

JSS Academy of Higher Education & Research (JSS AHER), Mysore, India

Compendium

SDG Goal 9



SUSTAINABLE DEVELOPMENT GOAL 9

INDUSTRY INNOVATION AND INFRASTRUCTURE

1. Introduction to the goal:

A functioning and resilient infrastructure is the foundation of every successful community. To meet future challenges, our industries and infrastructure must be upgraded. For this, we need to promote innovative sustainable technologies and ensure equal and universal access to information and financial markets. This will bring prosperity, create jobs, and make sure that we build stable and prosperous societies across the globe.

It consists of Develop quality, reliable, sustainable, and resilient infrastructure. Promote inclusive and sustainable industrialization. Increase access of SMEs to financial services and markets. Upgrade and retrofit existing infrastructure to make industries sustainable. Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries.

Investment in infrastructure and innovation are crucial drivers of economic growth and development. With over half the world population now living in cities, mass transport and renewable energy are becoming ever more important, as are the growth of new industries and information and communication technologies.

Technological progress is also key to finding lasting solutions to both economic and environmental challenges, such as providing new jobs and promoting energy efficiency. Promoting sustainable industries, and investing in scientific research and innovation, are all important ways to facilitate sustainable development.

2. Efforts at glance:

- Sustained development of physical infrastructure
- Regular upgrading library and learning infrastructure
- Providing conducive environment for innovation
- Supporting innovations in patient care practices
- Encouraging faculty and students to undertake innovations through guest lectures and seminars
- Dissemination of innovations through patents and publication
- Undertaking research projects with innovative ideas and concepts
- Expanding global access and collaboration to research & innovation

3. Efforts to achieve the goal:

- 1. Innovation: Continuous modifications and alterations of the existing infrastructure to suit the needs of emerging areas of pharmaceutical Sciences.
- 2. Renovation of Pharmacology laboratory.
- 3. Modification of Regulatory Affairs laboratory.
- 4. Microbiology lab with clean area and environment to simulate dispensing of chemotherapeutic agents.
- 5. Auditorium with WIFI, centralized AC and 3D surround sound.
- 6. Herbal Garden Extension.
- 7. Communication infrastructure computers, printers, laptops, internet speed alternate internets, intercoms.
- 8. Information infrastructure.
- 9. Transportation facility college bus and car.
- 10. Canteen facility.
- 11. A resilient infrastructure exists to carryout activities.
- 12. Generators are efficiently used in cases of power cuts.
- 13. Demography of college for ease of access.
- 14. Participating in Drug Discovery Hackathon.
- 15. Participated in Smart India Hackathon.
- 16. Laurels received for innovation- ARIIA, AICTE recognized innovation cell.
- 17.100% of the m.Pharm students of RA and QA undergo 6 month project work in Pharmaceutical industry.
- 18. Depending on the availability of the projects , the M.Pharm students of other departments carryout projects in industries upto 10-25%.
- 19. Year on year the number and quality of publications are increasing .Also the culture of patenting is in place.
- 20. JSS AHER provides conducive environment for research by providing finance for buying equipment and incure/ include publication charges and patent charges.
- 21. First of its kind innovative PG programmes started IP, RA Cosmeceutics.
- 22. Value added PG diploma and certificate programmes started.

4. Infrastructure and Innovation Practices

Bridging this digital divide is crucial to ensure equal access to information and knowledge, as well as foster innovation and entrepreneurship. JSS AHER is known for its quality, reliable, sustainable, and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.JSSAHER has various regional and transborder infrastructure such as CADRAT, TIFAC, DTL, Poison and Drug Information Centre, IIIC, IIC, etc., to support SDG 9.

4.1 Centre For Experimental Pharmacology And Toxicology (CPT)

https://jssuni.edu.in/jssaher/jssaher-infra/animal-house/animal-house-home.html

Centre for Experimental Pharmacology and Toxicology is an BSL - II barrier facility supports the preclinical research activities of JSS AHER Constituent Colleges (medical, dental, pharmacy, life sciences) and Departments. The facility is licensed (261/PO/ReBi/S/2000/CPCSEA) by CPCSEA, Govt. of India, to conduct experiment on small animal models and breeding for in-house use.

JSS Academy of Higher Education & Research (JSS AHER) has endowed an extensive ABSL2 preclinical facility "Centre for Experimental Pharmacology and Toxicology" to support the comprehensive research activities of its constituent pharmacy, dental. life sciences) and departments. The facility colleges (medical, is licensed (261/PO/ReBi/S/2000/CPCSEA) by Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA), Govt of India, to conduct experiment on small animal models and breeding for in-house use. The vivarium is located in a serene and peaceful ambiance within the University campus. A built space of 7000 sq ft primarily constitutes rodent barrier facility, small animal clinico-pathology labs and supportive suites. Animal facility plant is built in compliance with guidelines of National Institutes of Health (NIH), USA and CPCSEA, Govt of India.

About CPT

Physical Plant

- CPT is a BSL-II barrier facility with dual corridors, temperature, humidity, light, noise and differential air pressure monitored 24X7
- Epoxy terrazzo coated floor, concrete masonry walls, and moisture resistant ceilings
- Facility is provisioned with Isolated ventilated cages
- Clinicopathology, test item control office, archive on site

Animal Care

Animal care is monitored on a daily basis including weekends and holidays

- Health monitoring within the animal facilities is ensured through a sentinel program, supplier reports, and environmental testing by trained veterinarians
- Sterilised Bedding, food and portable mineral water
- Consistent healthcare from study initiation to study completion
- Practice in force on humane endpoints policy to minimize pain and discomfort

Species

We have experience with and are equipped to conduct studies in a wide array of species

- Rat
- Mouse
- Rabbit
- Guinea Pig

4.2Certifications And Accreditation

CPT is registered ((261/PO/ReBi/S/2000/CPCSEA)) with the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA), Govt of India, to conduct experiment on small animal models and breeding for inhouse use

************************************** nt of Indi stry of Ea ment, Forest and Cl CERTIFICATE This is to certify that the registration of Animal House Facility of Jagadguru Sri Shivarathreeshwara Medical College, Mysore, Karnataka with CPCSEA has been renewed for Research for Education purpose and Breeding for in-house use of Small Animals bearing registration number 261/PO/ReBi/S/2000/CPCSEA. The registration is valid for five years from 19/03/2019 to 18/03/2024. Minal Deputy Secretary (AW) & Me *****************

Certifications and Accreditation CPT is registered ((261/PO/ReBi/S/2000/CPCSEA)) with Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA), Govt of India, to conduct experiment on small animal models and breeding for in-house use.

