seed Incorporated snack food. In *National conference on Advanced research in Pharmaceutical and chemical sciences- Emerging challenges in Practice (NCARCP-ECP 2K17)*, Oil Technology & Pharmaceutical Research Institute (OTPRI), Anantapur-515001, Conference proceedings: pp-111
34. A. Lakshmi & Meera M (15 and 16 September, 2017) Analysis of Millet incorporated recipes. In *National conference on Advanced research in Pharmaceutical and chemical sciences- Emerging challenges in Practice (NCARCP-ECP 2K17)*, Oil Technology & Pharmaceutical Research Institute (OTPRI), Anantapur-515001, Conference proceedings:pp-111
35. Meera M & Vimalakumari (15 and 16 September, 2017) Shelf Stability of underutilized green leafy vegetable incorporated dehydrated products. In *National conference on Advanced research in Pharmaceutical and chemical sciences- Emerging challenges in Practice (NCARCP-ECP 2K17)*, Oil Technology & Pharmaceutical Research Institute (OTPRI), Anantapur-515001, Conference proceedings:pp-112
36. Gayatri S & Meera M (15 and 16 September, 2017) Storage stability millet based papaya enriched cookies. In *National conference on Advanced research in Pharmaceutical and chemical sciences- Emerging challenges in Practice (NCARCP-ECP 2K17)*, Oil Technology & Pharmaceutical Research Institute (OTPRI), Anantapur-515001, Conference proceedings:pp-112
37. Gayathri S and Meera M (7-9, Dec 2017) Development of millet based cookies for better health. In *26th Indian convention of Food Scientist and Technologists*, CSIR- Indian Institute Chemical Technology, Hyderabad. DATE: 7-9, Dec 2017. , Conference proceedings:pp-100
38. Avantika K and Meera M (17th Feb 2018) Development and quality evaluation of quinoa incorporated composite flour cookies. In *International conference on specialized ayurvedic& innovative Foods & Nutrition*, Department of Food & Nutritional Sciences, Sri Sathya Sai Institute of Higher Learning Anantapur., Conference proceedings:pp-pp-86
39. Lakshmi A and Meera M (17th Feb 2018) Development and quality assessment of banana incorporated millet based functional cookies. In *International conference on specialized ayurvedic& innovative Foods & Nutrition*, Department of Food & Nutritional Sciences, Sri Sathya Sai Institute of Higher Learning Anantapur, Conference proceedings:pp-pp-85
40. D Tejashri and Meera M (17th Feb 2018) Formulation, nutrient analysis and acceptability of recipes prepared using composite millet flour. In *International conference on specialized ayurvedic& innovative Foods & Nutrition*, Department of Food & Nutritional Sciences, Sri Sathya Sai Institute of Higher Learning Anantapur., Conference proceedings:pp-pp-46

Annexure-III contd...

41. S Gayatri and Meera M (17th Feb 2018) Development, analysis and consumer education of millet based functional foods. In *International conference on specialized ayurvedic & innovative Foods & Nutrition*, Department of Food & Nutritional Sciences, Sri Sathya Sai Institute of Higher Learning Anantapur., Conference proceedings:pp-pp-82
42. Asharani P and Meera M (17th Feb 2018) Storage stability of garden cress seed and fax seed flour incorporated millet-based cookies. In *International conference on specialized ayurvedic & innovative Foods & Nutrition*, Department of Food & Nutritional Sciences, Sri Sathya Sai Institute of Higher Learning Anantapur., Conference proceedings:pp-pp-71
43. Sai Sharanya P.V, Prasamsa Rai, jyothi N. S, Sai Priya G and Meera M (17th Feb 2018) Nutrition education strategies. In *International conference on specialized ayurvedic & innovative Foods & Nutrition*, Department of Food & Nutritional Sciences, Sri Sathya Sai Institute of Higher Learning Anantapur., Conference proceedings:pp-pp-71
44. Lakshmi Priya and Tapasya Anand (15 and 16 September, 2017) Effect of different drying techniques on certain phytochemicals and antioxidant activity of two fruit samples. In *National Conference on Advanced Research in Pharmaceutical and Chemical Sciences- Emerging Challenges in Practice [NCARPC-ECP 2 K17]*, Oil Technological and Pharmaceutical Research Institute (OTRI), JNTU, Anantapur.
45. Lakshmi Priya and Tapasya Anand (16th and 17th February, 2018) Development of low cost millet based RTE mix for type 2 diabetic subjects. In *International Conference on Specialised, Ayurvedic and Innovative Foods and Nutrition (SAIFNS 2018)*, Sri Sathya Sai Institute of Higher Learning, Anantapur, Andhra Pradesh ,
46. Harshini Sanku, Deepika Pradhan, Sai Darshna, Mrunalini Madan and Tapasya Anand. (16th and 17th February, 2018) Role of Indian traditional fermented foods in maintaining good gut health. In *International Conference on Specialised, Ayurvedic and Innovative Foods and Nutrition (SAIFNS 2018)*, Sri Sathya Sai Institute of Higher Learning, Anantapur, Andhra Pradesh.

Economics

1. Dr.M.R.Geetha Bala (29th & 30th January 2018) “GST and the reason why it is making Business and Taxes simpler and easier.” In *National Seminar on Goods and Services tax, Income Tax, Financial Markets and Services (GSTIFMS-2018)* , Sri Sai Baba National College, Anantapuramu,
2. Dr.M.R.Geetha Bala (6th & 7th February 2018.) “Constitution of India with special provisions for the Welfare of Women” organized be Women Development Cell, In *UGC sponsored two day National Seminar on Role Of Women On Contemporary Issues and Challenges-National Perspective*, Government Arts College (A), Anantapuramu
3. Dr.M.R.Geetha Bala (29 & 30 January) “What is GST and the reason why it is making business and taxes simpler and easier?”, In *"Innovative Strategies, Advances and Challenges in Commerce and Management"*, Savithri Bai Phule, Pune University.
4. Dr.M.R.Geetha Bala (16th to 18th March 2018) “Changes of Women Labour, in Labour Market during the Post Reform Period”, In *International Seminar on Developmental Challenges of India after Twenty Five Years of Economic Reforms*, Department of Economics Banaras Hindu University.
5. Dr.M.R.Geetha Bala, Lecture delivered on the topic “Constitutional and Legal Rights of Women in India”. In the cultural class in the auditorium in 2017. Delivered a Guest Lecture on the topic “Inflation and Business Cycles” in GATES Institute of Technology, Gooty, Aanantapur Dist, December 2017.
6. Dr.M.R.Geetha Bala, Lecture delivered on Topic “Balance of Payments” in colloquium of the department of Commerce and Management, March 2018.

Education

1. Invited as resource person to the National seminar on Advanced Trends in Value Education organised by University college of Education, Sri Krishnadevaraya University, Anantapur on 5th December 2017. Delivered a talk on Value Education and Role of Teachers. (*Prof. (Miss) Madhu Kapani*)

2. delivered a talk on "value integration through mathematics" in national seminar on " Advanced trends in value education (ATVE-2017) organised by university college of Education, S.K.university, Anantapur on 5th December, 2017 (Dr. (Mrs.) P Lavanya)

English Language & Literature

1. Behera, A K (May 2018) Language of Communication in Technical Education. In *ELTAI-Sambhram Chapter*, Sambhram Academy, Bangalore.
2. Siddhartha R and Dr. Rani P.L. (January 2017) Indian Cricket in the context of colonisation. In *Fourth International Conference on Language, Literature and Society*, Singapore, Yes

Hindi

1. Invited as guest speaker to address the Faculty, administrators and the trustees of Sri Sathya Sai Gramin Jagriti project at Ambala, Haryana in the month of May 2018 on the topic, "Seva as the way to True Education and Liberation" (Dr. (Miss) Kiron Bala Arora)

Telugu Language & Literature

1. Dr.(Smt) M. Praphulla (21 Nov 2017) Sadasiva Brahmendrkruthulu - Oka adhyayanam (Paper presented through one of the organizing members). In *A national seminar on "preservation and Promotion of Samskritham, Sangeetham, Naatakam & Naatyam"*, Veda Samskruti Samithi, Malkajgiri, Hyderabad,
2. Dr.(Smt) M. Praphulla (21 & 22 Feb 2018) Andubatulo unna sankethika vijnanam - Andipuchukune theeru. In *An International Seminar on "ITC and language learning: Trends, Issues And challenges"*, St. Ann's College for Women, Hyderabad.
3. Dr.(Smt) M. Praphulla (14 & 15 Mar 2018) Kiratharjuneeya mahakavye manaveeya moolyaani (paper is presented by co participant). In *National seminar on " Samskrithaandhra hindi Bhashaasu Ramayana Bharatha kathaadvayam - Manaveeya moolyaani"*, SSBN Degree college (autonomous), Anantapuram.
4. Invited as a guest speaker to talk on the topic " Telugu Bhasha - vaisishtyamu" in Govt. Degree College, Uravakonda, on 29 August 2017 (Dr. (Mrs.) M Praphulla)



SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(Deemed to be University)

Research Publications 2017/18

Mathematics and Computer Science

JOURNAL PAPERS

- Srinath M S and V Chandrasekaran, Isogeny-based Quantum-resistant Undeniable Blind Signature Scheme, ***International Journal of Newtork Security***, 20(1), 9-18, (2018).
- Saranya C R, K S P Sowndarya and Y Lakshmi Naidu, A linear-time Algorithm for paired Neighbourhood Set on Circular-Arc Graphs, ***International Journal of Mathematics Trends and Technology***, 51(1), 12-15, (2017).
- P Murali Krishna and Pallav Kumar Baruah, High Performance Kafka Powered Scalable Real Time Rule engine Model for event stream processing, ***International Journal of Scientific & Engineering Research***, 9(2), 1830-1836, (2018).
- J Bhanu Teja, Pallav Kumar Baruah, Satya Sai Mudigonda and Phani Krishna Kandala, Application of High Performance Computing for Calculating Reserves for a Company, ***International Journal of Scientific & Engineering Research***, 9(2), 1821-1830, (2018).
- Ramesh Sharma, S Balasubramanian and N Uday Kiran, Some Remarks on Ricci Solitons, ***Journal of Geometry***, 108(3), 1031-1037, (2017).
- Arka Ghosh, A Hybrid Method for selection of tile sizes, ***Journal of Electronics, Electrical and Computational Systems***, 6(8), 458-466, (2017).
- A N Sai Prasanna R, Raghunatha Sarma and S Balasubramanian, A Study on Improving Branch Prediction Accuracy in the context of Conditional Branches, ***International Journal of Engineering Technology Science and Research***, 4(8), 654-662, (2017).
- K B Chand and K R Tyada, Constrained Shape Preserving Rational Cubic Fractal Interpolation Functions, ***Rocky Mountain Journal of Mathematics***, 48(1), 75-105, (2018).
- K B Chand and K R Tyada, Shape preserving constrained and monotonic rational quintic fractal interpolation functions, ***International Journal of Advances in Engineering Sciences and Applied Mathematics***, (2018). DOI: doi.org/10.1007/s12572-018-0207-z

CONFERENCE PAPERS

- V Sai Raam, S Balasubramaniyan and Darshan Gera, Multiple Face-Component Analysis: A Unified Approach towards Facial Recognition Tasks, ***2nd International Conference on Man and Machine Interfacing, IEEE MAMI 2017*** (21-23 Dec 2017) Bhubaneswar, Odisha.
- Manuj Subhankar Sahoo, Pallav Kumar Baruah, HBasechainDB – A Scalable Blockchain Framework on Hadoop Ecosystem, ***Asian Conference on Supercomputing Frontiers, SCFA 2018*** (27 Mar 2018) Singapore.

- B Abhinay, K Anirudh, J Bhanu Teja and Pallav Kumar Baruah, A Fast GPU-based Global Sampling Method for Alpha Matting on High Resolution Images, **IEEE International Conference on High Performance Computing, Data, and Analytics, Student Research Symposium** (18 Dec 2017) Jaipur, India.
- Manuj Subhankar Sahoo, Digendra Rai, P Sai Laskhman, Pallav Kumar Baruah and Adarsh Saraf, HBasechianDB2.0 - A Scalable Blockchain Framework on Hadoop Ecosystem, **IEEE International Conference on High Performance Computing, Data, and Analytics, Student Research Symposium** (18 Dec 2017) Jaipur, India.
- Manoj Kumar, Digendra Rai, Abhishek Gupta, Pallav Kumar Baruah, Parallel Implementation of Screen Content Video Compression based on Block Classification Scheme, **IEEE International Conference on High Performance Computing, Data, and Analytics, Student Research Symposium** (18 Dec 2017) Jaipur, India.
- P Murali Krishna and Pallav Kumar Baruah, Scalable Real Time Rule Engine Model, **IEEE International Conference on High Performance Computing, Data, and Analytics, Student Research Symposium** (18 Dec 2017) Jaipur, India.
- K Sathyanarayanan, Kota Chetan Satyanarayan, R Sai Varun and Pallav Kumar Baruah, Parallel Implementation of Neighbourhood Repulsed Metric Learning, **IEEE International Conference on High Performance Computing, Data, and Analytics, Student Research Symposium** (18 Dec 2017) Jaipur, India.
- B V K Bharadwaj and Pallav Kumar Baruah, Oscillation Criteria for Higher order Coupled Systems, **International Conference on Applied Analysis, Mathematical Modeling and Computing Techniques (ICAAMMCT 2018)** (15-17 Mar 2018) Gandhigram Rural Institute, Gandhigram, Tamil Nadu.
- Anil Kumar Reddy, Sai Vikas, Raghunatha Sarma, Gurudat Shenoy and Ravi Kumar, Segmentation and Classification of CT Renal Images using Deep Networks, **ICSCSP-2018: Springer International Conference on Soft Computing and Signal Processing** (22-23 Jun 2018) Malla Reddy College of Engineering And Technology, Hyderabad.
- Sai Shyam Sharma, Sanik Thapa and Chaitanya Pavan Tanay, A Robust Colour Video Watermarking Technique using DWT, SVD and Frame Difference, **7th International Conference on Pattern Recognition and Machine Intelligence (PREMI'17)** (5-8 Dec 2017), Kolkata.
- K S P Sowndarya and Y Lakshmi Naidu, Perfect Domination for Bishops, Kings and Rooks on Square Chessboard, **International Conference on Recent Trends in Graph Theory and Combinatorics (ICRTGC-2018)** (26-29 Apr 2018) Cochin University, Kerala.

Physics

JOURNAL PAPERS

- Sai Pavan Prashanth Sadhu, Sasidhar Siddabattuni, Sai Muthukumar V and K B R Varma, Enhanced dielectric properties and energy storage density of surface engineered BCZT/PVDF-HFP nanodielectrics, **Journal of Material Science: Materials in Electronics**, 29(8), 6174-6182, (2018).
- Lakshmi Adinarayana Avinash Chunduri, Aditya Kurdekar, Sandeep Patnaik, Rajasekhar, Saikiran Aditha, Chinnakota Prathibha, and Venkataramaniah K, Single Step Synthesis of Carbon Quantum Dots from Coconut Shell: Evaluation for Antioxidant Efficacy and Hemotoxicity, **Journal of Materials Sciences and Applications**, 3(6), 83-93, (2017).
- S Sai Krishna, M Muralikrishna and R Gowrishankar, Understanding Thermoelectric behaviour of Materials using COMSOL, **Journal of Applied Physical Science International**, 9(3), 79-89, (2017).
- Sai Pavan Prashanth Sadhu, Sasidhar Siddabattuni, Bharathi Ponraj, Muralikrishna Molli, V Sai Muthukumar and K B R Varma, Enhanced dielectric properties and energy storage density of interface controlled ferroelectric BCZT-epoxy nanocomposites, **Composite Interfaces**, 24(7), 663-675, (2017).

- Murali Ravi and Siva Sankara Sai Sanagapati, A Practical Design and Implementation of a Low-Cost Platform for Real-Time Diagnostic Imaging, **IEEE Access**, 5(8), 24952-24958, (2017).
- Hari Nandakumar, Adithya K S and Shailesh Srivastava, Sub-4-micron full-field optical coherence tomography on a budget, **Sadhana**, 43(6), (2018).
- Sposito Alex J, Aditya Kurdekar, Zhao Jiangqin and Hewlett Indira, Application of nanotechnology in biosensors for enhancing pathogen detection, **WIREs Nanomed Nanobiotechnol**, (2018).
- E Rajsekhar, K L Narasimham, Aditya Kurdekar, L A Avinash Chunduri, Sandeep Patnaik and K Venkataramaniah, Mass attenuation coefficient measurements of some nanocarbon allotropes: a new hope for better low cost less-cumbersome radiation shielding over a wide energy range, **Journal of Nuclear Physics, Material Sciences, Radiation and Applications**, 5(2), 255-261, (2017).
- Sandeep Patnaik, Aditya Kurdekar, Lakshmi Adinarayana Avinash Chunduri, Chinnakoti Prathibha and K Venkataramaniah, Naproxen-Gelucire Nanoformulations for Improved Solubility and Dissolution Rate of Poorly Water-Soluble Drug Naproxen, **Journal of Drug Design and Medicinal Chemistry**, 3(6), 77-85, (2017).

CONFERENCE PAPERS

- Abhilash Achanta, Balla Ananda Rao, Sai Sundar Kandarpa, Siva Sankara Sai S, Krishna Chaitanya V and Krishna Kumar, Radio over Fiber link design for the Fronthaul of cellular communication systems, **11th IEEE International Conference on Advanced Networks and Telecommunications Systems** (17 Dec 2017) Bhubaneshwar, Odisha.
- L A Avinash Chunduri, Sandeep Patnaik, Aditya Kurdekar, Saikiran Aditha, C Prathibha and K Venkataramaniah, Single step Hydrothermal Synthesis of Amine Functionalized Carbon Quantum Dots from Citric acid for early Diagnosis of HIV Infection, **Andhra Pradesh Science Congress** (7-9 Nov 2017) Visakhapatnam, Andhra Pradesh.
- Sandeep Patnaik, L A Avinash Chunduri, Aditya Kurdekar, Saikiran Aditha, C Prathibha and K Venkataramaniah, Novel Nanoformulations for overcoming the challenge of poor water solubility of some Nonsteroidal Anti-inflammatory Drugs, **Andhra Pradesh Science Congress** (7-9 Nov 2017) Visakhapatnam, Andhra Pradesh.
- Ruman Dutta, Sai Krishna S, Gowrishankar R, Subhanu G J and Siva Sankara Sai S, Fragmentation-Aware Routing, Wavelength and Spectrum Assignment (RWSA) Scheme in Flex-grid Optical Networks, **11th IEEE International Conference on Advanced Networks and Telecommunications Systems** (17 Dec 2017) Bhubaneshwar, Odisha.
- B V Avinash, M Sai Siva Ramakrishna, Gowrishankar R and Siva Sankara Sai S, A Docker based test-bed for GMPLS simulation, **11th IEEE International Conference on Advanced Networks and Telecommunications Systems** (17 Dec 2017) Bhubaneshwar, Odisha.
- Muralikrishna Molli, Bharadwaj Chowdary, Sai Muthukumar and R Gowrishankar, Nonlinear optical transmission of nanocrystalline FeSe₂ in the ultrafast excitation regime, **International Conference on Condensed Matter and Applied Physics (ICC 2017)** (24-25 Nov 2017) Govt. Engineering College, Bikaner, Rajasthan. AIP Conference Proceedings 1953, 030273 (2018). DOI: doi.org/10.1063/1.5032608
- Muralikrishna Molli, Bharadwaj Chowdary, Sai Muthukumar and R Gowrishankar, Nonlinear Optical transmission of Nanocrystalline Cu₂Se in the ultrafast excitation regime, **International Workshop on Advanced Materials (IWAM 2017)** (19-21 Dec 2017) National Institute of Science and Technology, Berhampur, Odisha.
- S Sairam, Ranjan Rai and Muralikrishna Molli, Studies on temperature coefficient of resistivity of Cu₂Se - V₂O₅ nanocomposite, **International Conference on Condensed Matter and Applied Physics (ICC 2017)** (24-25 Nov 2017) Govt. Engineering College, Bikaner, Rajasthan. AIP Conference Proceedings 1953, 030266 (2018). DOI: doi.org/10.1063/1.5032601

- Bharadwaj Chowdary, Kaushik Jayaraman and Muralikrishna Molli, Effect of sulfur doping on thermoelectric properties of Sodium Tantalate - A first-principles study, **International Conference on Condensed Matter and Applied Physics (ICC 2017)** (24-25 Nov 2017) Govt. Engineering College, Bikaner, Rajasthan. AIP Conference Proceedings: 1953, 110005 (2018). DOI: doi.org/10.1063/1.5033030
- Murali Ravi, Shashidhara TG, Angu Sewa, Sivaramakrishnan S and Siva Sankara Sai S, MBMR: An efficient Image Reconstruction technique for rapid algorithmic implementation, **IEEE International Conference on High Performance Computing, Data, and Analytics** (18 Dec 2017) Jaipur, India.
- Pamarti Viswanath, Sadhu Sai Pavan Prashanth, Muralikrishna Molli, Jaschin Prem Wicram, and Sai Muthukumar V, Optical and vibrational spectroscopy of Ba_{0.85}Ca_{0.15}Zr_{0.1}Ti_{0.9}O₃ modified lithium borate glass ceramics, **62nd DAE Solid State Physics Symposium** (26-30 Dec 2017) Bhabha Atomic Research Centre, Mumbai. AIP Conference Proceedings: 1942, 070035 (2018). DOI: doi.org/10.1063/1.5028833
- Gowrishankar R and P C Sood, Two-particle structure in odd-odd nucleus, **62nd DAE-BRNS Symposium on Nuclear Physics** (20-24 Dec 2017) Thapar University, Patiala, Punjab. Conference Proceedings: 62 (2017), 134-135.
- P C Sood, and Gowrishankar R, Non-Coriolis Band Mixing in Deformed Nuclei, **62nd DAE-BRNS Symposium on Nuclear Physics** (20-24 Dec 2017) Thapar University, Patiala, Punjab. Conference Proceedings: 62 (2017), 214-215.

Chemistry

JOURNAL PAPERS

- Swayamsiddha Kar, Sai Manohar Chelli, Sai Giridhar Sarma, Kandanur, Srinivas Nanduri, Siva Kumar Belliraj, and Nageswara Rao Golakoti, *In silico* Modeling of New C-12 Substituted-14-Deoxy-Andrographolide Derivatives as Potent Anticancer Leads, **Journal of Pharmacology & Clinical Toxicology**, 5(4), 1083-1089, (2017).
- Sai Giridhar Sairam, Chelli Janardhana, Srikanth Sola, Asha Barooah, Sai Kiran Javvaji, Jiten Jaipuria, Vijayalakshmi Venkateshan and Carani Balaraman Sanjeevi, The role of Lp-PLA2 and biochemistry parameters as potential biomarkers of coronary artery disease in Asian South Indians: a case-control study, **Cardiovascular Therapy and Diagnosis**, 7(6), 589-597, (2017).
- Pradeep Kumar Badiya, Sai Gourang Patnaik, Venkatesh Srinivasan, Narendra Reddy, Chelli Sai Manohar, Raman Vedarajan, Noriyoshi Mastumi, Siva Kumar Belliraj and Sai Sathish Ramamurthy, Ag-protein plasmonic architectures for surface plasmon-coupled emission enhancements and Fabry-Perot mode-coupled directional fluorescence emission, **Chemical Physics Letters**, 685, 139-145, (2017).
- Chelli Sai Manohar, A Manikandan, P Sridhar, A Sivakumar, B Siva Kumar and Sabbasani Rajasekhara Reddy, Drug repurposing of novel quinoline acetohydrazide derivatives as potent COX-2 inhibitors and anti-cancer agents, **Journal of Molecular Structure**, 1154, 437-444, (2018).
- Pradeep Kumar Badiya, Jayakumar T P, Venkatesh S and Sai Sathish Ramamurthy, Spacer Layer Engineering for Ultrasensitive Hg(II) Detection on Surface Plasmon Coupled Emission Platform, **Nanotechnology Reviews**, 6 (4), 331-338, (2017).
- Manne Anupam Kumar, Sai Gourang Patnaik, V Lakshminarayanan and Sai Sathish Ramamurthy, Electrochemical Determination of Ethanol by a Palladium Modified Graphene Nanocomposite Glassy Carbon Electrode, **Analytical Letters**, 50(2), 350-363, (2017).
- Pradeep Kumar Badiya, Venkatesh Srinivasan, Sai Prasad Naik, Beбето Rai, Narendra Reddy, S Prathap Chandran, V Sai Muthukumar, Muralikrishna Molli and Sai Sathish Ramamurthy, Low-Cost Plasmonic Carbon Spacer for Surface Plasmon-Coupled Emission Enhancements and Ethanol Detection: a Smartphone Approach, **Plasmonics**, 13(2), 519-524, (2018).

- Nehra A, Yarramala D S, Bandaru S and Rao C P, Cyclohexyl-diimine capped lower rim 1,3-di-derivatized calix[4]arene conjugate as sensor for Al³⁺ by spectroscopy, microscopy, titration calorimetry and DFT computations, **Supramolecular Chemistry**, 30(7), 619-626, (2018).
- Sai Giridhar Sairam, Chelli Janardhana, Srikanth Sola, Asha Barooah, Sai Kiran Javvaji, Jiten Jaipuria, Vijayalakshmi Venkateshan and Carani Balaraman Sanjeevi, Diagnostic role and association of Lp-PLA2 with coronary artery disease in a South Indian population, **Indian Heart Journal**, 69(2), S13-S14, (2017).
- Naga Sai Visweswar Kambhampati, Swayamsiddha Kar, Sai Siva Kumar Pinnepalli, Janardhana Chelli and Mukesh Doble, Microbial cyclic β -(1 \rightarrow 3),(1 \rightarrow 6)-glucans as potential drug carriers: Interaction studies between cyclic β -glucans isolated from *Bradyrhizobium japonicum* and betulinic acid, **Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy**, 203, 494-500, (2018).
- Swayamsiddha Kar, Rohit Kumar Mishra, Ashutosh Pathak, Anupam Dikshit and G Nageswara Rao, *In silico* modeling and synthesis of phenyl and thienyl analogs of chalcones for potential leads as anti-bacterial agents, **Journal of Molecular Structure**, 1156, 433-440, (2018).
- Manne Anupam Kumar, Sai Gourang Patnaik, V Lakshminarayanan and Sai Sathish Ramamurthy, Synergistic Hybrid Catalyst for Ethanol Detection: Enhanced Performance of Platinum Palladium Bimetallic Nanoparticles Decorated Graphene on Glassy Carbon Electrode, **Journal of Analytical Chemistry**, 73(3), 266-276, (2018).
- Sasidhar Siddabattuni, Sri Harsha Akella, Abilash Gangula, Sivakumar B and L A Avinash Chunduri, Dielectric Properties Study of Surface Engineered NanoTiO₂/Epoxy Composites, **Bulletin of Materials Science**, 41(13), 1526, (2018).
- G Krishna Prasad, S S P Prashanth, S Srivastava, G Nageswara Rao, D Rajesh Babu, Synthesis, characterization, second and third order non-linear optical properties and luminescence properties of 1,10-phenanthroline-2,9-di(carboxaldehyde phenylhydrazone) and its transition metal complexes, **Open Chemistry**, 15(1), 283-292, (2017).
- Krishna Prasad Gannavarapu, Megha Thakkar, Sidhartha Veerapaga, Liping Wei, Rajesh Babu Dandamudi and Somenath Mitra, Novel diatom-FeOx composite as highly active catalyst in photodegradation of Rhodamine-6G, **Nanotechnology Reviews**, 7(3), 247-255, (2018). DOI: doi.org/10.1515/ntrev-2017-0218
- Swayamsiddha Kar, Adithya K S, Pruthvik Shankar, Jagadeesh Babu N, Shailesh Srivastava and Nageswara Rao G, Nonlinear optical studies and structure-activity relationship of chalcone derivatives with *in silico* insights, **Journal of Molecular Structure (Elsevier)**, 1139, 294-302, (2017).
- Kandamur S G S, Nanduri S and Golakoti N R, Synthesis and biological evaluation of new C-12(α/β)-(N-) sulfamoyl-phenylamino-14-deoxy-andrographolide derivatives as potent anti-cancer agents, **Bioorganic & Medicinal Chemistry Letters**, 27(13), 2854-2862.

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- B Siva Kumar and Thota Sai Praneeth, Groundnut Shell as renewable alternative source for biofuels, carbon dots and ultracapacitors, **105th Annual Session of the Indian Science Congress Association** (16-20 Mar 2018) Manipur University, Imphal, Manipur.
- Sahida Sharma and B Andallu, Heavy metals in soil, water, vegetables and fruits in the fields close to cement and slab industries in Anantapur District, **Specialised, Ayurvedic & Innovative Nutrition** (16-17 February 2018) Sri Sathya Sai Institute of Higher Learning, Anantapur Campus, Andhra Pradesh.
- S K Belliraj, T S Praneeth and P V Vadlani, Biomass processing for renewable energy applications: Microbial consorti, **3rd Green & Sustainable Chemistry Conference** (13 May 2018) Berlin, Germany.
- Pradeep Kumar Badiya, Sai Sathish Ramamurthy, Surface Plasmon-Coupled Emission based determination of biologically and chemically important molecules, **Dr. K V Rao Research Awards 2017-18 in Physics** (17 Mar 2018) Hyderabad.

- G Krishna Prasad and D Rajesh Babu, One Pot, Microwave Assisted Green Synthesized Metals Decorated/ r-GO Hybrids as Electrocatalysts in HER, **Hydrogen Energy and related Advanced Materials (HEAM) Scientist 2018** (5 Mar 2018) University of Kerala, Trivandrum.
- Chelli Sai Manohar and B Sivakumar, Elucidating the soft spot CYP3A4 Metabolic Profiling of small molecule kinase inhibitors, **Breaking Barriers through Bioinformatics & Computational Biology** (31 Jul 2017) Supercomputing Facility for Bioinformatics and Computational Biology (SCF-Bio), IIT, Delhi.