4.3 Policies And Procedures

ANIMAL FACILITY ACCESS

• Facility Access Requirements

Projects initiation will be planned as per the master schedule of the facility; hence advance notification should be given to the facility. Biometric card/fingerprint access will be issued to an individual when all of the following are completed:

IAEC online course Active Form-B approval Online risk assessment course

• Facility Access Procedure

Access to the facility will be provided by the submission of an **access request only**. Completed forms should be returned to "The Coordinator, CPT" electronically (cpt@jssuni.edu.in) as a scanned copy (PI signature is required) or as hard copy.

• Facility Hours of Operation

Facility access is limited to the hours of 9.30 a.m. to 5.30 p.m., although specific exceptions may be granted when required by the animal protocol. Standard light cycles for animal rooms are set at 6 a.m. for lights on and 6 p.m. for lights out in order to allow research animals to maintain a regular circadian rhythm. Entrance to animal rooms after 6 p.m. is specifically restricted as it may have a detrimental effect on animal welfare, specifically influencing circadian rhythm and the stress response.

• Occupational Health Program

Occupational Health Program is mandatory for all faculty, students, and caretakers while working in animal facility. The purpose and goal of the Occupational Health Program is to identify, evaluate, manage, and reduce potential health risks associated with the care and use of animals at the institution.

All personnel to have vaccinated before start of the research on animals

Laboratory animal allergies are relatively common in work-related condition. Personnel with history of atopy, uticaria and pre-existing non-work related allergies make ensure his/her safety according to their medical needs

Pregnant women are advised to restrict working with animals

Periodic pest control program is in practice to prevent and control vermin in animal facilities

• Animal Requisition Process and Procedure

An active IAEC approved protocol is necessary for ordering animals. CPT will procure animals for the investigators from CPCSEA, Govt. of India, approved (with valid registration) commercial breeders or imports from approved sources.

For more details, please contact "The Coordinator, CPT, JSS AHER"

• Security

The facility is provided with 24X7 security service for safety and to handle emergency conditions. Entry and exit of personnel is also recorded manually.

To ensure the study safety and confidentiality, data safety, biometric access is in place in the key area of the facility.

4.4 3R's Principle



CPT is strongly committed to the humane care and ethical use of animals in research. All animals involved in research at JSS AHER receive the quality care and are used humanely in adherence with the guidelines laid down by CPCSEA, Govt of India.

Use / dissection of animal for teaching / demo is strictly not allowed in CPT. All possible steps are considered to implement 3R's principle (Replacement, Reduction and Refinement) in using animals in research.

4.5 Publications

- M Sangeetha, D Chamundeeswari, CS Babu, C Rose, V Gopal. Attenuation of oxidative stress in arthritic rats by ethanolic extract of Albizia procera benth bark through modulation of the expression of inflammatory cytokines. Journal of Ethnopharmacology 250, 112435. 2020. IF: 3.5
- Musthafa Mohamed Essa, Marzieh Moghadas, Taher Ba-Omar, M Walid Qoronfleh, Gilles J Guillemin, Thamilarasan Manivasagam, Arokiasamy Justin-Thenmozhi, Bipul Ray, Abid Bhat, Saravana Babu Chidambaram, Amanda J Fernandes, Byoung-Joon Song, Mohammed Akbar. Protective effects of antioxidants in Huntington's disease: an extensive review. Neurotoxicity Research. 35 (3), 739-774. 2019. IF: 3.5
- Meena Kishore Sakharkar, Sarinder Kaur Kashmir Singh, Karthic Rajamanickam, Musthafa Mohamed Essa, Jian Yang, Saravana Babu Chidambaram. A systems biology approach towards the identification of candidate therapeutic genes and potential biomarkers for Parkinson's disease. PloS one 14 (9). 2019. IF: 2.8
- Thotapalli Parvathaleswara Sastry Sathyaraj Weslen Vedakumari, Rethinam Senthil, Sathiya Sekar, Chidambaram Saravana Babu. Enhancing anti-cancer activity of erlotinib by antibody conjugated nanofibrin In vitro studies on lung adenocarcinoma cell lines. Materials Chemistry and Physics 224, 328 333. 2019. IF: 2.74
- Sathiya Sekar, Sugumar Mani, Barathidasan Rajamani, Thamilarasan Manivasagam, Arokiasamy Justin Thenmozhi, Abid Bhat, Bipul Ray, Musthafa Mohamed Essa, Gilles J Guillemin, Saravana Babu Chidambaram.