Biosciences

JOURNAL PAPERS

- R S Sai Murali, G Nageswara Rao and R Basavaraju, Looking Through The Lens of a Conservation Biologist: Life of Medicinal Plants in the Eastern Ghats of Andhra Pradesh, India, **International Journal of Conservation Science**, 8(2), 333-347, (2017).
- Karthi S Iyer, B S Vijayakumar and A S Viswanathan, The Enigma of Biofilms, **Current Science**, 115 (2018).
- Nivedita Hariharan, Samathmika Ravi, Bulagonda Eswarappa Pradeep, Koushik Narayan Subramanyam, Bibha Choudhary, Subhashini Srinivasan and Prakash Khanchandani, A novel loss-of-function mutation in HACE1 is linked to a genetic disorder in a patient from India, **Human Genome Variation**, 5, 17061, (2018).
- Bhavani Manivannan, Deepak Gowda, Pradeep Bulagonda, Abhishek Rao, Sai Suguna Raman and Shanmuga Vadivoo Natarajan, Surveillance, Auditing, and Feedback Can Reduce Surgical Site Infection Dramatically: Toward Zero Surgical Site Infection, **Surgical Infections**, 19(3), (2018). DOI: 10.1089/sur.2017.272
- Girish T N, B E Pradeep, and Ravi Parkash, Heat and humidity induced plastic changes in body lipids and starvation resistance in the tropical fly *Zaprionus indianus* during wet and dry seasons, **Journal of Experimental Biology**, 221(9), (2018).
- Niranjana Mahalingam, Bhavani Manivannan, Balaram Khamari, Shivakumara Siddaramappa and Sudeshna Adak, Detection of antibiotic resistance determinants and their transmissibility among clinically isolated carbapenem resistant *Escherichia coli* from South India, **Medical Principles and Practice**, (2018). DOI: 10.1159/000489885
- B E Pradeep, Bhavani Manivannan, Niranjana Mahalingam, Manmath Lama, Pachi Pulusu Chanakya, Balaram Khamari, Sudhir Jadhao, Madavan Vasudevan and Valakunja Nagaraja, Comparative genomic analysis of a naturally competent *Elizabethkingia anophelis* isolated from an eye infection, **Scientific Reports**, 8(1), 8447, (2018). DOI: 10.1038/s41598-018-26874-8
- T N Girish, B E Pradeep and Ravi Parkash, *Drosophila* as a Powerful Modern Tool for Teaching Concepts in Biology and Biomedical Research, **International Journal of Zoological Investigations**, 3(1), 21-28, (2017).
- Girish T N, Pradeep B E and Ravi Parkash, Impact of Global Climate Warming on Animal Ecology and Human Health, **International Journal of Zoological Investigations**, 3(2), 179-187, (2017).
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- Sai Praneeth Thota, Sai Manohar Thota, Saikrishna Srimadh Bhagavatham, Kaja Sai Manoj, Vijaya Sayee Sai Muthukumar, Sivaramakrishnan Venketesh, Praveen V Vadlani and Siva umar Belliraj, Facile one-pot hydrothermal synthesis of stable and biocompatible fluorescent carbon dots from lemon grass herb, **IET Nanobiotechnology**, 12(2), 127-132, (2018).
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- B E Pradeep, M Bhavani, M Niranjana, Manmath Lama, P Chanakya, K Balaram, J Sudhir, V Madavan and V Nagaraja, Elizabethkingia anophelis, an emerging opportunistic pathogen involved in diverse human infections, **Infectious Diseases: Biology to Intervention Strategies**, The World Academy of Science - Regional Office for Central & South Asia (TWAS-ROCASA) (7-9 Sep 2017) Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore.
- Mukul Anand and R Basavaraju, Phytochemical profile and pharmacological potential of Tecoma stans, **National Conference on Advanced Research in Pharmaceutical and Chemical Sciences - Emerging Challenges in Practice** (15-16 Sep 2017) Jawaharlal Nehru Technology University - Oil Technological and Pharmaceutical Research Institute (JNTU-OTPRI), Anantapur, Andhra Pradesh.
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Food & Nutritional Sciences

JOURNAL PAPERS

- Shobha IR and Andallu B, Antioxidant, antidiabetic and hypolipidemic effects of aniseeds (*Pimpinella anisum* L.): *In vitro* and *in vivo* studies, **Journal of Complimentary Medicine and Alternative Healthcare**, 5(2), 2017.
- Ghoola M D and Srividya N, Storage effects on phytochemicals, antioxidant activity and sensory quality of fenugreek (*Trigonella foenum-graecum* L.) microgreens and mature leaves, **International Journal of Food and Nutritional Science**, 6(4), 59-68, (2017).
- M Srijaya and B Shanthi Priya, Impact of gamma irradiation and osmotic dehydration on quality characteristics of guava (*Psidium guajava*) slices, **Asian Journal of Dairy and Food Research**, 36(3), 197-205, (2017).
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- Sumana A and Aruna M, Formulation and quality evaluation of agathi (*Sesbania grandiflora* (L.) Poir) leaves enriched pizza base a healthier substitute for the regular pizza base, **International Journal of Home Science**, 3 (2), 383-386, (2017).
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- M Praphulla, Sadasiva Brahmendrkruthulu - Oka adhyayanam, **A national seminar on Preservation and Promotion of Samskritham, Sangeetham, Naatakam & Naatyam** (21 Nov 2017) Veda Samskruti Samithi, Hyderabad.
- M Praphulla, Kiratharjuneeya mahakavye manaveeya moolyaani, **National seminar on Samskrithaandhraahindi Bhashaasu Ramayana Bharatha kathaadvayam - Manaveeya moolyaani** (14-15 Mar 2018) Sri Sai Baba National Degree College, Anantapur.

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- N Venkatesha Rao, Commentaries of Kamballuru Ramachandra Teertha, **Tatvachandrika**, 25(2), 10-11, (2018).
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- N Venkatesha Rao, Gurumevabhigacet., **Tatvachandrika**, 25(6), 10-11, (2018).
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SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(Deemed to be University)

Research Projects 2017/18

SSSIHL continues to pursue needs-based research that will help alleviate problems affecting the poorer sections of society. During the academic year 2017/18, the total value of ongoing projects at the University was ₹8 Crores.

Mathematics and Computer Science

Big Data Analytics and High Performance Computing

Maestro Technology, USA

₹90 Lakhs

Physics

FIST (Fund for Improvement of Science & Teaching Infrastructure)

Department of Science & Technology (DST)

₹189 Lakhs

Research Based Reforms in Physics Instruction: Classroom and Laboratory

Vision Group on Science and Technology (VGST), DST, Govt. Karnataka

₹30 Lakhs

Design and Development of Small Organ Imaging Gamma Camera System

DST

₹90.67 Lakhs

Chemistry

Synthesis of novel Andrographolide derivatives as potential anticancer and antibacterial agents

Council of Scientific and Industrial Research (CSIR)

₹20 Lakhs

Defluoridation of Water by Polymer-metal Ion Nano-composites: Synthesis, Characterization and their Application Studies

Science and Engineering Research Board (SERB)

₹19.2 Lakhs

Surface Plasmon-Coupled Emission based Benchtop Device for Cardiac Troponin T Quantification

DST – Instrumentation Development Programme (IDP) Technology Development Programmes (TDP)

₹45.68 Lakhs

ANIRVID: A Cellphone based Point-of-Care Diagnostic Device to Evaluate the Effect of Alternative Therapeutic Interventions on Depression and Heart Ailments

Tata Education and Development Trust

₹97 Lakhs

Development of Automated microfluidic -Surface Plasmon Coupled Emission Chip towards Real Time Protein & DNA detection

Centre for Advanced Sensor Technology, University of Maryland, USA

₹6.39 Lakhs

Biosciences

Augmenting Postgraduate Teaching & Research Facilities in Dept. of Biosciences

DST FIST

₹88 Lakhs

Detection of Antimicrobial Resistance Genes in Bacterial Cultures and Clinical Isolates

OMIX Research and Diagnostic Laboratories Pvt. Ltd.

₹2.75 Lakhs

Perturbation in Metabolic pathways might drive Avascular Necrosis of Femoral Head by modulating bone biology: Mechanisms, Potential biomarkers and therapeutic targets

DST

₹60 Lakhs

Mechanism of ATP secretion and the role of ATP-activated P2 receptors in the Microglial Inflammatory response: implications for Multiple sclerosis

Department of Biotechnology (DBT)

₹59.62 Lakhs

LABORATORIES AND EQUIPMENT AVAILABLE

I.**A. Common facilities**

Liquid Nitrogen Plant

Demineralized Water Plant for using in Research related work

Gas Bank

Bio-safety Level 1 Laboratory to do patient related research work at the Sri Sathya Sai Institute of Higher Medical Sciences (SSSIHMS) after taking approval from Institutional Ethics Committee which is already in place at the Sri Sathya Sai Institute of Higher Learning

B. Department wise**(a) Department of Mathematics and Computer Science:**

Fibre Security Lab

Computer Vision Lab

Machine Learning and Robotics Lab

(b) Department of Physics:

Linear Optics Laboratory

Nonlinear Optics Lab

Materials Science Lab

Characterization Lab

Networking Lab

Raman Spectroscopy Lab

Nuclear Physics Lab

Optoelectronics and Communication Lab

(c) Department of Chemistry:

Instrumentation Lab

Water Analysis Lab

Lab for Computational Chemistry

Molecular Bioprocessing Lab (MBL)

(d) Department of Biosciences:

Microbial Fuel Cell Lab

Fast Protein Liquid Chromatography Lab

Microbiology Lab-3

Mycology and Plant Pathology Lab

Animal Cell Culture Lab-2

Plant Tissue Culture Lab
Flow Cytometry lab
Instrumentation Lab
Bioinformatics Lab
Biochemistry Lab
Molecular Biology Lab
Research scholars Lab
Tissue Culture Lab

(e) Department of Food and Nutritional Sciences:

Biochemistry Lab
Clinical Lab
Food Science Lab
Food Quality Control Lab
Research Lab

(f) Others:

Central Computer Centre facility, English Language lab facility, Multi media Learning Centres are commonly available in all the four campuses for use by all departments

II. Central Computer Centre facility, English Language lab facility, Multi media Learning Centres are commonly available in all the four campuses for use by all departments

III. In addition to these facilities an advanced research centre is going to be functional in the next couple of months. The following are the research facilities which will be available in the Central Research Instruments Facility:

- Femto Second Laser Machining Lab
- Plasmonics Lab
- Scanning Electron Microscope (SEM)
- Transmission Electron Microscope (TEM)
- Nuclear Magnetic Resonance Spectrometer (NMR)
- Liquid chromatography–mass spectrometry / Gas Chromatography Mass Spectrometry
- Powder X-ray Diffractometer
- Vibrating Sample Magnetometer
- Optical & Thermal Characterization lab
- Advanced synthesis lab

- Functional Materials lab
- Water quality lab
- Bio Safety level-1 lab
- Liquid Nitrogen Plant
- Computational Science Lab
- Micro-fluidics lab
- Gamma Camera Lab
- Raman Microscopy lab
- Gas Bank

LIST OF EQUIPMENT AVAILABLE

IV Details of Equipment - Separately at Main Campus, Constituent Unit(s) and off-campus(s) (More than Rs. 1 lakh) (As on November 2017)

Prasanthi Nilayam Campus (Main)

Central Research Instruments Facility

Vibrating Sample Magnetometer (VSM)
X-Ray Diffractometer (XRD) and accessories
Impedance analyser
Sputtering Sysytem
Liquid Nitrogen Plant and Water Chiller
D33 measurement systems
Dilatometer and TGA DTA DSC
Laser System and Accessories: Femtosecond Laser, 10 W, < 400 fsec, Variable repetition rate 1 - 10 M hZ, 1030 nm, Optical Tables, RS 4000 series, 12 inches, Interferometric grade
3D sample translation stage
High temperature Furnace-Box type (1700 deg C)
Hydrothermal apparatus for Microwave rEactor
Q-TOF and Triple Quad Mass Spec with inlets
PE loop tracer system
BH Loop tracer, Pyroelectric & DC resistance measuring instrument
400 MHz FT-NMR spectrometer
SEM & TEM
Hot furnace
Water activity meter
Spinette magnetic stir wheel and panel
Handling equipment (Fork lift, Trolleys)
Pallet press

DLS ZETA LITESIZER™500
10 KVA UPSs
20 Computers
Liquid Nitrogen container and transfer device
Co2 Incubator, Double deep Freezer etc
Nano Drop
Real Time PCR
Compressors
Optical Beam Steering
Reagents for Mass Spec
Aspheric lens kit
Electrochemical workstation
Rotary Evaporator
Sonicator
Vortexer
AV equipment

Multimedia Learning Center

2 nos of Studio Master Amplifier 100E
Cestron controller Processor CP2E
3 nos of Sanyo LCD Projector XP 57L
3 nos of Draper Motorized Screen 8*6
Kramer Video Mixer PIP 500, S-Video Switcher, VGA Switcher
2 nos of Audiotechnica Wireless Mics
2 nos of Shure Wireless Mics
Samsung Digital Presenter
Samsung 17" LCD panel
Sanyo Projector XW55A
2 nos of 5 KVA UPS
3 nos of Altek- Slide changer
4 nos of LG Air-Conditioners

Department of Bio Sciences

Laminar Flow Bench-Horizontal
Laminar Flow Vertical
Biosafety Cabinets (Class II-A2)
Orbital shakers/Incubators
Incubators
Deep freezers -20°C (Vestfrost)
Ultra Deep Freezer -80°C (Thermo Scientific)
Chemi Doc System (Syngene)
Nikon Trinocular Microscope, Eclipse 801

Nikon Trinocular stereomicroscope Zoom
Growth Chamber Orbitex
FMI Model Online UPS System
ELISA Reader
Ultrasonic Cell Disruptor
BOD Incubators
FTIR
Digital Camera
Quantitative (Real time) and Gradient PCR - Eppendorf
Protein Purification System - FPLC
Clinical Centrifuge
Refrigerated Centrifuges
Iceflaker Machine
Projectors (Notevision - SHARP PG-A10X-A)
FACS analyser-Navios (Beckmann)
Qubit (Thermo Scientific)
UV-VIS-Fluor-Multiplate, Multi mode reader (SpectraMax M5)
UV-VIS Spectrophotometer – Thermo Scientific

BIOINFORMATICS LABORATORY:

Servers (IBM SYSTEM x3610)
17 nos of Lenovo Computers (INTEL PENTIUM DUAL CORE)
SUPER COMP. Computers (INTEL CORE2 DUO)
HP Photosmart D-7268 (PRINTER)
HP Scanjet G-3010 (SCANNER)-Non-functional
Projector (NOTEVISION- SHARP PG-A10X-A) (DEPARTMENT)
Genious Pro Version 4.5
BOOKS on BIOINFORMATICS (20)

Department of Chemistry:

HPLC1050, RI Detector, UV detector (Waters)
Electronic Balance Metler AE-163
Speed Vac. Sc. 100(SAVANT)
Organic Elemental Analyser EA-1105, Carlo Erba
Digital Polarimeter DIP-1000, JASCO
Electronic Balance AB 204-S, Mettler
GC/MS – 5995 Hewlett Packard
UV-VIS Spectrophotometer, U-2001 HITACHI
FT IR, Avatar-360 Nicolet
FAAS-AA220 Varian
Bio-Reactor (Scigenics)

Annexure-VI Contd..