Telmisartan ameliorates astroglial and dopaminergic functions in a mouse model of chronic Parkinsonism. Neurotoxicity research 34 (3), 597-612. 2018. IF: 3.5

- Saravana Babu Chidambaram, Abid Bhat, Bipul Ray, Mani Sugumar, Serva Peddha Muthukumar, Thamilarasan Manivasagam, Arokiasamy Justin Thenmozhi, Musthafa Mohamed Essa, Gilles J Guillemin, Meena Kishore Sakharkar. Cocoa beans improve mitochondrial biogenesis via PPARγ/PGC1α dependent signalling pathway in MPP+ intoxicated human neuroblastoma cells (SH-SY5Y). Nutritional neuroscience, 1-10. 2018. IF: 3.27
- Saravana Babu Chidambaram, Ranju Vijayan, Sathiya Sekar, Sugumar Mani, Barathidsan Rajamani, Ramakrishnan Ganapathy. Simultaneous blockade of NMDA receptors and PARP-1 activity synergistically alleviate immunoexcitotoxicity and bioenergetics in 3-nitropropionic acid intoxicated mice: Evidences from memantine and 3-aminobenzamide interventions. European journal of pharmacology 803, 148-158. 2017. IF: 3.2
- Suresh K. Rayala & Ganesh Venkatraman Ganga Baskar, Mathangi Ravi, Jiban Jyoti Panda, Anjali Khatri, Bhawna Dev, Roy Santosham, Sekar Sathiya, Chidambaram Saravana Babu, Virander Singh Chauhan. Efficacy of Dipeptide-Coated Magnetic Nanoparticles in Lung Cancer Models Under Pulsed Electromagnetic Field. Cancer Investigation 35 (6), 431. 2017. IF: 2.23
- S Jagadeeshan, A Subramanian, S Tentu, S Beesetti, M Singhal, S Raghavan, RP Surabhi, J Mavuluri, H Bhoopalan, J Biswal, RS Pitani, S Chidambaram, S Sundaram, R Malathi, J Jeyaraman, AS Nair, G Venkatraman, SK Rayala. P21-activated kinase 1 (Pak1) signaling influences therapeutic outcome in pancreatic cancer. Annals of Oncology 27 (8), 1546-1556. 2016. IF: 13.9
- Arathy S Kumar, Sankar Jagadeeshan, Anirudh Subramanian, Saravana Babu Chidambaram, Rohan Prasad Surabhi, Mahak Singhal, Hemadev Bhoopalan, Sathiya Sekar, Ravi Shankar Pitani, Prathiba Duvuru, Ganesh Venkatraman, Suresh K Rayala. Molecular mechanism of regulation of MTA1 expression by granulocyte Colonystimulating factor. Journal of Biological Chemistry 291 (23), 12310-12321. 2016. IF: 4.1
- Mohammed A.S. Khan Udaiyappan Janakiraman, Thamilarasan Manivasagam, Arokiasamy Justin, Thenmozhi, Musthafa Mohamed Essa, Rajamani Barathidasan, Chidambaram SaravanaBabu, Gilles J Guillemin. Influences of chronic mild stress exposure on motor, non-motor impairments and neurochemical variables in specific brain areas of MPTP/probenecid induced neurotoxicity in mice. PLOS One, 11(1): 146671-146672. DOI: 10.1371. 2016. IF: 2.8
- T.Kamarul. C. Saravana Babu, P. Anbarasi, S. Sathiya, H. Sumathy, V. Ranju, T. Lakshmikantham, R. Jayasree, Hanumanth Rao Balaji raghavendran. Sesame indicum, a nutritional supplement, elicits anti-amnesic effect via cholinergic pathway in scopolamine intoxicated mice. Environmental Toxicology, doi: 10.1002/tox.22196. 2015. I.F. 2.65.

4.6 Collaborations

Grants: 2019-2022

Project Tittle	Funding agency	Amount	Principal Investigator
Geriatric chronic cerebral hypoperfusion: Role of short chain fatty acids supplementation on Gut-Brain Axis function, Protein misfolding, Autophagy and Cognition	DBT	50 Lakhs	Dr Saravana Babu Chidambaram

4.7 Collaborations

Internationals

- NIAAA, NIH, USA
- Macquarie University, Australia
- Sultan Qaboos University, Oman
- University of Saskatchewan, Canada
- Seton Hall University, USA
- University of Johannesburg

National

- CSIR Central Food Technological Research Institute, Mysuru
- CSIR-IITR Lucknow
- IIT, Madras
- Department of Chemistry, University of Delhi
- National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore
- Birla Institute of Technology and Science, Hyderabad
- Annamalai University, Tamil Nadu

4.8 Training & Courses

• Externship



• Training



• Online Courses



4.9 Scientific Services

With cutting edge technologies in scientific research along with wide range of experienced professionals, CPT alliances with its partners to bring forth endless variety of disease models and preclinical services in the following areas

- Pharmaceuticals
- Medical devices
- Agrochemicals and Pesticides
- Food products and Nutraceuticals
- Folklore Remedies

For more details reach us at: cpt@jssuni.edu.in/+91 9042222277

<u> DMPK - In vivo PK</u>

Pharmacokinetics by various routes viz., oral, intravenous and subcutaneous in mouse models in (SAM, Balb/C), rats

(Wistar, Sprague Dawley)

- Tissue Distribution
- Brain to Plasma Ratio

Pharmacological services

CPT have validated animal models on

- Alzheimer's and Parkinson's disease (Chemical and ICV surgical model)
- Cerebral stroke (middle cerebral artery, 2/4 vessels occlusion surgical models)
- Depression (Chemical and behavioral CUMS models)
- Epilepsy (Chemical and ICV surgical models)
- Gastric ulcer (Surgical, chemical models)
- Diabetes (Chemical, diet and genetic models)
- Hepatic diseases (Drugs and chemical models)

- Pain and Inflammation models (carrageenan, cotton pellet granuloma, formalin and acetic acid models))
- Nootropics (radial arm maze, passive avoidance, transfer latency)
- Rheumatoid arthritis (FCA model)
 Preclinical Toxicology Services
 Biomarkers

Toxicology is a highly eclectic branch of medical science that deals with study of toxic / adverse effects of chemicals, biologics in living systems. This branch of science serves the society in many ways by not restricting to protect humans and the environment from the deleterious effects of toxicants but also to facilitate the development of newer drugs. CPT is approved (license no: 155/PO/Re/S/1999/CPCSEA) by Committee for the Purpose of Control and Supervision of Experimentation on Animals (CPCSEA), Ministry of Environment and Forests, Government of India, to conduct experiments on animals (rodents, guinea pigs, rabbits)

Test Systems

- Mouse
- Rat
- Guinea-pig
- Rabbit

Routes of Exposure

- Oral
- Dermal

Toxicology studies are performed in accordance to the following guidelines:

- Organization for Economic Co-operation and Development (OECD)
- Schedule Y
- ISO (Medical devices)

Acute Toxicity

Single / Two species (rodent and non-rodent), Observations for 14 days, Clinical and gross morphological effects

- Acute Oral Rat Limit Test
 Preview
- Acute Dermal Toxicity Preview
- Primary Dermal Irritation Rabbit Study
 Preview
- Primary Ocular Irritation Rabbit Study
 Preview
- Guinea Pig Dermal Sensitization Study

Preview

Sub-Acute / Sub-Chronic toxicity

Chronic Toxicity

Biomarkers

Cellular assays

Cytotoxicity assays using human / animal cell lines

• Molecular biology

Single target protein or co-localisation, cytokines expression, oxidative stress markers expression, TUNEL assay, double immunofluorescence assays

Histopathology and Immunohistochemistry

Fixing, trimming, embedding, sectioning and staining tissues. Special requirements with selective staining or immunohistochemical also performed

• Biochemical assays

ELISA and fluorescence assays, inflammatory markers, cell membrane markers, oxidative stress markers and antioxidant proteins such as superoxide dismutase, catalase, glutathione, etc.

Biochemistry Lab



Preclinical Pathology Lab



PPE Change Rooms



Air Shower Entry



Entrance to Clean Corridor



Clean Corridor



Clean Corridor



Clean Corridors



Rodent Room



Cages Autoclave



Service corridor



Haematology Analyzer



HPLC



Multi Mode Reader



Stereotaxic Apparatus



IVC Cage



5. Center for Advanced Research and Testing

CADRAT

Centre for Advanced Drug Research and Testing (CADRAT)

The Center for Advanced Drug Research and Testing (CADRAT), under the aegis of JSS Consultancy Trust, is functioning in the college to make effective use of the expertise and facilities available with the institution to the Government, public and private bodies in pursuit of advancement of pharmaceutical sciences and research.

Approvals:

- The CADRAT has been approved by the Drugs Controller General of India, Government of India for carrying out bioavailability and bioequivalence of new drugs.
- CADRAT is accredited by ISO 9001:2015 for drug product development by TUV-SUD.

Bioequivalence / Bioavailability studies

The functions of BA/BE division

- Literature search and preparation of product profile.
- Method development
- Method validation protocol
- Method validation
- Audit
- Method SOP
- Analysis of clinical sample
- Repeated analysis
- Pharmacokinetics
- Statistical analysis
- Report
- Audit
- Final report
- Generation of chromatograms

6. TIFAC CORE FOR HERBAL DRUG RESEARCH





TIFAC CORE in Herbal Drugs



Key Milestones & Impact of TIFAC CORE- HD

National Recognition



Re:Think INDIA, a Nationalist think tank has conferred upon JSS College of Pharmacy, Ootacamund, the Bharat Ratna Atal Bihari Vajpayee Award for Innovation 2017, on May 11, 2017, the National Technology Day, at India International Centre, New Delhi, for the patented Herbal Drugs, namely Hapenz & NSF-3 developed by TIFAC Centre of Relevance and Excellence in Herbal Drugs, JSS College of Pharmacy, Ootacamund and marketed by M/s Tablets (India) Ltd., Chennai.

Product Development and Transfer

- HAPENZTM, a polyherbal syrup formulation (natural appetizer) for children was developed and the technology transferred to our industrial partner. The product was commercialized by M/S TABLETS INDIA Ltd., Chennai and it is well received by the market.
- "NSF-3", a polyherbal tablet formulation for sleep was developed and the technology was transferred to our industrial partner, TABLETS INDIA Ltd., Chennai. It has been commercialized.





Globalisation and Networks

The centre has hosted and trained ELEVEN (11) International Research Fellows from Ivory Coast, Uganda, Kenya, Rwanda and Potland, supported by CV Raman, NAM S&T and INSA JRD TATA fellowships.

a organized STY (6) International

https://jssuni.edu.in/JSSWEB/UDHP.aspx?PID=43 -TIFAC

7. Drug Testing Laboratory



https://jssuni.edu.in/JSSWeb/UDHP.aspx?PID=339DTL

Drug and Poison Information Centre

The Drug and Poison Information Centre (DIC), located in the Government District Headquarters Hospital, Ooty is established with the blessings of his holiness Swamiji under Department of Pharmacy Practice, JSS COLLEGE OF PHARMACY, Ooty (A Constituent College of JSS Academy of Higher Education and Research, Mysuru). This centre provides consultative services to health care professionals. DIC responds to drug and therapeutics-related information requests from health care professionals practicing throughout India. Additionally, the DIC faculty assist health care workers on formulary matters.

This drug information centre has been established in the Government Headquarters Hospital, Ooty, for easy accessibility of the drug information services by the healthcare professionals and the patients. Unbiased, comprehensive and relevant information regarding the drugs and therapeutics as well as other related healthcare work is provided to the physicians and other health care professionals to support better patient care.

With the development of Android application for DIC the centre has attained new horizons of Drug information services. DIC functions under Head, Department of Pharmacy Practice under the supervision of Principal, JSS College of Pharmacy, Ooty.