Perkin Elmer Luminescence spectrometer LS 55, Plate reader accessory
Electrochemical work station
Millipore water system
Rota evaporator
Vacuum pump
Incubator cum shaker
Flash chromatography
Ion chromatography
Ocean optics spectrophotometer
UV-VIS Spectrophotometer, Shimadzu 2450
Biosafety cabinet class I
7 Workstations

Department of Physics

Fibre optics spectrometer
Empyrean Tube CU LFF
Solar Simulators
Raman Microscope with Automated motorized stage
HP GE Detector
Lasers
Liquid Crystal Cells
CZS Gamma Detector
Photonics Workshop
Monochrome CMOS Camera

Yokagawa Digital Storage Oscilloscope
Dye Laser model DYL 202
Dye Laser DYL 202 in Oscillator amplifier config
S-1700 Optical fiber parameter measuring system with K-1500 Basic fiber Optic starter unit, K-1600 standard optical fiber designer's kit., S013612 - FSM - 17S
Mini Fusion Splicer with power cord, battery charger, spare electrode.
Fiber Fusion splicer- FW 305 semi automatic splicer and accessories.
2 nos of HPGe Detectors
4 nos of Nuclear Instruments
M-1461 Detector inter. S/N 18102.
M1463 hi-perf. Detector Mod. S/N 20103.
25mm INV NG detect. Fast phosp. S/N 06102.
M1234 Spectrograph S/N 13103
RD 0033 Gra. Printer FXRS232 S/N P0022352.
HP 7440A / RS232 plotter
Nuclear Quadrupole resonance Spectrometer

2 nos of Liquid Nitrogen cooled Si(Li) Detectors
Canberra Si(Li) detector with LN2 Diwar
OPTIXPLORER:
Ti Sapphire Laser
One KTP optical parametric Oscillator
Vibration Isolation system
Ocean Optics FO Spectrometer with PC
Tunneling Electron Microscope
X-Ray Diffractometer with chiller
Raman Spectrometer
6 nos of 8085 Microprocessor Trainer Model MPS 85-3
2 nos of 8086/8088 Microprocessor Trainer
3 nos of 300C Analogue chopper
3 nos of 300 HF high frequency accessories.
3 nos of 300 DV 2 slot variable disc.
2 nos AOM 405.
2 nos of ME 40G DRIVER.
2 nos of AOM- 40N MODULATOR
2 nos of ME-40G Driver
3 nos of 1/3 B/W CCD camera
14 B/W CCD camera
E/M Apparatus
Digital Electrometer. KEITHLEY, USA.
Digital multimeter, KEITHLEY, USA.
20 nos of Digital Trainers
Tektronix Digital Storage Oscilloscope 100 MHz, 1Gs/S, 2 channel Mono display
Development system for DSP trainer TMS320C3X
Development system for DSP Trainer
Development system with 16 channel 8-bi ADC interface and power supply for
PCIDIOT
Development system with ESA31 Microcontroller
Development system with ESA31 Microcontroller
Gala Laser System
14 nos of Function Generator
2 nos of G.M Detector
2 nos of Nitrogen gas cylinder
2 nos of Newton Ring app
3 nos of He-Ne Laser.
4 nos of He-Ne Laser.
4 nos of HP Laser Jet Printer
2 nos each of DD650- 2.5 – 3, DD532 - 30 – 5, DH980 - 120 – 3
Pro QE25-SP-H-MT Joulemeter

Digital LCR meter (VLCR6).
Aplab autocompute LCR-Q meter
LMA-1 Light Modulator
2 nos of Lasermetrics retardation plates
4 nos of Liquid Nitrogen Dewar
2 nos of Liquid Nitrogen Dewar
2 nos of Scitech Lock in Amplifier
EL High intensity monochromator.
3 nos each Optical Honey comb table 3x4x4, Optical honey comb table 2x4x3,
Optical honey comb table 4x4
10 nos of Oscillator
6 nos of ASM71 PIN AA photodetector assembly
3 nos each of AFG71 PIN 10DI photodiode assembly, AFG71 PIN 10D photodiode
assembly
6 nos of ASM71 PIN 5DI photodiode assembly
10 nos of ASM71 PIN BPW34B photodiode assembly
Apparatus for recording thermoluminescence flow
818-UV detector
818-IG photosensor assy
Refractometer (Abbe) AS 17760.
SORL Fourier systems
8 nos of Spectrometer
Ultrasonic cleaner 120W
Magnetic Stirrer and pellets
11 nos of Heating Mantles and Hot plates
3 nos of Electronic Weighing Balance
4 nos of Falcon Fiber Communication kits
50 nos of Desktop PC
2 nos of 8K MCA system with emulation, TRUMP 8K MCA system with
emulation
Model 2020 Argon laser

Department of Economics

BenQ LCD Projector
OLYMPUS D 545 Dig Camera
5 nos of Netgear Wireless G USB2.0 Adaptors.
4 nos of Dell Laptops
11 nos of Desktop Computers

COMPUTER CENTER – I

64 nos of Desktop PCs
One master HUB
2 nos of LAPTOP
7 nos of Server
2 nos of Wireless routers
5 nos of Air-Conditioners

COMPUTER CENTER – II

26 nos of Desktop PCs
28 nos of Hubs meant for Language Lab

Anantapur Campus (off-Campus)

Multimedia Learning Centre Assets (Common for all)

2 nos of Projectors
Life size codec
Net worker
2 nos of Sony camera with screens
Samsung video presenter
Active board
Extron cross point 450 plus
Crestron control system
2 nos of 5 KVA UPS
2 nos each of LG AC 4 TR and LG AC 3 TR
Cisco router
Fire alarm system
LCD- data projector.PG A10X .Sharp systems business (B'lore)

Department of Biosciences

Poly cum shade house
Shimadzu HPLC isocratic System
Autoclave horizontal
Technico model
Spectrascan UV-VIS 2600
Chemito
PCR Machine (Eppendorf)
Incubator Shaker (Scigenics Biotec)

Thermo upright freezer
Model# 8605 -86 °C
Kubota cooling centrifuge

Department of Chemistry

Orion 720 A+ ionmeter+computer+magnetic stirrer

Department of Education

Copier plain paper (Xerox machine)
4 nos of Dell Desktop Computers

Department of Food and Nutritional Sciences

Colony counter
Lyophilizer
Dell optiplex 390n DT (4)
Trinocular microscope
Centrifuge model R-8C
Levibond make tintometer visual colorimeter model
Brookfield viscometer
Lyodel freeze drier
Homogenizer pressure stage
Semi-auto Blood Analyzer
Super spec UV 100 beam spectrophotometer
Head space analyzer
Color reader CR-101
Digital fruit tester model-53205
Semiauto Blood Analyser
UV vis spectrophotometer single beam 9200
Orbital shaking incubator (refrigerated)
Numeric 6KVA UPS with Exide Tubular Batteries
Emerson 10KVA UPS with Exide Tubular Batteries (6EL 66)

English Language lab

46 Computers
Active board
Robotel smart class language lab system
(Hardware Components)

Brindavan Campus (off-Campus)

Multimedia Learning Centre (Common for all)

2 nos of IP Fast Dome Camera
3 nos of Screen - Draper: Baronet 10' 8 x 6 Diagonal
3 nos of LCD Projectors: Sanyo PLC XU 57 L
Pip [Picture in Picture] 500
Polycom Vortex
Processor: Crestron system CP2E - Control system
Digital Signal processor: Model: Biamp Nexia
Cross Point (extron)
Document Camera
3 nos of 5KVA UPS

Department of Biosciences

15 nos of Laben Monocular inclined Tube Microscopes
26 nos of Compound Microscopes
Trinocular Stereo zoom Microscope and CCD Camera
31 nos of Dissection microscopes

Department of Chemistry

Rotary Evaporator
Electrochemical Workstation
PerkinElmer FTIR Spectrum Two
Melting Point Apparatus
Opto LED light power supply
Mouse Antibody
Gas Chromatograph system
AG Test Slides
LPPL2 KITS
Rotavac Valve Control Vacuum Pump
Spectrophotometer: Hitachi uv-visible
Refrigerated centrifuge
Single pan balance-Afcoset
Vacuum Rotary evaporator

5 nos of Function Generator[S3MHz]
3 nos of Oscilloscope[Aplab3702]

2 nos of Oscilloscope [Philips3206]
13 nos of Oscilloscope
12 nos of Digital trainer [Sai Jyothi]
3 nos of Lasers [Adv.Laser Sys]
8 nos of Data Acquisition System
3 nos of Color Digital Storage Oscilloscope
6 nos of Function Generator Digital[S]
6 nos of Analog-Digital Trainer
5 nos of Spectrometer ELFO H/V7 (1 minute reading)
6 nos of 8086 Microprocessor Kits+Power Supply
Absorption PC based Emmission Spectrometer

Muddenahalli Campus (Off-Campus)

60 nos of Desk Top PCs
3 nos of Lap Top, Dell
HP Server
Emerson 20 KVA UPS
Emerson 10 KVA UPS
Xerox Work Centre
8 nos of Projectors

(58 LCD Projectors in all the Campuses of the University)



SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(Deemed to be University)

Colloquia 2017/18

Interdisciplinary Science Colloquium

The Interdisciplinary Science Colloquium provides an opportunity for doctoral research scholars, teaching faculty and visiting experts to share their research experiences with one another. It breaks down barriers of communication and helps merge traditionally distinct scientific disciplines, thereby creating new opportunities for research.

All the science departments (across campuses) of the university participate, using the videoconference facility.

The topics for 2017/18 were:

DATE	PRESENTER & DESIGNATION	TOPIC
15 Jul 2017	Prof. Appa Rao, Clemson University, USA	Triboelectric Nanogenerators
22 Jul 2017	Dr. Praveen, DMACS, PN Campus, SSSIHL	Applications of Number theory in Cryptography
29 Jul 2017	Dr. Jay Bradner, Research Scientist in Medicine, Harvard and Dana Farber Cancer Institute	Open source Drug Discovery - Cancer Research - A video presentation
21 Nov 2017	Prof. Tony West, Dept. of Materials Science and Engineering, University of Sheffield, UK	Materials Chemistry of Oxide Ceramics
23 Dec 2017	Dr. P Loganathan and Prof. S Vigneswaran, Centre for Technology in Water and Wastewater (CTWW), Faculty of Engineering and Information Technology, University of Technology Sydney, Australia	Inorganic pollutants removal from water using adsorption process
7 Jan 2018	e-Shodh Sindhu Team & Thomson Reuters, Bangalore	Awareness program on Web of Sciences
11 Jan 2018	Prof. Bernd Ploss, Ernst-Abbe University of Applied Sciences Jena, Dept. of SciTec, Jena, Germany	Pyroelectric effects in ferroelectric ceramic-polymer composites
31 Jan 2018	Informatics Publishing Ltd., Bangalore	An overview of J-Gate (e-journal gateway)
9 Feb 2017	Mrs. M L Sudha, Dept. of Flour Milling, Baking & Confectionery Technology, Central Food Technological Research Institute (CFTRI), Mysore	High Fiber wheat-based products - A healthy channel
20 Feb 2018	Dr. Rajiv Kumar, Director, Corporate Innovation & Strategy, Q-Leap Academics and Consulting, Pune	Porous solids as catalysts for solvent free or on water organic transformations and Biofuels: Hope or Hype
24 Feb 2018	Dr. Aravind Vasudeva Rao, Clarion University, PA, USA	Grand Challenges: How Advances in Science and Engineering Can Make a Better World
11 March 2018	Prof. Ashok Kumar Mishra, Dean of Academic Research & Professor, Dept. of Chemistry, IIT Madras, Chennai	Overview of Socially relevant research and Incubation center at IIT Madras

Departmental Colloquia

Several professionals with specific knowledge and vast experience in their respective fields visit SSSIHL each year to share their knowledge with students, doctoral research scholars and faculty. In addition, Doctoral Research Scholars from SSSIHL are also given a chance to speak on topics related to their research. Given below are those sessions for the academic year 2017/18.

Mathematics & Computer Science

DATE	PRESENTER	DESIGNATION	TOPIC
1 June 2016	Sri Prasantha Sawhaney	Sr. VP, Smart Technologies	Three P's and Seven D's

Physics

DATE	PRESENTER	DESIGNATION	TOPIC
11 Jan 2017	Prof. Ploss Jena		Pyroelectric effects in ferroelectric ceramic-polymer composites
13 Nov 2017	A Venugopal	Associate Professor, Dept. of Condensed Matter Physics and Materials Science, TIFR, Mumbai	Plasmonics
18 Nov 2017	Lachit Saikia	Doctoral Research Scholar, Indian Institute of Science, Bangalore	Soft Matter Physics
12 Feb 2017	Satyadeep Vishwanathan	Bigtec Labs, Bigtec Private Ltd, Bangalore	Point of Care devices
12 Jun 2017	Prof. D V G L N Rao	Professor, University of Boston	Amazing story of Laser

Chemistry

DATE	PRESENTER	DESIGNATION	TOPIC
20 Jan 2018	Dr. Rajiv Kumar	Director, Corporate Innovation & Strategy, Q-Leap Academics and Consulting, Pune	Porous solids as catalysts for solvent free or on water organic transformations and Biofuels: Hope or Hype?
5 Apr 2018	Sri Sai Praneeth Thota	Doctoral Research Scholar, Dept. of Chemistry, SSSIHL	Hydrolysis of Groundnut Shell to Sugars and Biomass- derived Carbon Materials for Renewable Energy Applications

Biosciences

DATE	PRESENTER	DESIGNATION	TOPIC
5 Jul 2017	Dr. Venkata Mohan	Principal Scientist, Bioengineering and Environmental Sciences (BEES), Indian Institute of Chemical Technology (IICT), Hyderabad	Waste to Bioenergy

2-4 Aug 2017	Prof. Raj Raghupathy	Professor, Dept. of Microbiology, Faculty of Medicine and Consultant Immunologist, Mubarak Al-Kabeer Hospital, Kuwait University	Publishing scientific papers
	Prof. Ravi Prakash	Professor, Dept. of Genetics, Maharshi Dayanand University, Rohtak	Evolution of living organisms – slow or rapid?

Food & Nutritional Sciences

DATE	PRESENTER	DESIGNATION	TOPIC
2 Sep 2017	Mrs. M L Sudha	Senior Technical Officer, Flour Milling Baking and Confectionary technology Department, CFTRI, Mysore	High Fibre Wheat Based Products-A Healthy Channel
28 Sep 2017	Dr. Sunil Menon	Head, General Medicine, Sri Sathya Sai General Hospital, Prasanthi Nilayam	Nutritional Medicine
18 Feb 2018	Dr. (Mrs.) Pushkala Ramachandran Padmanabh	Senior Nutritionist, Danone Nutricia, Mumbai	Applications of International Software Tools for Community Based Nutritional Research

Management & Commerce

DATE	PRESENTER	DESIGNATION	TOPIC
17 Jun 2017	Sri Ramesh P	MD & CEO, KCTEC International Ltd, Singapore	Business Strategy
24 Jun 2017	Dr. Vineet Basotia	Global Director, Market and Commercial Analytics, G E Health Care	Extensive top management experience
30 Jun 2017	Prof. Srikandiah	Southampton Business School, University of Southampton. U K	Mindfulness
8 Jul 2017	Sri Gopa Nair		Design thinking
10 Jul 2017	Sri Siddharth		Tata Business Excellence Model
15 Jul 2017	Sri Sanjay Nagi		Integrating Sai Values into company
29 Jul 2017	Sri B Murali	Sr. VP, Nestle	Welcome back MAGGI-The Incredible Journey & Leadership Learnings.
14 Aug 2017	Sri Krish Shankar	EVP, HR, Infosys	Contemporary Issues in Human Resource Management
2 Sep 2017	Sri. K R Venkatadri	COO, Tata Rallis	Rural Marketing
9 Sep 2017	Sri M Nagesh Babu		Total Cost Management – Paradigm shift in the Indian industry
11 Sep 2017	Sri Satyadeep Chatterjee	MD Accenture, Delhi	Innovation of Marketing of FMCG
16 Sep 2017	Sri P Ramachandran	COO, Essilor India	Brand management and inclusive business catering to rural markets
20 Sep 2017	Sri P Srinivasan	Tax Consultant	GST
25 Jul 2016	Sri K Balasubramanian	Vice President, Wipro, Bangalore	SEBI Guidelines
11 Nov 2017	Sri Vijay Sai Pratap	Co-founder & CEO of Gram Vaani	Application of Technology in a Social Enterprise

Annexure-VII Contd...