Contact Us: Drug and Poison Information Centre Department of Pharmacy Practice JSS College of Pharmacy (A Constituent College of JSS Academy of Higher Education and Research, Mysuru) Udhagamandalam-643 001 The Nilgiris, Tamilnadu, India Phone: 0423-2444450 (10 AM to 12.30 PM) 0423-2443393 E-mail: <u>druginfo@jssuni.edu.in</u>, jssdicooty@gmail.com

Important Links:

https://jssuni.edu.in/JSSWEB/UDHP.aspx?PID=44

SI. No.	Name and details of the Expert	Date	Lecture Topic	No. of participants
1.	Dr. Guna Magesan, Formaer vice chancellor of Institute of Advanced Research, Gujarat, Director, International Operations, Manusgya Blossom	er of 18-2-2019 Nano Siddha Medicine rat, Dept. Pharmace som utics		62
2.	Dr. Jayadev S Patil, General Management-Formulation R & D, Arzest Pharma(India) Pvt. Ltd. Bengaluru	5-3-2019 Dept. Pharmace utics	"Current Generic Formulation Scenario in Regulated Market"	41
3.	Dr. Basappa S, Assistant Professor, University of Mysore	12-4-2019 Dept. Pharmace utics	Target based discovery of novel drug-like compounds against cancer	40
4.	Dr. Amit Asati, Asso Director, FRD Dr.Reddys lab, Hyderabad	08-5-2019 Dept. Pharmace utics	Carrier prospective for the PG students and Ph.D. scholars	44
5.	Dr. V Kalaiselvan, Principle Scientific Officer, Indian Pharmacopoeia Commission, Mintry of Health Welfare, Government of India, Ghaziabadon	18.6.2019 Dept. Pharmace utics	 The Role of Indian Pharmacopeial Commission for safety and Quality medicines Current Challenges for academia and industry 	78
6.	Mr. Tahniganathan, General Manager, Saimira Inno Pharm(P), Ltd. Chennai	25.6.2019 Dept. Pharmace utics	Expectation of pharm Industry from students for their better career perspective	44
7.	Mr. Amar Ptankar, Head-Global- API/FDF, CIS/ME, RPC Life sciences limited, Mumbai	4.7.2019 Pharmace utics	Carrier opportunities for pharmacy students in marketing and other related areas in pharm.	67
8.	Mrs. Rekha Kumar (Our Alumni) Quality Manager Reckitt Benckiser UK	22.8.2019 Pharmace utics	Clinical Trails	35
9.	Mr. Kannan Rajagopal Quality Compliance Leader Reckitt Benckiser Ltd. UK	22.8.2019 Pharmace utics	GMP	43
10.	Mr. Vijay, Programme Manager	4 th & 5 th	The Demonstration &	

Industry Institutions Interaction Cell - Activities

Institution's Innovation Council (IIC)

About Institution's Innovation Council (IIC)

Why Institution's Innovation Council?

Ministry of Human Resource Development (MHRD), Govt. of India has established 'MHRD's Innovation Cell (MIC)' to systematically foster the culture of Innovation amongst all Higher Education Institutions (HEIs). The primary mandate of MIC is to encourage, inspire and nurture young students by supporting them to work with new ideas while they are in formative years. MIC has envisioned creation of 'Institution's Innovation Council (IICs)' across selected HEIs. A network of these IICs will be established to promote innovation in the Institution through multitudinous modes leading to an innovation promotion eco-system in these campuses.

Major Focus of IIC

To create a vibrant local innovation ecosystem

Start-up/ entrepreneurship supporting Mechanism in HEIs

Prepare institute for Atal Ranking of Institutions on Innovation Achievements Framework (ARRIA).

Establish Function Ecosystem for Scouting Ideas and Pre-incubation of Ideas

Develop better Cognitive Ability amongst Technology Students

Functions of Institution's Innovation Council

To conduct various innovation and entrepreneurship-related activities prescribed by Central MIC in time bounded fashion.

Identify and reward innovations and share success stories.

Organize periodic workshops/ seminars/ interactions with entrepreneurs, investors, professionals and create a mentor pool for student innovators.

Network with peers and national entrepreneurship development organizations.

Create an Institution's Innovation portal to highlight innovative projects carried out by institution's faculty and students

Organize Hackathons, idea competition, mini-challenges etc with the involvement of industries

Institution Innovation Council

9. Sustainable industrialization

JSSAHER Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries. Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets.

JSSAHER has promoted inclusive and sustainable industrialization via TIFAC, CADRAT and DTL which significantly raise the industry type of employment and cross domestic product in line with national circumstances.



TIFAC-Product Development



JSSAHER upgrades infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

month database Nure die Osliffedt erret fters ally delified foury Dr. A Mukhopadhyay account - liked (as the defeat are seen drawfied) Head R&D Infrastructure Division GOVERNMENT OF INDIA Email ted@nic.in MINISTRY OF SCIENCE & TECHNOLOGY Department of Science & Technology Technology Bhawan, New Mehrauli Road, New Dehi 110015 Sik (FST/LS-4/2017/22 16⁴ January 2018 Subject: Your Proposal under "FIST Program - 2017" Owar Sir, This is in contection with the oforecold proposal submitted by your Deportment/ Centra / College for support under the FIST Program of DST. We are happy to inform you that the aforesoid proposal has been identified for support in Level - 0/ Level / Level II category by the DST based on the recommendations of the FIST Advisory Board (FISTA3). The details of the recommendations for 5 years duration of the project are given below: To augment the recearch facilities in the Department (Being private University the emount would be shared us 50:30 valia). E - Hs 30.0L (Particle Size Analyzer-Rs 25L, Nano Spray Drier- Rs 10, Texhere Analyzer-Rs 7.5L, Multi-unit Diffusion Cell Assembly- Rs 7.5L M - R. 8.0L Tutul Rs.58.0 Lokh It may be noted that the allocations indicated now above with respect to any Equipment or any other budget heads are the upper limit of the budget as they are purely based on accommendations and also tentative. However, Department shall now finally firms configurations of each Equipment, Computational & Networking facility in next shall now finally firm-up *pecnical Computer Infrastructure Facility as recommended above for acquiring by the Department Centrel School College and actual cost of this project shall firmed up based on these inputs from you. The support for the 'Maintenance' will be provided as per norms under FIST Program. The type of equipment and to provide the the content of the provided as per norms under FIST Program. The type of equipment and to w configurations finalized new by the Department/Canitiel School College would not be possible to change during the course of implementation of the said project. For enabling us to process the case further, including the release of 1° installment of grant now, you are requested to please upload the following the release of 1° installment of grant now. documents latest by befare 5th February 2018 (Menday) only through e-PMS webpartel of the DST using the registered USER ID and PASSWORD: 1) One each Budgetory Quotorius from Equipment supplier (all-inclusive Le. Cuttern Duty, Bank & other Charges) for all Equipment recommended for support. Please ensure that the budgetary cost is not on inflated one with respect to its specifications given. In case, Equipment list "to be identified & prioritized", pieces submits quototions of the identified & prioritized Equipment only. Under Teaching Facility Support' for Colleges, only laboratory equipment to be utilized for experimental purposes shall be proposed. Teaching Aids like LCD Projector, Smart Boards etc. are out of scope under PIST support and shall not be projected by the College. 2) Details plots for implementation of the 'Networking and Computational Pacifiker' (NW) under the support as per guidelines montioned in the Terms and Constituous of DST-FIST Program available at the Website: www.fist-dst.org-3) Details & their cost estimates of hems/ activities id & proposed under 20118 Power 120 North 1 infrastructure Foolity' which includes the list of Books,