18 Nov 2017	Prof. V L Rao		Current Indian Economic Scene and Business Environment
25 Nov 2017	Sri Mandip Sandhu	Management Consultant, Canada	The Future of MBA and Work - vignettes from academics to consulting and everything in between
9 Dec 2017	Sri H Karthik, IIT, IIM	Partner, Everest Group	Global Service Industry-An Overview
16 Dec 2017	Sri K S Rao	Head – Investor Education & Distribution Development, Aditya Birla Sun Life AMC	Role of Mutual Funds in Financial Planning of Ones' Life
23 Dec 2017	Sri Manoj Ganjawalla	Vice President, Godrej & Boyce	ERP Implementation Experience at Godrej & Boyce
27 Jan 2018	Sri Krishna Kumar Bakshi	Consultant, Central Excellence	High performance work culture through of consultants
3 Feb 2018	Sri T V Sridhar	Trainer in Digital Marketing	Digital Marketing
9 Feb 2018	Sri Vivek N Gour	Managing Director & CEO Air Works India Engineering Pvt. Ltd.	Relevance of Values and Swami's Teaching in the Corporate World
17 Feb 2018	Sri S Radha Krishna	Senior Supply Chain Strategic Program Manager - Intel Corporation, Chandler, AZ	Trends in Supply Chain Management
24 Feb 2018	Sri S Srinivasan	Senior Vice President, ABB and Head of Global Business Services	Business Etiquette - Soft Skill & personality Development
24 Feb 2018	Sri S Banerjee	Manufacturing/Marketing/Service Organisations in various positions and locations.	River rights
24 Feb 2018	Sri Chandramohan S	President & Group CFO (Tractors and Farm Equipment Limited) Director: TAFE Motors and Tractors Limited	Enterprise Risk Management
10 Mar 2018	Sri Deepak Nachnani	Founder CEO, Coviam Technologies	New-age Start Ups, Transformations & Innovations
21 Mar 2018	Sri Ronald C Sequeira	Country H R Head, Glaxosmithkline Pharmaceuticals India	Experiences of a career in Banking (at HSBC) & Pharma (at GSK)
23 Jun 2018	Prof. Ashish Sood	University of California Riverside, USA	Innovation in Pricing
7 Jul 2018	Sri Anand Ranganathan		GIS and Management division Making
21 Jul 2018	Brig Ashish Shah	4 th generation Army Officer. An Alumni of the National Defense Academy	Combat Leadership-In the Line of Fire
4 Aug 2018	Sri S Narayana	Consultant	Supply Chain Management: Opportunities
24 Jun 2017	Sri Balaramachandran	AVP, HDFC Bank	Softskills
1 Jul 2017	Sri Kalki Yasas	Director Consulting, Salesforce.com	Technology and Business
8 Jul 2017	Sri PV Murali	Manipal University	Softskills
15 Jul 2017	Sri S Chandramohan	Group CFO, TAFE	Macroeconomics
21 Jul 2017	Sri R Gopalakrishnan	Mitsubishi Hitachi, Japan	Japanese Management
22 Jul 2017	Sri L Sridhar	Partner, Sridhar and Britto	GST
22 Jul 2017	Sri Kunal Wadhwas	PricewaterhouseCoopers	GST
29 Jul 2017	Sri N T Arun Kumar		Bigdata and Business
11 Aug 2017	Sri Subu Venkatraman	Consultant	Entrepreneurship
26 Aug 2017	Sri Balaramachandran	AVP, HDFC Bank	Softskills
1 Sep 2017	Sri Karandeep Singh	TESCO	E-Commerce
18 Sep 2017	Sri PV Murali	Manipal University	Emotional Intelligence

Annexure-VII Contd...

23 Sep 2017	Sri Aakash Shirodkar	Associate Director, Cognizant	Business Analytics
11 Nov 2017	Sri Balasubramanian	Counsel at J Sagar Associates	Infrastructure and PPP
18 Nov 2017	Sri Balasubramanian	Consultant, Siemens India	ERP
25 Nov 2017	Sri PV Murali	Manipal University	Emotional Intelligence
5 Dec 2017	Sri S Ramesh	Company Secretary	Corporate Governance
9 Dec 2017	Sri Balaramachandran	AVP, HDFC Bank	Softskills
16 Dec 2017	Sri Vijay Krishanmoorthy	IBM, India	Blockchain
19 Jan 2018	Sri K S Rajesh	Counsellor	Future in your hands
23 Dec 2017	Sri Vijay Santhanam	Barclays Bank	Forex Markets
27 Jan 2018	Sri PV Murali	Manipal University	Softskills
17 Feb 2018	Sri Harikesh	Spark Capital	Investment Banking
24 Feb 2018	Sri Balaramachandran	AVP, HDFC Bank	Softskills
3 Mar 2018	Sri Prasad Chitta	TCS	Data Analytics
10 Mar 2018	Sri PV Murali	Manipal University	Softskills
18 Mar 2018	Sri Thiruvengadam	Consultant	Strategic Cost Management
24 Mar 2018	Sri Rohit Kamath	NLSIU	Competition Law
16 Sep 2017	Sri Hemkumar Gopalakrishnan	Regional Resident Representative at National Housing Bank, Bangalore	Credit rating and Hosing Finance
16 Sep 2017	Sri Sai Roopak	Associate Director, Finance & Legal, Capital One India	Entrepreneurship
20 Jan 2018	Sri Sheshadri R Rao Sahib	Director, Sri family, Bangalore (Udupi Ruchi)	Career building through Entrepreneurship
16 Feb 2018	Sri Kumar Subramaniam	Commercial Director, thyssenkrup Aerospace	Impact of Digital Economy
16 Feb 2018	Sri Duvuri Jagannath Rao	Senior Macro Economist, American Embassy, New Delhi	Cash to Cashless - is India Ready?
16 Feb 2018	Sri Sachi Varadarajan	Vice President, Engineering Qualcomm India - HW design engineering in India, Bangalore	Smart and Secure connected world
16 Feb 2018	Sri Rajesh Dhuddu	Sr. VP Market Development Quattro Global Services, NCR Region	Big Data – The Science Powering New Age Digital World. Understanding the Skills required for decoding it
17 Feb 2018	Sri Venkatesh Natarajan	Senior Vice President, IT / CIO Ashokleyland, Chennai	Driving into the future leveraging Digital
17 Feb 2018	Sri B Vivek Naidu	Founder & Managing Director - Hotfoot Technology Solutions, Chennai	Digital Banks - Road Map and the Skills India needs to foster a digital economy
17 Feb 2018	Sri A N Sudhakar	Senior Deputy General Manager / Foundries & Pattern Shop, Bharat Heavy Electricals Limited, Hyderabad	Digital Economy made easy
17 Feb 2018	Sri L Srihari	Head of Industry Solutions, HiTech CPE at Tata Consultancy Services, Chennai	Know the basics – conquer fundamentals

Economics

DATE	PRESENTER	DESIGNATION	TOPIC
14 Jun 2017	Prof. R Gangadhara Sastry	Professor, SSSIHL	Political Economy
21 Jun 2017	Sri Rajabhushan Jagadish Nayak	Asst. Professor, Dept. of Economics, SSSIHL	GST: Benefits and Challenges
28 Jun 2017	Sri Aman Javeri	Doctoral Research Scholar, Dept. of Management & Commerce, SSSIHL	Behavioral Entrepreneurship
5 Jul 2017	Prof. B L Pandit	Professor, Delhi School of Economics	Policy Rates of Interest in India
12 Jul 2017	II M.A. in Economics Students	Students, SSSIHL	Dissertation presentations
19 Jul 2017	II M.A. in Economics Students	Students, SSSIHL	Dissertation presentations
26 Jul 2017	II M.A. in Economics Students	Students, SSSIHL	Dissertation presentations
9 Aug 2017	II M.A. in Economics Students	Students, SSSIHL	Dissertation presentations
16 Aug 2017	II M.A. in Economics Students	Students, SSSIHL	Dissertation presentations
23 Aug 2017	II M.A. in Economics Students	Students, SSSIHL	Dissertation presentations
30 Aug 2017	II M.A. in Economics and III B.A. in Economics Students	Students, SSSIHL	India's Demographic dividend
13 Sep 2017	Sri M Mallikarjuna	Doctoral Research Scholar, Dept. of Economics, SSSIHL	Structure of Financial Markets
20 Sep 2017	Sri Sayel Basel	Doctoral Research Scholar, Dept. of Economics, SSSIHL	Health Economics
8 Nov 2017	Prof. V L Rao	Professor, GITAM University	Current Indian Economic Scene: The GDP Growth Debate
29 Nov 2017		Video Presentation	The story of Indian Economic Reforms
6 Dec 2017	I M.A. in Economics and III B.A. in Economics Students	Students, SSSIHL	Triple entry system: Block chain Technology in Economics and Finance
13 Dec 2017	Prof. Madhu S Mohanty	California State University	Psychological Capital
20 Dec 2017	Dr. Debarshi Dey	Sr. Bio Statistician	P Value: It's Significance in Scientific Research
24 Jan 2018	I M.A. in Economics and III B.A. in Economics Students	Students, SSSIHL	Special Economic Zones
7 Feb 2018	Sri Sundara Krishnaswami	CEO, Preeti Petro Chemicals, USA	Bytes Block Chain and your Rupee: A Brief Update
14 Feb 2018	I M.A. in Economics and III B.A. in Economics Students	Students, SSSIHL	Behavioral Finance and its Applications
21 Feb 2018	I M.A. in Economics and III B.A. in Economics Students	Students, SSSIHL	Mutual Funds in India
14 Mar 2018	I M.A. in Economics and III B.A. in Economics Students	Students, SSSIHL	Inequality: Insights into Modern Economy
21 Mar 2018	I M.A. in Economics and III B.A. in Economics Students	Students, SSSIHL	Application of Theoretical Models for Financial Innovation

Summary of SSSIHL Alumni Workshop -2017 12th, August 2017

Venue : Prasanthi Nilayam, Puttaparthi

Date : 12 August 2017

There were around 60 SSSIHL-Alumni who made it for the **SSSIHL Alumni Workshop-2017** in person. And about 6 dialled in and participated in the proceedings from remote.

The day started with Alumni participating in the morning Prayers with all students at the Auditorium. Post the panel discussion with 10 alumni on the stage, the attendees split up as sciences, Management and Economics groups to have separate sessions with the respective departments.

1. Department of Management Studies (DMS)

Just a rough draft, concerned Alumni please add the details:

[Audio of the session](#)

[Snapshot of the Notes](#)

New Activities:

1. Launch 'MDP' in current year for faculties and Alumni
2. Launch data-based research eg.:Bloomberg
3. Facilitate pitching to venture capitalists
 - a. Can we integrate with course and summer project?
4. Can I do this seva? (Open House)
 - a. 40 projects mentors needed
5. Can we brief industry specifics?
 - a. Software/tools/apps

Areas of Improvement:

1. Scheduling the program for Attention
 - a. More to _____ for Sai Giridhar (check this line)
2. How to we check B12 News update
 - a. Lack of Interest
 - b. Lack of Time
3. How do we encourage more participation
4. 4th Colloquium to be structured based on student participation
 - a. Program has been restructured (Sai Giridhar)
5. Skill gaps seen during Catalyst program
 - a. Responsiveness, Self-awareness, Realistic expectation, Resume prep
6. Can we prepare on career decision on 2 year
 - a. Venkatesh is on job, ensure future aspirational role
7. Can institute publish gaps in faculty requirement before academic year
8. Can we look at student expectations (esp. freshers)
9. BA SHDC training is critical as it is needed & jobs are also available
 - a. Ganesh to action this
10. Can we have project presentation mela during Jan/Feb every year.

2. Economics

(Here is Just a rough draft, concerned Alumni please add the details)

Snapshot of the notes

1. Calendar of Activities
2. List of Alumni for Faculty sessions
3. Research Topics
4. Supporting guidance from senior Alumni
5. Under-study assignments for Faculty
6. Application-oriented faculty development programs
7. Colloquium sessions on a fortnightly or monthly basis culminating into a national level conference around December
8. We look at evolving database of active Alumni

3. Department of Physics (DPHY)**Meeting Minutes:****1. Teaching-learning initiatives:**

- Inputs from alumni in updating syllabi to reflect current trends in industry. This is mainly for the M.Tech. program. However, some electives can be introduced at M.Sc level that can be of interest to students.

2. Monthly sync-up for M.Tech & M.Sc Projects:

Forming a committee (including Alumni in respective domains + faculty)

3. Introduction of new electives:

Reflecting recent trends in software/hardware related to networking,, embedded systems, IoT

- i. Online courses can be provided with credits

4. Industry-Academia Collaboration:

Alumni will look into the possibility of creating formal industry-academia relationship, through which projects can be taken and setting up sponsored labs

- i. Initiating ARM-university program
- ii. Ongoing research can be collaborated with biotech labs for point of care devices
- iii. Participating in industrial tech events

5. Tech talks:

Alumni taking up initiative on presenting colloquium talks.

6. Alumni in academic or R&D institutions are welcome to collaborate on research projects with the dept. Also, their participation in evaluation of students project report or answer scripts would be of great help to dept.

4. Department of Chemistry (DCHEM)

The interaction consisted of two sessions, one with the faculty and the second one with the students of the department.

Session-1:

1. Discussed on the current job scenario for the chemistry graduates / post graduates.
2. The position / job nature where students would be placed on getting a job.
3. Scope for doing research while on the job and also the scope of getting higher designations on completing a research work was discussed.
4. As an Alumni, how we can help the department as visiting faculty. This could be done by an alumnus who is expertise in a particular field of subject. He can get in touch with the department, and can prepare himself in line the syllabus.

5. Alumni can arrange for an industrial visit to the organisation / Factory / Research lab if possible, so that the students can get an experience of industrial environment.
6. During the discussion with the faculty, gave some inputs to the current research project by Dr.Sai Satish on making a master shade card to suit different shades.
7. Possibility of extending the CATALYST group to the science stream (or) creating a separate group to help students in placements.
8. Possibility of getting professors of other universities as examiners was also discussed.

Session-2 :

Interactive session with the current PG students, where the Alumnus shared his experience on the job profile, nature of work one would get on completing PG/ M.Tech/ PhD.

Student's queries on scope of higher studies/ research were clarified

Along with the above, the Alumni-Faculty also stressed that the previous years agenda of helping as examiners in paper setting, collaborative research , job placements would continue.

5. Department of Biosciences (DBIOS)

summary of mid year meet of **DBIOS 2017**

Session-1 was on activities/deliverables primarily for the department faculty & research scholars.
Session-2 was on activities/deliverables for the UG/PG students.

If so, can the activities/action-points be re-stated as:

Session1

Enriching curriculum:

- 1) Enriching the course content by hands-on approach(es).
- 2) Identify cross disciplinary courses, initiate as minor/elective papers such as: Bioinformatics/Computational Biology, Big Data tools, Biostats (from Maths & Comp.Sci Dept.), Basic Thermodynamics & Biophysics (from Physics dept.), Biochemistry(from Chem Dept.), Economics, Entrepreneurship (Economics & Management Dept.). Also, define course contents.

Enriching Research & Development:

Define/state vision & thrust area(s)/mission (long & short term) for the department/R&D centre. Identify programs, projects in the frontier R&D areas identified. Organise lectures/meetings/workshops/refresher courses for faculty and scholars towards effecting collaborations and funded research projects.

Session2

Enriching translation to society:

Training in CV, Resume, SOP prep

Explore summer/project internships

Skilling programs, expert presentations on frontier research areas, cutting edge Technology etc. (this can be coupled with points 1 & 4)

Fellowship/Job/Entrepreneurship: Create a knowledge bank / basket / Transparent platform for technical

discussions and information exchange (exam, internships, employment, training, career orientation etc.).

Action

Points:

- 1) Fortnightly conference calls & reports on the above points to be prepared by the department (HOD, Department POC-Dr. B.E. Pradeep) with support from Alumni.
- 2) A copy of the above session 1&2 points may please be sent to Hon. VC and the various Dept. Heads mentioned.

6. Department of Mathematics and Computer Science (DMACS)

Meeting Minutes:

M.Tech (CS) program is celebrating its Silver Jubilee on June 10th, 2018. Looking for a high level of participation from the Alumni. Over the 2 sessions held (11AM-12:30PM and 2:15PM-3:30PM), the primary point was skill development of students outside of classroom (both organically within the students and through alumni interaction)

Internal Changes from students/faculty:

1. Online skill showcase: students need to put up their codes on github; their ideas on technical blogs; contribute to opensource projects; answer questions on statsexchange.com; participate on hackerearth.com, hackerrank.com, etc. Basically have a definite online footprint before passing out.
2. Focus groups in their areas of interest need to be formed by students
3. GDs need to be practised right from UG
4. Assignments need to be given more priority (credits for assignments which are optional)
5. To sustain skill development, faculty training needs to be prioritized
6. Students need to focus on solid understanding on fundamentals more than advanced tech. Eg. Gradient descent and convolution more important than CNNs, RNNs, etc.
7. Students get a lot of right inputs but they lack practice
 - a. We tried this in Muddenahalli 2 years back (????)
8. While students are coding and practising code, focus needs to be on covering all possible test cases rather than coding conventions which look for long term maintainability of the codebase.