DST FIST Sanction Letter - Pharmaceutics

11. DST FIST Sanction Letter – Pharmacology

DST-FIST-84.00 Lakhs (2015) **PI-Head of the Department** Dr A. Bhattacharyya भारत सरकार विद्वार और प्रीयोगिकी मंत्रालय विद्वार और प्रीयोगिकी विभाग देवलेल्वीजे अवर, न्यम महरीली मार्ग नई दिल्ली-110 016 DF A. Bhattacharyya Scientist «'D' INSPIRE & FIST Division Tele: 011-26590539 Telefax: 011-26602193 Email: <u>a.bhattacharyya@nic.in</u> GOVERNMENT OF INDIA MINISTRY OF SCIENCE AND TECHNOLOG DEPARTMENT OF SCIENCE AND TECHNOLOG CINES . 5552122 (EPBAX) TECHNOLOGY BHWW 8. 26664570 7. 20862418 TOTH CFAR No. SR/FST/LSI-574/2013 17th December, 2014 Subject: DST-FIST Program 2013: Support to Department of Pharmacology, JSS University, JSS College of Pharmacy, Rocklands, Nilgiris-643001, (Tamil Nadu). Dear Sir, This refers to your above mentioned project. The Department of Pharmacology, JSS University, JSS College of Pharmacy, Tamil Nadu has been sanctioned a total amount of Rs 84.0 takhs to augment research facilities in the Department in 50:50 mode. Being a private institute, you are requested to submit a Bond on a Stamp Paper of Rs 10/- as per the format available at FIST website. Out of the total sanctioned amount of Rs 84.0 takhs (DST's contribution is: Rs 42.0 Lakhs & JSS University, Tamil Nadu contribution is Rs 42.0 Lakhs). Kindly submit the documents at the earliest, so that necessary actions can be taken at our end for release of 1st installment of grant. With kind regards (A Bhattachaiyya) Dr. M.N.Sathish Kumar, ed. nent of Pharmacology D



Dr. A Mukhopadhyay Head R&D Infrastructure Division Email: <u>tsd@nic.in</u> Tel. + Fax: 011-26602193 भारतसरकार विज्ञान-औरप्रीद्योगिकीमंत्रालय विज्ञान-औरप्रीद्योगिकीविभाग टेक्नोलाजीभवन नयामहरोलीमार्ग् नई दिल्ली - 110016

GOVERNMENT OF INDIA MINISTRY OF SCIENCE & TECHNOLOGY Department of Science & Technology Technology Bhawan, New Mehrauli Road, New Delhi-110016

SR/FST/LS-I/2018/136

December 2018

Subject: Your Proposal under "FIST Program - 2018" [TPN -19539]

Dear Sir,

This is in connection with the aforesaid proposal submitted by your Department/ Centre / College for support under the FIST Program of DST. We are happy to inform you that the aforesaid proposal has been identified for support in Level – 0/ Level-I / Level II/ Level III category by the DST based on the recommendations of the FIST Advisory Board (FISTAB). The details of the recommendations for 5 years duration of the project are given below:

To augment the research facilities in the Department (BeingPrivateUniversity the amount would be shared on 50:50 ratio).

E-Rs.50.0L [HPLC with auto-sampler and PDA detector] M-Rs.8.0L

Total : Rs.58.0 Lakh

It may be noted that the allocations indicated now above with respect to any Equipment or any other budget heads are the upper limit of the budget as they are purely based on recommendations and also tentative. However, Department shall now finally firm-up specifications/ configurations of each Equipment, Computational & Networking facility in Computer Lab, Infrastructure Facility as recommended above for acquiring by the Department/ Centre/ School/ College and actual cost of this project shall firmed up based on these inputs from you. The support

12. DST FIST Sanction Letter – Pharmaceutical Analysis

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13. MODROBS - Sanction Letter

JSSAHER enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

NOTIFICATIONS: K Medical Super Specialty Courses examinations - September 2020 - Results. E-Assessment & Feedback E-Assessment & Feedback Leadership Talk Series - I Leadership Talk Series - II Leadership Talk Series - IV Leadership Talk Series - III MHRD ø tory Telling harmaceutical Product lifecycle duct Development Market Lau nch ttps://jss Educational Records.pdf Show all

14.IIIC – Activities

MHRD - IIC – Activities

https://jssuni.edu.in/JSSWEB/UDHP.aspx?PID=537

JSSAHER FacilitateS sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States .