Alumni Involvement:

1. Project ideas : Look for opportunities to combine service activities with project ideas eg: reducing farmer suicides using image processing of irrigation land satellite imagery. (Alumni to help M.Sc and M.Tech students on this)
2. Mentorship : Students need to be mentored by Alumni to help them open up, become more confident in their skill level, get real-world examples of subject matter, plan out career path, etc. Student development need to be tracked with open source tools like Jira.
3. Case studies and workshops : Detailed case studies need to be conducted which give holistic picture of the subject matter from different courses,
 - a. Eg: Step by step talk on how each stage of the compiler is used to implement the Google PageRank Algorithm.
4. Workshops to improve knowledge about latest technologies also to be conducted by Alumni.

Action Items:

Before next August:

1. Students need to have started at least 1-2 focus interest groups.
2. Alumni need to plan at least 6 detailed case studies (case studies must complement the course but need not be limited to coursework)
3. Need to faster response from the Institute. Issue here is that finding who would follow up in the department. (????)



SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING
(Deemed to be University)

CONFIDENTIAL FEEDBACK ON TEACHING QUALITY

The purpose of this feedback/assessment is to help improve the overall quality of teaching.

- ※ *Kindly respond to the following questions **in relation to the quality of teaching of this course**.*
 ※ *Your **honest opinion** is solicited and your feedback will **not** have any influence on your grade.*

Indicate the response to the following questions on a scale of 1 to 6 where **1 is Strongly Disagree** and **6 is Strongly Agree**.

CORE TEACHING

- 1 The course was covered effectively in an organized manner (includes uniform spacing of course lectures and assignments).
- 2 Lectures were communicated effectively (i.e. clarity of expression, reinforcement of key ideas).
- 3 Passion in teaching the subject was evident.

PEDAGOGY

- 4 Appropriate teaching aids (includes blackboard/slides/videos/demos), when necessary, were used effectively.
- 5 A variety of questioning techniques were employed to enhance learning.
- 6 A broad perspective of the subject was given to stimulate learning.

CLASS INTERACTION

- 7 Class participation/discussion was encouraged.
- 8 Accessibility for clarifying doubts/queries (inside and outside the class) was adequate.
- 9 Doubts/queries on the subject were answered convincingly.

CONDUCT OF CIE

- 10 Syllabus was taught comprehensively.
- 11 Learning was enhanced by the effective use of assignments and tests.
- 12 Grading of assignments/answer scripts was impartial.
- 13 Students were given timely feedback on their performance.

STUDENT-CENTRIC TEACHING

- 14 Classes kept the students interested and focused.
- 15 Students' point of view in class discussions was considered.
- 16 Openness to accept errors & omissions was shown.

DISCIPLINE AND VALUES

- 17 Discipline was maintained in class.
- 18 Values and the teachings of Bhagawan were seamlessly integrated into the teaching process.

OVERALL RATING

- 19 How would you rate the overall quality of teaching?



SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(Deemed to be University)

Teaching Quality Feedback

Questionnaire for Software Laboratory:

- P1: Effective theoretical foundation related to programming exercises was given.
- P2: Planning and execution of programming or mini-project related exercises were explained.
- P3: Appropriate methodology to implement the software solution was explained.
- P4: Software lab sessions were supervised effectively.
- P5: Doubts and questions raised during the programming sessions were clarified effectively.
- P6: Assignments were corrected on time.
- P7: Constructive comments/suggestions were given on assignment/ lab exercises.
- P8: Time given for exercises/assignments was adequate.
- P9: Computing equipment were in working condition and of capability needed to perform the tasks.
- P10: Any other suggestions and improvements. (Descriptive question with word limit of 50 words)



SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(Deemed to be University)

Teaching Quality Feedback

Questionnaire for Experiment based Practicals:

- P1: Effective theoretical guidance related to practicals was given.
- P2: Planning and execution of practicals were explained.
- P3: Appropriate methodology to carry out the practicals was explained.
- P4: Practicals were supervised effectively.
- P5: Doubts and questions raised during the practicals were clarified effectively.
- P6: Helpful comments/suggestions were given on lab records for improvement.
- P7: Time given for practicals was adequate.
- P8: Equipment for practicals were in working condition.
- P9: Prescribed minimum number of practicals were completed and performed.
- P10: Evaluation of practicals was fair and impartial.
- P11: Any other suggestions and improvements. (Descriptive question with word limit of 50 words)

Vidyagiri, Prasanthi Nilayam - 515 134, Anantapur Dist., Andhra Pradesh, India
Tel: +91 8555 287239 | Fax: +91 8555 286919 | registrar@sssihl.edu.in | www.sssihl.edu.in

Name of the Student: **A VENKATA RAMA PRASANNA SAICHAND**
 Regd No: 17552 Class: **I-M.Tech.(CS)** Room No: C08

Date: 14-04-2018

STUDENT PROGRESS REPORT TO THE PARENT

We are furnishing below a general report of your ward pertaining to various activities during the semester. Also included a few observations made by our teachers. You are requested to kindly advise him accordingly. Kindly send this report back to us duly acknowledged by you.

(A) Room Teacher / Floor Teacher feedback:

Remarks of Room Teacher (Sri Kartik Satyanarayan Aiyer / Sri Ashwin Ashok Naik)

Sai Chand has a lot of talent and potential, be it in academics, sports ~~or~~ co-curricular activities. He is sincere towards his approach in all his undertakings. His health is one area where he can improve. We pray to Swami to bless him with happiness and success.

Remarks of Floor Teacher (Dr. Shailesh Srivastava)

Keep it up & Come back fully refreshed for the final year in the best of health & spirits.

A. P. Sanna

Signature of the Parent

Name of the Student: **AKELLA VENKATA RAMA PRASANNA SAICHAND**
 RegdNo: 17552, Class: I M.Tech(CS), Room No: C08

(B) Performance / Attendance:




Suprabhatam Attendance (%)	87
Jogging Attendance (%)	92
Sports & Games (%)	94

*good
an*

(C) Feedback from Self Reliance Department (SRD):

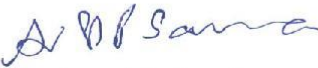
Self Reliance Department (Name)	Dance Group
Self Reliance Department (Teacher In charge)	SRI. NAGA SAI VISWESWAR AND SRI. NISHANT KOLLI
Self Reliance Marks (out of 10)	9.5
Comments: Sincere and committed. With little tolerance and consideration, he will become a good leader	

We pray to Bhagawan for the all-round progress and welfare of your ward. We wish you a happy vacation with your ward. It is mandatory that the parents visit Prasanthi Nilayam at least once a year to meet the Warden and the Room Teacher / Floor Teacher to apprise themselves of their ward.

		
Sri Kartik Satyanarayan Aiyer / Sri Ashwin Ashok Naik	Dr. Shailesh Srivastava	Dr. N. Niranjan
Room Teacher	Floor Teacher	Warden

Date: 14-04-2018

Place: Prasanthi Nilayam


Signature of the Parent

Name of the Student: **A VENKATA RAMA PRASANNA SAICHAND**
RegdNo: 17552 Class: **I-M.Tech.(CS)** Room No: **C08**

II-M.Tech.(CS)

FEEDBACK FROM PARENTS

(If you need more space for providing feedback, please use back side of this page)

Sai Ram Sir,

By the Grace of Bhagawan and with the blessings of Bhagawan and with your great support and care my ward is shining in all aspects like academics, sports, cultural activities and service activities. I am very happy to see my son in such a manner. I hope he would succeed in all aspects after his successful completion of his education then. We request your support and blessings in future also for his bright future.

→ Sai Ram

Name of the Parent	A V S S P Sarma
Email id of Parent(s) in CAPITALS (Compulsory)	avella.sarma999@gmail.com

Note: This, duly acknowledged by the Parent, should be submitted to the Hostel office at the time of rejoining Hostel on 31st May, 2018.

Name of the Student: **R HEMANT KUMAR**
Regd No: 17707 Class: **I-M.Tech.(OEC)** Room No: C08

Date: 14-04-2018

STUDENT PROGRESS REPORT TO THE PARENT

We are furnishing below a general report of your ward pertaining to various activities during the semester. Also included a few observations made by our teachers. You are requested to kindly advise him accordingly. Kindly send this report back to us duly acknowledged by you.

(A) Room Teacher / Floor Teacher feedback:

Remarks of Room Teacher (**Sri Kartik Satyanarayan Aiyer / Sri Ashwin Ashok Naik**)

Hemant is sincere and has shown great improvement this semester. He stands out in his desire and determination to give his best in his activities. He tries to uphold and understand the spirit behind everything and will go a long way. We pray to Swami to bless him with happiness and success.

Remarks of Floor Teacher (**Dr. Shailesh Srivastava**)

He has put in good work and is sincere. For this final coming year, he needs to just keep up his good efforts. He can rise to the top!

Name of the Student: **SUDARSHAN VYAS**
Regd No: **161106** Class: **II-B.A.(Hons.) HEP** Room No: **A18**

Date: 14-04-2018

STUDENT PROGRESS REPORT TO THE PARENT

We are furnishing below a general report of your ward pertaining to various activities during the semester. Also included a few observations made by our teachers. You are requested to kindly advise him accordingly. Kindly send this report back to us duly acknowledged by you.

(A) Room Teacher / Floor Teacher feedback:

Remarks of Room Teacher (Sri Abhinav P Nair / Sri Thota Sai Praneeth)

His fun loving nature at times gets him into trouble. otherwise, a good student. Need to follow the physical restrictions advised by the doctor a bit more seriously.

Remarks of Floor Teacher (Dr. Vishwanathan A S)


Signature of the Parent

2

Title- Sri Sathya Sai System of Integral Education (SSSSIE)

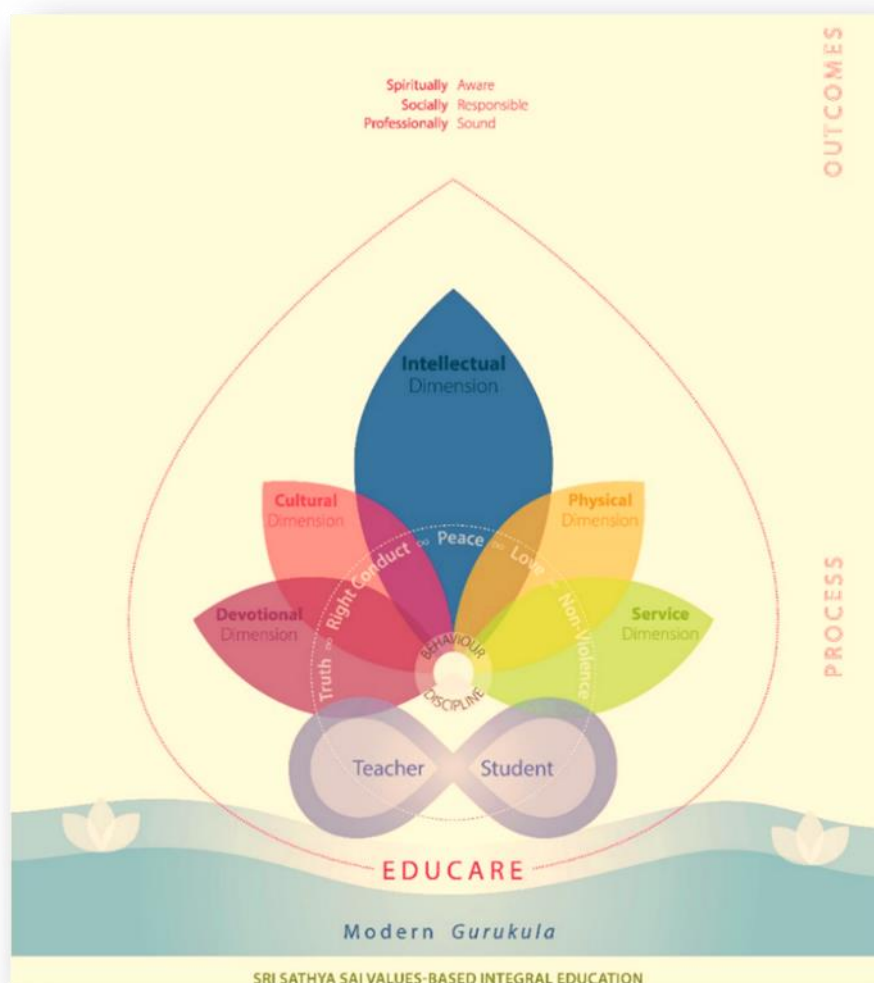
Objectives of the Practice- According to the Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba- *End of Education is Character*. Keeping in mind this dictum, the objective of this 'best practice' is to impart education which moulds students into ideal citizens wedded to the service of the society. SSSSIE aims to combine academic competence with development of good character, noble attitudes and values, social sensitivity and spiritual awareness in all students.

Context- Education is increasingly becoming an instrument for filling the minds with mere information. The students are charged substantially high fees in the name of imparting world class education. The sole purpose of education has become earning a livelihood and not acquiring life skills. The worth of an educational institution is being judged by the placements and pay packages it can offer to its students. Revered Founder Chancellor observed- At present, colleges are infected with anxiety and perplexity, discontent and ill-discipline, irreverence and futility; they have lost the status of temples of learning, where youth are shaped into self-reliant, contented and enterprising heroes.

In this context, Sri Sathya Sai Baba, the Revered Founder Chancellor, had foreseen the need for values based education programme and had taken concrete steps to implement the same into a formal educational system known as SSSSIE. He observed- *The crisis in educational field is well known. Many attempts have been made to bring about changes in the educational system. But it is forgotten that what gives education its true value and significance is its moral and spiritual content.*

Practice- The word education, according to the Oxford dictionary, has come out of the root word *educare*. According to the Revered Founder Chancellor, Bhagawan Sri Sathya Sai Baba- The word Educare has its origin in the Latin word, 'educere', which means 'to elicit'. Educare has two aspects, the worldly and the spiritual. Worldly education brings out the latent knowledge pertaining to the physical world. Spiritual education brings out the inherent divinity in man. So, both worldly and spiritual education is essential, without which the human life has no value.

This unique model of education was established on the lines of **Gurukula** system of education of the yore to make the students Professionally Sound, Socially Responsible and Spiritually Aware. It has five dimensions- Intellectual, Cultural, Devotional, Physical and Service to develop the students in holistic individuals.



The unique and distinctive features of this system of education are:

- Equal emphasis on curricular and co-curricular aspects
- Integrating values with secular knowledge through curriculum and classroom teaching
- Curriculum steeped in rich Indian Culture
- Synthesis of Science and spirituality
- Compulsory residential system
- One in five teachers stay in the hostels guiding and mentoring the students in academics and other aspects
- Inculcating the spirit of self-reliance in students in the hostels- self-reliance means reliance on one's own innate capabilities and talents which is facilitated in the students through dignity of labour and respect for work
- Open admissions policy irrespective of caste, creed, religion or income or region
- Free education for all students

As the Sri Sathya Sai System of Integral Education offers FREE EDUCATION for all irrespective of caste, creed, religion or region with no fees whatsoever have been charged from any students; no non-recurring budget (salaries) are taken from State or Central Govt.; and totally a residential nature of education have been offered – no constraints have been encountered so far by Sri Sathya Sai Institute of Higher Learning.

Evidence of Success- According to Bharat Ratna Dr. APJ Abdul Kalam, the then President of India at the 21st Convocation of the Sri Sathya Sai Institute of Higher Learning dt. 22.11.2002:

“The purpose of real education is to initiate a learning process that transforms students into good human beings with knowledge and value systems. Is values-based education possible? Sri Sathya Sai Institute of Higher Learning has given an answer in the affirmative. I would like to congratulate the Institute for this noble education.”

Few tangible results of the SSSSIE:

- Academic calendar is followed scrupulously with clockwork precision
- Teachers and students grow in a spirit of camaraderie hence there has never been an occasion of student unrest or ragging.
- Alumni Impact Analysis: An alumni impact analysis survey was carried out in the year 2011 where total of 744 alumni completed the survey. The broad findings are given below:

7 in **10** alumni felt that their experience at the university contributed **“VERY SIGNIFICANTLY”** to developing their ability / competence in one or more of the following:

n = 388

Integrity

Work ethics

Concern for society and environment

Dealing with different types of people

Working in teams

9 in **10** alumni felt that their experience at the university contributed **“SIGNIFICANTLY”** to developing their ability / competence in one or more of the following:

n = 388

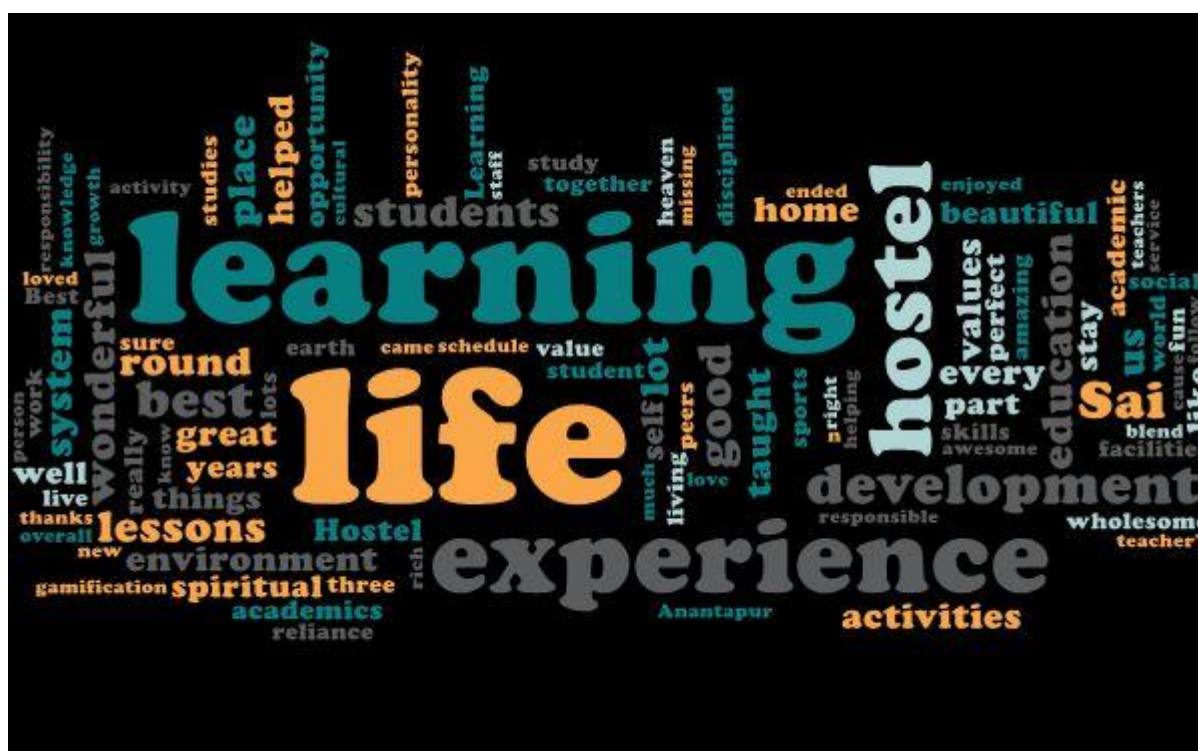
Patience and perseverance

Inspire others by example

Leadership

Organizing time effectively

- A survey was conducted for all the passing out students of the institute in 2018 regarding their experience and learning at the institute. Key words from the responses received from the students bear testimony to the basic tenets of SSSSIE like Education is for life and not living, Education is not an overload of information but a process of learning and development, Practical experience is more important than bookish knowledge and Component of hostel life is a very important facet of SSSSIE.



Problems Encountered and Resources Required- In the SSSSIE, a complete residential system of education is followed where the dictum- 'Each lives for the other and all live for God' is sincerely followed. The faculty and the students live like on family in the institute promoting the spirit of camaraderie. Hence, the institute NEVER encounters any problems whatsoever. In line with the dictum of Free education for ALL by the Revered Founder Chancellor, education is imparted totally free of cost where the various needs of the students, teachers and non-teaching staff are taken care by the parent trust of the institute. The staff and students on their part exemplify the virtue of 'Simple Living and High Thinking'. Hence, the institute never faced any paucity of resources.

Notes (Optional)

Title- Teaching Quality Feedback (TQF)

Objectives of the Practice- According to the Revered Founder Chancellor Bhagawan Sri Sathya Sai Baba, a teacher should be an '*acharya*' who teaches students by his *acharana*- conduct (practice). Teachers should not only have knowledge of the subject but the skills to impart the same to the students. He/she should have the spirit of being a student for life to never stop learning and kindle the same spirit in the students. Objective feedback from the 'taught' about the teaching process goes a long way in providing the necessary inputs to the teacher to assess his/her teaching vis-à-vis the benchmarks of an ideal teacher and bring about the necessary improvements.

Context- The rigour of the present day workplace like corporates, research institutions, entrepreneurship etc., requires the students to be thorough in their basics, also acquire additional knowledge in their specific fields of study and also be innovative in their approach. Due to this, the teaching process is witnessing a paradigm shift from the traditional chalk and talk method to the interactive and participative type of teaching enhanced by the modern teaching aids available to the teachers. In this context, to undertake effective teaching, the feedback from students about the teaching process becomes very important. For the feedback to be effective, following points had to be addressed:

- Has to be confidential so that students can give candid and constructive inputs about the teaching process.
- The questionnaire should be designed in such a way that it captures information about all the aspects of teaching learning process.
- The analysis of the feedback to be presented to the faculty in a way so that they can take steps to improve/modify (if required) their teaching process

Practice-

A committee was constituted to do an in-depth review of the teaching learning process and it arrived at the six broad dimensions of **Core Teaching, Pedagogy, Class Interaction, Conduct of CIE, Student Centric Teaching, Discipline & Values** and 3 to 4 questions in each dimension. A Likert scale of Strongly Disagree- Strongly Agree was employed for scaling the responses of the students. Different set of questionnaires were designed for Theory, Experiment based Practicals and Software Lab. The questionnaires are coded in PHP and administered through a specially dedicated server. The feedback

sessions in the respective computer labs of the campuses were kept completely anonymous to elicit candid responses from the students.

Feedback is recorded at the end of every semester from the students about the teaching process of the semester. The responses received are automatically compiled through a computer programme and are made available to the faculty and the HoDs at the beginning of the next semester. The HoDs receive the feedback of the faculty members of the whole department and they counsel/advise wherever necessary after going through the reports of the individual faculty. Following are the set of questions for a theory subject:



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CONFIDENTIAL FEEDBACK ON TEACHING QUALITY

The purpose of this feedback/assessment is to help improve the overall quality of teaching.

* Kindly respond to the following questions **in relation to the quality of teaching of this course**.

* Your **honest opinion** is solicited and your feedback will **not** have any influence on your grade.

Indicate the response to the following questions on a scale of 1 to 6 where **1 is Strongly Disagree** and **6 is Strongly Agree**.

CORE TEACHING

- 1 The course was covered effectively in an organized manner (includes uniform spacing of course lectures and assignments).
- 2 Lectures were communicated effectively (i.e. clarity of expression, reinforcement of key ideas).
- 3 Passion in teaching the subject was evident.

PEDAGOGY

- 4 Appropriate teaching aids (includes blackboard/slides/videos/demos), when necessary, were used effectively.
- 5 A variety of questioning techniques were employed to enhance learning.
- 6 A broad perspective of the subject was given to stimulate learning.

CLASS INTERACTION

- 7 Class participation/discussion was encouraged.
- 8 Accessibility for clarifying doubts/queries (inside and outside the class) was adequate.
- 9 Doubts/queries on the subject were answered convincingly.

CONDUCT OF CIE

- 10 Syllabus was taught comprehensively.
- 11 Learning was enhanced by the effective use of assignments and tests.
- 12 Grading of assignments/answer scripts was impartial.
- 13 Students were given timely feedback on their performance.

STUDENT-CENTRIC TEACHING

- 14 Classes kept the students interested and focused.
- 15 Students' point of view in class discussions was considered.
- 16 Openness to accept errors & omissions was shown.

DISCIPLINE AND VALUES

- 17 Discipline was maintained in class.
- 18 Values and the teachings of Bhagawan were seamlessly integrated into the teaching process.

OVERALL RATING

- 19 How would you rate the overall quality of teaching?



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Teaching Quality Feedback

Questionnaire for Experiment based Practicals:

- P1: Effective theoretical guidance related to practicals was given.
- P2: Planning and execution of practicals were explained.
- P3: Appropriate methodology to carry out the practicals was explained.
- P4: Practicals were supervised effectively.
- P5: Doubts and questions raised during the practicals were clarified effectively.
- P6: Helpful comments/suggestions were given on lab records for improvement.
- P7: Time given for practicals was adequate.
- P8: Equipment for practicals were in working condition.
- P9: Prescribed minimum number of practicals were completed and performed.
- P10: Evaluation of practicals was fair and impartial.
- P11: Any other suggestions and improvements. (Descriptive question with word limit of 50 words)



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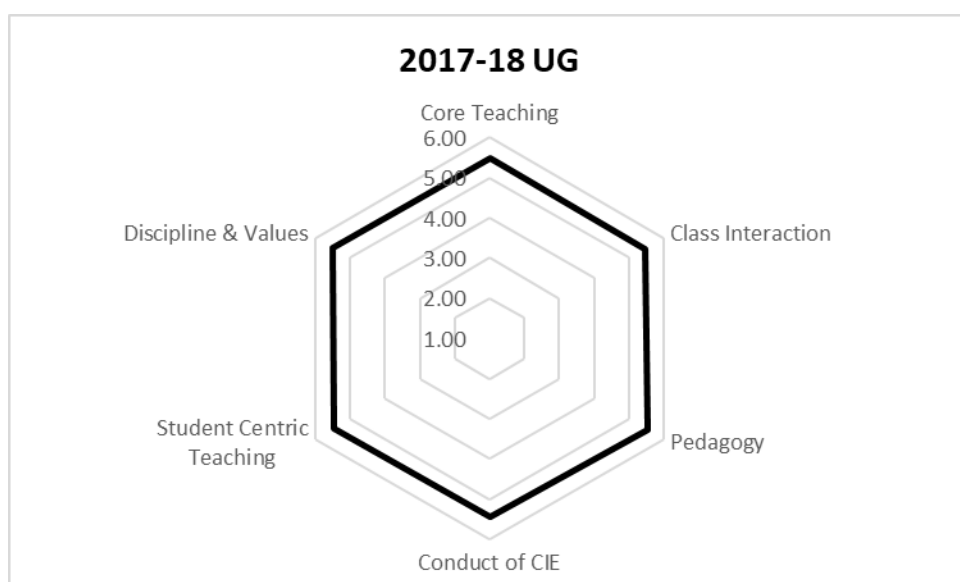
(Deemed to be University)

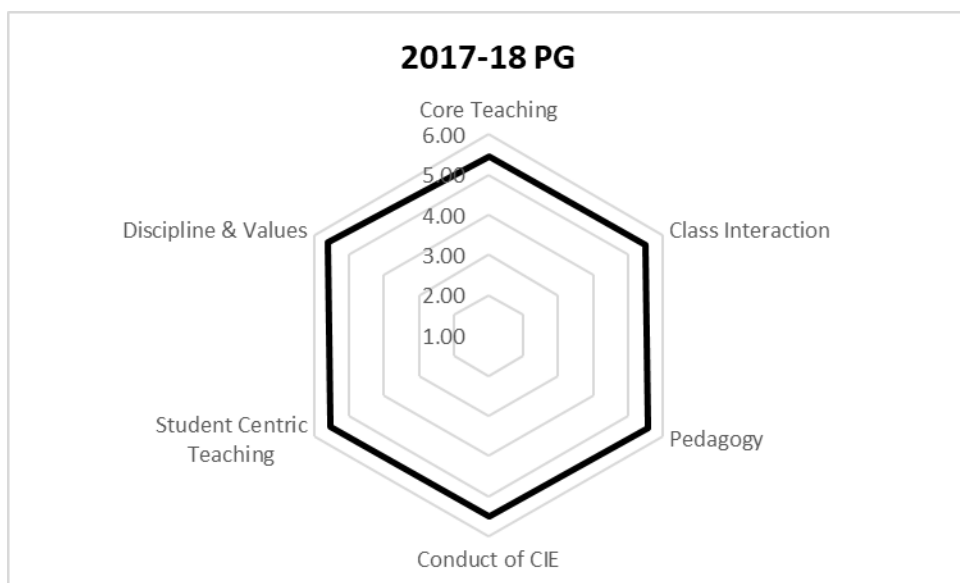
Teaching Quality Feedback

Questionnaire for Software Laboratory:

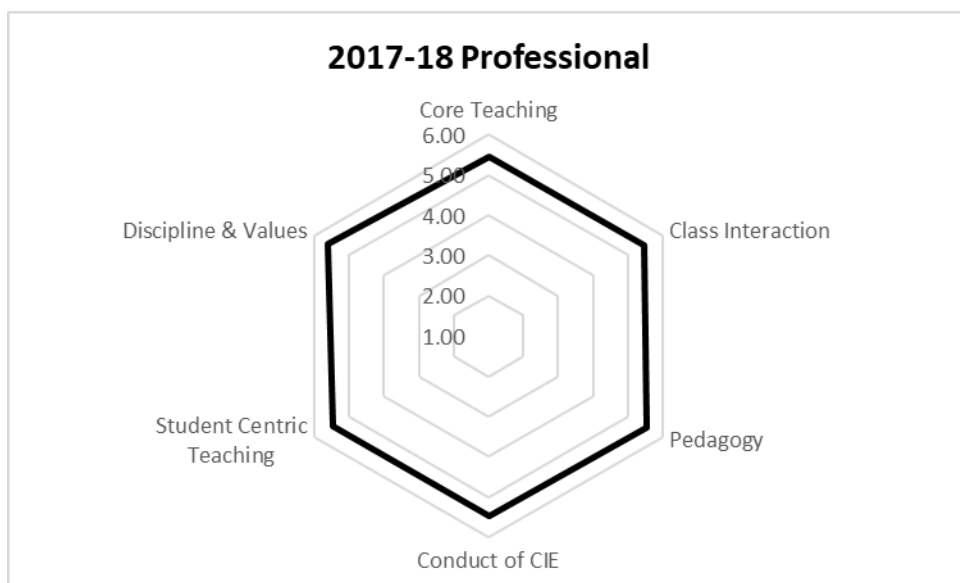
- P1: Effective theoretical foundation related to programming exercises was given.
- P2: Planning and execution of programming or mini-project related exercises were explained.
- P3: Appropriate methodology to implement the software solution was explained.
- P4: Software lab sessions were supervised effectively.
- P5: Doubts and questions raised during the programming sessions were clarified effectively.
- P6: Assignments were corrected on time.
- P7: Constructive comments/suggestions were given on assignment/ lab exercises.
- P8: Time given for exercises/assignments was adequate.
- P9: Computing equipment were in working condition and of capability needed to perform the tasks.
- P10: Any other suggestions and improvements. (Descriptive question with word limit of 50 words)

Evidence of Success- The feedback of students helps the teachers to ascertain the areas where improvement is needed (if any). This helps them in planning for the classes in a better way for the subsequent semester. The HoDs study the feedback reports of the individual faculty and use it as an effective tool to allocate subjects to the teachers in the subsequent semesters. The subjects where the feedback from the students is poor, the HoDs initiate corrective action. They also identify the strong areas of a faculty based on the feedback and give them subjects in those areas while deciding the workload in the following semesters. The feedback is also taken into consideration as one of the components in selecting the best teacher for Sai Krishna Best Teacher award from each campus once in two years. Radar chart of winter semester 2017-18-theory for the Undergraduate, Postgraduate and Professional Programmes are attached for reference.





Annexure-XII Contd...