JSSAHER SupportS domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities

		CONSULTANCY PROJECTS		
SI. No	Date	Particulars	Co-ordinator	Project Cost
1.	10.01.2019	M/s Lyrus Life Science		3,540
2.	28.01.2019	M/s Apex Laboratories Pvt Ltd.Chennai		283,200
3.	04.02.2019	Dr L Ramanathan Apex Laboratories Pvt Ltd.Chennai		141,600
4.	13.02. 2019	Ms yamuna Konganadu Science College CBE		14,160
5.	04.03. 2019	Ms Poorni G Karaigudi	Dr. Praveen T K	14,160
6.	13.03, 2019	M/s Zumutor Biologics Prt Ltd , Satyabalan.M Bangalore.		82,600
7.	21.05. 2019	Etica Clinica Pharma		44,250
8.	01.09. 2019	AVS, kottakkal, Kerala - 03		1,29,800
9.	31.10.2019	Heavenly Fuel Pvt Ltd Chennai.		70,800
10.	11.04. 2019	M/s Eurofins Advinus Limited Bangalore		147,500
11.	16.04, 2019	M/s Nextgen Incubator Madurai Tamilnadu		177,000
12.	18.07. 2019	M/s Lyrus Life Sciences Pvt Ltd		143,370
13.	14.09. 2019	Analytical India Pvt Ltd.	Dr K Gowtham	23,600
14.	26.09. 2019	M Analitics, Tamilnadu	Rajan	3,800
15.	20.11. 2019	Mr. Anikit Awasthi, Lovely School of Pharmaceutical Sciences, Punjab.		5,000
16.	20.11. 2019	D Sved, Dr. Sved D, JKKN Dental College & Hospital, Eroad		5,000
17.	10.02. 2019	Ms Ragavi Konganadu Science College CBE	Dr Ashish	1,770
18.	15.02. 2019	Summaya Banu.B CBE	Wadhwani	1,416

14. Consultancy for Industries

9.8 Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020.

Providing online education and webinars, App based activities, Examiners from Foreign university, Drug and Poison information Centre & DLE.

(Teal 01 2013)							
S1. No.	Particulars	Quantity					
1.	Titles	9690					
2.	Volumes:						
2.	1.Reference Books	6465					
	2.Textbooks	6275					
	Total	12740					
з.	No. of Books added in the Academic year 2019-20	520					
4.	E- Books:						
	Clinical Key	1058					
	Library Collection	715					
	PhD Thesis & Dissertations	783					
	Total	2556					
5.	Current Journals Subscriptions:						
	1. National Journals (Print)	17					
	2. Clinical Key (online)	684					
	3. Science Direct (online)	70					
	4. Bentham Sciences (online)	23					
	5. DELNET (online)	200					
	Total	994					
6.	Databases:						
	1. Clinical Key	1					
	2. Scopus	1					
	3. Science Direct	1					
	4. Micromedex	1					
	5. Medicine Complete	1					
	6. Web of science	1					
	7. Sci-finder	1					
	8. DELNET	1					
	Total	8					
7.	Total No. of Journals Back Volumes	2693					
8.	Ph. D Thesis & Dissertations:						
	B Pharm	434					
	M Pharm	1712					
	Pharm D	66					
	Ph.D. Thesis	176					
	Total	2388					
	Details of Library and Information Cent	re					

(Year	of	2019)

https://jssuni.edu.in/JSSWeb/UDHP.aspx?PID=378



Tally Programme

	А	В	С	D	E	F	G
1	Courses	Tests	Taken	Not taken	Pass minimu	Fail	Total learners
2	LMS - Demo Course Work	Example Test	1	41	0	1	
3	Pharmacotherapy-II (2019-20)	MCQ Test - HIV	29	0	15	14	
4	Pharmacotherapy-II (2019-20)	MCQ Test - Tuberculosis	29	0	20	9	
5	Pharmacotherapy-II (2019-20)	MCQ Test - Breast Cancer	29	0	13	16	
6	Pharmacotherapy-II (2019-20)	MCQ Test - COVID-19	25	4	20	5	
7	Pharmacotherapy-II (2019-20)	MCQ Test - Meningitis	26	3	1	25	
8	Pharmacotherapy-II (2019-20)	MCQ Test - Rational Use of Antibiotics	29	0	6	23	
9	Pharmacotherapy-II (2019-20)	MCQ Test - Renal Failure	29	0	5	24	
10	Pharmacotherapy-II (2019-20)	MCQ Test - Septicemia	28	1	28	0	
11	Pharmacotherapy-II (2019-20)	Model Test - Pharmacotherapy II	29	0	12	17	
12	Pharmacotherapy-II (2019-20)	Open Exam - Skin Disorder	0	29	0	0	
13	Pathophysiology - B Pharm 19 -20	Pathophysiology Test 1	88	9	3	85	
14	Pathophysiology - B Pharm 19 -20	Pathophysiology Test 2	88	9	37	51	
15	Pathophysiology - B Pharm 19 -20	Pathophysiology Test 3	90	7	31	59	
16	Pathophysiology - B Pharm 19 -20	Pathophysiology Test 4	90	7	64	26	
17	Pharmaceutical Organic Chemistry - I B.Pharm 2019-20	Carbonyl compounds	6	81	0	6	
18	PTK Class	MCQ	0	2	0	0	
19	Social and Preventive Pharmacy B Pharm 19-20	Unit III: MCQs Test on National Health Progrma	96	22	14	82	
20	Social and Preventive Pharmacy B Pharm 19-20	Unit IV: MCQs Test on National Health Interver	97	21	56	41	
21	Social and Preventive Pharmacy B Pharm 19-20	Unit V: MCQs Test on Community services in ru	92	26	50	42	
22	Process Chemistry	Test 1	0	5	0	0	
23	Pharmacology / Toxicology D Pharm - 2019-20	Test No 1	82	19	77	5	
24	Pharmacology / Toxicology D Pharm - 2019-20	Test No 10	79	22	78	1	
25	Pharmacology / Toxicology D Pharm - 2019-20	Test No 2	88	13	84	4	
26	Pharmacology / Toxicology D Pharm - 2019-20	Test No 3	85	16	78	7	
27	Pharmacology / Toxicology D Pharm - 2019-20	Test No 4	83	18	77	6	
20	N Worksheet	T N. F	00	10	76	<u> </u>	