Problems Encountered and Resources Required- Few issues were encountered regarding administering the feedback to the whole student community at the end of the semester through the campus intranet. This was initially addressed by dedicating the net connectivity only to the computer labs during feedback time. After the installation of dedicated lease lines from the individual campuses to the main campus this problem also has been addressed.

Notes (Optional)



SRI SATHYA SAI INSTITUTE OF HIGHER LEARNING

(Deemed to be University)

Minutes of meeting of the Internal Quality Assurance Cell (IQAC)

**held on Saturday, 8th September 2018 at 11.00 am at the
Academic Council Hall of the University**

Members Present:

- 1) Prof K B R Varma – Vice-Chancellor - Chairperson

A few senior Administrative Officers and One member from the Management:

- 2) Dr. B Sai Giridhar – Registrar
3) Sri Sanjay Sahni – Controller of Examinations

Teachers to represent all level (Three to eight):

- 4) Prof. S Siva Sankara Sai, Director and Dean, Faculty of Sciences, and Director of Prasanthi Nilayam Campus
5) Prof.(Ms.) Rajeshwari C Patel, Director of Anantapur Campus
6) Prof. G Nageswara Rao, Head, Department of Chemistry
7) Dr.(Ms) N Srividya, Head, Department of Food and Nutritional Sciences
8) Dr. G Raghavender Raju, Head, Department of Economics
9) Dr. S. Subramanian, Asst. Professor, Department of Management Studies (Deputy Coordinator of IQAC)
10) Dr. R Sai Sathish, Asst. Professor, Department of Chemistry (Deputy Coordinator of IQAC)

One nominee each from Employers/Industrialists/Stakeholders

- 11) Stakeholder: Mrs. Sujatha R, Trayee Business Solutions Pvt. Ltd., 288, Avvai Shanmugham Salai, Gopalapuram, Chennai

One nominee each from local society, students and alumni

- 12) Local Society: Dr. Prakash Khanchandani, HoD, Department of Orthopedics, SSSIHMS, Prasanthigram
 - 13) Student: Sri G Aditya, Research Scholar, Department of Management and Commerce
 - 14) Alumni: Prof. B Raghavendra Prasad, Indian Institute of Astrophysics, Koramangala, Bangalore - 560034.
 - 15) Dr. Pallav Kumar Baruah, Head, Department of Mathematics and Computer Science
- Coordinator**

Persons who were unable to attend the meeting due to personal reasons:

- 16) Industrialist: Mr. Pragnyat Lalwani, Director, Sessaasai Business Forms (P) Ltd., 9, Lalwani Industrial Estate, Katrak Road, Wadala, Mumbai – 400 031, Maharashtra

The meeting started with a prayer.

IQAC Coordinator invited the Vice-Chancellor, the Chairman of IQAC, to deliver the introductory remarks and guidelines for the proceedings of the day.

The Chairman introduced all the internal members to the external members.

1. The Chairman stressed upon the need to foster quality to constantly improve academic, research and administrative performance of the university. He evinced that steps should be taken to introduce academic programmes in the institute, which are appreciated not only in India but globally. He urged the cell to think of ways to make this institute at par with reputed institutions. He then briefly described different initiatives taken up in the university in the recent past:
 - i. Introduction of B.Sc.(Hons.) in Mathematics, Computer Science, Statistics combination in UG level and M.Sc (Data Science & Computing) at the PG level.
 - ii. Introduction of specialization papers viz., Actuarial Science in M.Sc. Mathematics and Materials Science in M.Sc. Physics.
 - iii. Introduction of Financial Economics as a specialization in MA Economics.
 - iv. Introduction of B.Sc. and M.Sc. courses in Food and Nutritional Sciences at Anantapur Campus.

A few steps for future course of action in the pursuit of excellence that he laid out were as follows

- i. Formulate objectives and outcomes for each course and provide clarity about career path(s) that the course leads to.
- ii. Improvement of academic process by revisiting of all the programmes to meet the required academic standards.
- iii. Explore the feasibility of starting new PG courses in Anantapur Campus for women.
- iv. Explore the possibility of introducing M.Sc. Biomaterials in Anantapur Campus as they have the required expertise. Study the scope of starting an M.Tech. Course in Department of Chemistry where stress is given on designing and fabrication of instruments.
- v. Starting specialization in Healthcare Management in the MBA program from next academic year to meet the increasing demand for this course.
- vi. Identify talent and interest of students in the 2nd semester of undergraduate level itself and provide them orientation. He suggested that these students can be given projects in their chosen stream. This will help the students in taking up doctoral research work in that chosen stream as we have the necessary infrastructure in the form of Central Research Instruments Facility (hereinafter referred to as CRIF).

He also explained the process of streamlining the research programme and the mode of evaluation like choice of research program, eligibility for comprehensive examination, constitution of the board evaluating the research scholar, submission of synopsis etc.

2. Dr. Pallav Kumar Baruah, Coordinator of IQAC made a detailed PowerPoint presentation about the different activities undertaken to foster quality from 2011-12 to 2017-18 and enumerated the targets for the academic year 2018-19 and for long term. He presented the review of activities undertaken in the last 5-6 years under the seven Quality Indicator frameworks (QIF):

- i. Curricular Aspects-

1. Programmes started in the university during the review period were enlisted.
2. The initiative of online Teaching Quality Feedback elicited from students at the end of every semester was mentioned.
3. The active role of alumni and rich pool of visiting faculty in curriculum enrichment was appreciated.
4. Value added courses since inception like Awareness course, Environmental course were also mentioned in the curriculum related initiatives.

- ii. Teaching-Learning and Evaluation-
 - 1. 70% of faculty members have doctoral degrees and 15 % are pursuing doctoral research.
 - 2. 150-170 guest faculty visit the university every year and share their rich industrial and research experience.
 - 3. Annual Faculty Self-Evaluation- Faculty share the details of their workload, goals and objectives for the subsequent academic year on an online platform.
 - 4. Multimedia Learning centres, language labs and smart classrooms in all campuses aid in effective teaching learning process.
- iii. Research, Innovations and Extension-
 - 1. Infographics of the trends in publications viz. journal papers, conference papers, Ph.Ds awarded and total academic events were shared for the years in review.
 - 2. Salient features of Central Research Instruments Facility (CRIF) were shared with all the members.
 - 3. Important initiatives of setting up of Research Conferment Cell and Institute Industry Interface Cell were presented to the IQAC members.
- iv. Student Support and Progression-
 - 1. Infographics of student pass percentage and performance of students in different competitive examinations were shared with the members.
 - 2. The role of Placement programme CATALYST (Corporate Aptitude Training – an Arena to Leverage Your Skills and Talents) in facilitating student placements was appreciated.
- v. Governance, Leadership and Management-
 - 1. The coordinator enlisted the different committees which are in place in the university to constantly monitor and improve quality like Strategic Leadership Team, Departmental Committee, Campus Hostel Management Committee, Council of wardens, Board of Studies, Academic Council, Research Conferment Cell, and Research Advisory Board.
 - 2. The aspect of clock-work schedule of the university was highlighted be it the academic calendar, minimum 90 working days per semester, sports calendar, cultural calendar, annual sports & cultural meet, declaration of results, annual convocation, etc.
- vi. Institutional Values and Best Practices-
 - 1. Admissions- Free education for all students and Merit based open admissions policy.

2. Residential Character- Compulsory residential character, spiritual ambience, teaching faculty and research scholars staying with the students in the same hostel and guiding young students in their career path, mentoring them in every aspect of life more in the spirit of a matured companionship and less in the sense of authoritative supervisor.
 3. Academics- Curriculum rooted in Indian Culture and Universal brotherhood, awareness programmes and moral classes reinforcing human values, research with social relevance, integrated five year programmes, favourable student teacher ratio.
 4. Examination and Evaluation system- Semester and grading system right from inception, Continuous Internal Evaluation for effective academic rigor, declaration of results within 60 days of final semester examination
- vii. Infrastructure and Learning Outcomes- The IQAC coordinator highlighted the different edifices built in the review period of 2011-12 to 2017-18 and also touched upon the strides made in ICT which is part of the infrastructure:
1. Infographic of expenditure on Equipment and Infrastructure was presented for the review period.
 2. Mention was made about the different developments in infrastructure like CRIF, Hostel extension building in Prasanthi Nilayam Campus, new hostel building in MDH campus, new academic block in Anantapur Campus, inauguration of Annexe building in Prasanthi Nilayam Campus etc.
 3. New initiatives in the field of ICT (Information & Communication Technology) like fully computerized Electronic Document Dispatch & Receipt System and Question Paper Scrutiny Board of the Examination section, use of software packages like Saral Paypack, Tally and TDSMan in Finance section of the university were presented.
 4. Smart Class Rooms equipped with high quality Data projectors, white boards and computer systems with internet connectivity. Every computer desk top in the campuses has physical connectivity to the in-campus LAN and users enjoy internet connectivity provided by the Institute.
 5. The Central Library of the University is fully networked with INFLIBNET/INFONET with VSAT connectivity with extension of network to academic departments. It was initially supported by the UGC. The UGC INFONET - WAN networks all the universities in India. EBSCO & Scifinder offers a consortia of subscriptions to the

online content of many important periodicals relevant to the research community. The package includes access to a bouquet of around 10,000 journals covering all disciplines. The new addition of EBSCO collection and databases and Science finder are also available in the Institute. All these Journals are available to all the students and staff over our Institute network in all the campuses. These Journals cover various teaching and research disciplines actively pursued by the departments.

6. Two solar power grids one in Muddenahalli Campus- Solar off- grid with 10KVA 240VDC and other one in Prasanthi Nilayam Campus- 800 kWp Solar Roof-top and Ground Mounted system, have been installed.

Student Initiated Rural Outreach programme- Leper colony adoption, Adult education classes, Outreach to the patients treated in Super Hospital for post operative followup, Village adoption, Popularizing *bottle bulbs* in rural communities etc.

3. The coordinator also informed on the Student Initiated Rural Outreach programme- Leper colony adoption, Adult education classes, Outreach to the patients treated in Super Hospital for post operative followup, Village adoption, Popularizing *bottle bulbs* in rural communities etc.

4. Targets for 2018-19 and Long Term Objectives

- i. Curricular Aspects-
Formulating POs, PSOs and COs for all programmes and courses, setting up of Syllabus Technical Review Committee, Effective Alumni Engagement in Curriculum development and formulating structured feedback mechanism on a periodic basis from all stake holders- Students, Alumni, Parents, Employers, Administrators etc.
- ii. Research, Innovation and Extension-
 1. Formulating a well-defined research policy for promotion of research and preparing a vision document for the next 10 years.
 2. Promotion of innovation ecosystem, translational research for societal benefit.
 3. Stronger research collaboration with sister medical institutions for integrated health management in the field of Bone diseases, Eye diseases, Cardiovascular diseases, Neurological diseases, Amyloid diseases and Autologous Chondrocyte implantation.

4. Stronger research collaboration with Academia and Industry in the field of Biomarkers & Therapeutic targets, Antibiotic resistance, Pharmaceutical derivatives, Bio-medical sensors and Functional Materials, Alternative Therapy, Medical Imaging and Integrated Watershed Management.
5. The coordinator then informed that the Institute is planning to take up a survey in order to assess students' satisfaction and outcome of the effort put in the campuses. This should include an impact analysis of the Five Fold process of refinement through the Sri Sathya Sai System of Integral Education, namely Intellectual, Physical, Cultural, Devotional and Service on the students. It is being planned to include feedback from all stakeholders for the purpose of this impact analysis.
6. The Vice-Chancellor gave the following suggestions to the cell:
 - i. To conduct an audit to ascertain the influence of integral education on their academic achievements. It was felt that it can be done as a comparative study vis-à-vis others universities.
 - ii. Plan to start a vocational training centre to teach the local populace vocational skills like plumbing, electrical work etc. Preliminary talks have already happened with All India President, Sri Sathya Sai Seva Organizations in this regard. This can be part of Village Empowerment Programme. It can also explore aspects like Soil quality, farmer empowerment etc.
 - iii. Allow external bodies to do research in our university and utilize the facilities available in Central Research Instruments Facility (CRIF)
 - iv. Innovative methods can be adopted to add value to Groundnut shell, rice husk and try to a solar panel grade silicon out of it, if not a semiconductor by reducing the SiO₂ using the expertise of Departments of Chemistry and Biosciences. Process can be developed to produce nutritional millet cookies.
7. Prof. B Raghavendra Prasad had the following suggestions:
 - i. Look at the feasibility of starting M.Tech. Medical Instrumentation course and money spent on instruments is enormous and 70 % are imported. Government also supports and funds such programmes
 - ii. Encourage faculty and researchers to publish in journals with high citation index, citation index and impact factor.
 - iii. Take steps to have an alumni cell in the institute
 - iv. Look at the feasibility of Technology Incubation cell.
 - v. The number of adjunct faculty in the university should be more than the present number.

- vi. Citing the infographic of decrease in GATE qualification and increase in UGC- JRF/NET he observed that this shows more interest in Research among students which is a national scenario now. Dr. R Sai Sathish, Deputy Coordinator, IQAC mentioned that in the last year, 8 out of 11 M.Sc. Chemistry students took up Ph.D. as a career path.
- vii. He also suggested that the teachers of local colleges and high schools can be given subject oriented training by the faculty of the institute. The university can hold once a year conference for teachers in and around Prasanthi Nilayam and impart them the required skills.

These valuable inputs were taken into consideration by the cell and work had already started on few aspects like having an incubation centre in Brindavan campus of the institute with the help of Tata Trust and also the university is in the process of having a formal Alumni Cell very shortly. A university wide exercise was already undertaken to identify the various reputed journals where the faculty and research scholars can publish. The Coordinator proposed to set up a cell for running short term training programmes for local teachers as suggested by the external expert.

- 8. Dr. Prakash Khanchandani enquired about the optimal utilization of CRIF and whether log books are being maintained and he also suggested that university should think of organizing a global conference to showcase CRIF.

The Vice chancellor said that the university is mulling over outcome based initiatives in CRIF and also informed the IQAC members that a brochure of CRIF is ready and very soon a website fully dedicated to CRIF is going to be launched.

- 9. Mrs. Sujatha R made the following points
 - i. She enquired about the steps being taken to improve the performance of below-the-threshold feedback received by faculty in the Teaching Quality Feedback. She suggested that based on necessity teachers can be encouraged to go for refresher courses and teacher training courses.
 - ii. She also offered office space for computer literacy programmes if the institute wished to conduct such programs for the local population.
- 10. The Director of Anantapur campus shared few of the extension initiatives being carried out in their campus like adult literacy programmes, creating awareness about preservation of water. The campus is also planning to include nutritional plan for different individuals in the nearby villages in collaboration with department of Food & Nutritional Sciences.

11. The Controller of Examinations narrated an anecdote where Bhagawan Baba, the Revered Founder Chancellor had told Sri Ratan Tata, the Former Chairman of the TATA group, about the importance of pre-natal nutrition.

Sri Sathya Sai Mobile Hospital is doing yeoman service in this field and it was proposed to invite Dr. Narasimhan, director of the mobile hospital to give a presentation at the university about the different aspects of nutrition, its deficiencies in the rural populace and how to address it.

12. Dr. (Ms.) N Srividya, HoD of Dept. of Food & Nutritional Sciences, proposed to conduct a one-day workshop cum demonstration on Food Safety and Nutritional plan.
13. Sri G Aditya, the student representative, made the following points:
- i. The unique aspect of Integral Education system the self-reliance program that is an integral part of hostel life in Sathya Sai hostels can be highlighted citing the impression it created on the members of Deemed University committee which visited the Institute in December 2017.
 - ii. The work of CATALYST, as a formal placement cell also can be highlighted by the IQAC members.
 - iii. He also shared the details of local Chitravati river clean up and the tree plantation drive taken up by the Prasanthi Nilayam Campus as part of their extension activities.

The meeting came to an end with a prayer.

Sd/-
Chairman (IQAC)