Digital Learning Reports



15. Infrastructure & learning resources details

Internet Facilities



campus. This facility allows students to access uninterrupted internet connectivity anywhere within the campus Including Boys and Girls Hostel.

https://jssuni.edu.in/JSSWeb/WebShowFromDB.aspx?MODE=SSMD&PID=10002&CID= 6&MID=0&SMID=10403

PharmD Info - University Link

https://www.jssuni.edu.in/JSSWeb/UDHP.aspx?PID=90

DIC Mobile Application

https://play.google.com/store/apps/details?id=com.leopragi.dic&hl=en_US

Assignments Reports – PharmD Info E learn

JSS College of Pharmacy, Ooty

S.No	Subject	Program	Teacher Name	No of Assignments
1.	Hospital and Clinical Pharmacy	II D Pharm	Dr. R Santhosh Kumar	8
2.	Pharmaceutical Jurisprudence	II D Pharm	Dr. R Santhosh Kumar	10
3.	Social and Preventive Pharmacy	I B Pharm	Dr. Ponnu Sankar	3
4.	Pharmacology / Toxicology	II D Pharm	Dr. Anand VijayaKumar	5
5.	Drug Store and Business management	II D Pharm	Dr. Swathi Swaroopa B	7
6.	Pathophysiology	I B.Pharm	Dr. Swathi Swaroopa B	2
7.	Pharmaceutical Chemistry II	II D Pharm	Mr. Srikanth Jupudi	11
8.	Pharmaceutical Organic Chemistry	I B.Pharm	Dr. Gowramma B	1
9.	Pharmacotherapy-II	III PharmD	Dr. G K Sadagoban	1
10.	E Learn Demo Course Work	JSSCPO- Staff	Dr. G K Sadagoban	1
11.	Pharmacoepidemiology/PE	V PharmD	Dr. G K Sadagoban	2
12.	Biostatistics and Research Methodology	IV PharmD	Mr. Jayakumar C	3
13.	Biostatistics and Research	IV B Pharm	Mr. Jayakumar C	1

DIC – Learning Resources







Healthcare has become one of India's largest sector, both in terms of revenue and employment. Healthcare comprises hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance and medical equipment. The Indian healthcare sector is growing at a brisk pace due to its strengthening coverage, services and increasing expenditure by public as well private players.

The Department of Health System Management Studies also has placement co-ordinator and committee which gives placement assistance to final year of students. Students of (2019-2020) batch were placed at different hospitals in and around Karnataka with designations ranging from Hospital co-ordinator, NEBH coordinator, Customer Relationship Management, Manager, Floor coordinator, Nursing staff, Human Resource Manager, Front office executive and Medical officer of the day and more than 70% (2019-2020 batch) of the students have been placed across all the sectors in health.



Developmental / Infrastructure / Civil works of Department of Health System Management Studies

SI.No	Name of the work	Amount (Rs.)
1	Projectors	5,48,644-00
2	Biometric	22,830-00
3	White board	74,281-00
4	Table	14,19,540-00
5	Water cooler	1,05,000-00
6	CCTV	1,94,511-00
7	Speakers	3,20,800-00
8	Chairs	1,76,000-00
9	Foot operated sanitizer	6,000-00
10	Projector + Screen (Board room)	2,71,754-00
	Carpentry – material cost	29,91,000-00
	Carpentry – labor charge	16,30,000-00
	Total	77,60,360-00

Inclusive and sustainable industrialization, together with innovation and infrastructure, can unleash dynamic and competitive economic forces that generate employment and income. They play a key role in introducing and promoting new technologies, facilitating international trade and enabling the efficient use of resources.

The Goal is to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

The institute has adapted to create a smart infrastructure within the existing facilities thereby reducing loss of power and energy. Though the Department is not directly involved in industrialization, there has been considerable update in curriculum with consultation with industrial partners which would highly benefit the outgoing students to focus on small scale industries to begin within the Life Sciences sectors.

The institute has a number of partners both nationally and internationally who constantly provide their suggestions and advices related to industrial experiences, work force required from the academia, consultancy projects and curriculum updates. To foster innovation the institute has setup an incubation centre to help ideas flourish. Several Angel investors have shown keen interest to invest in some of the projects initiated by students.

Case Studies with Glimetomics

Students who have completed research at Faculty of Life Sciences have started their own company and have signed MoU with the Department which have helped the current students to find a job belonging to an Alumnus. Glimetomics is a Bioinformatics Company started by Dr. Shruthi, who earned her PhD in the Department of Biotechnology & Bioinformatics. The Department signed an MoU with the company because of which several students were able to complete their M.Sc., project work at Glimetomics and the company also has hired students. The Company is also helping the academia to constantly update the curriculum and infrastructure according to the need of the hour.

Food based industry

Fungo Mushrooms is another registered small scale company started by a group of students graduated from Biotechnology, Microbiology and Food, Nutrition & Dietetics courses. This has become a role model among several students as this has turned out to be a highly sustainable model. The students who have begun the company work have joined Master degree courses and keep working for the company after institutional working hours. The income has helped them bear their own tuition fee and also support their families. More importantly the company has been recognized by the local Government Horticultural Department which has come forward to support the company by several means to train aspirants looking for such industrial exposures.
16. CIVIL WORKS CARRIED OUT

JSS MEDICAL COLLEGE, GIRL'S HOSTEL AND BOY'S HOSTEL, JSSMC

Name of the work	Amount in Rs.
Department upgradation & interiors Forensic Medicine,	Rs.80,44,961.00
Pharmacology, Anatomy, Physiology	
Central Animal House facility	72,63,453.00
Girls Hostel – Additional Floors, Sanitary works,	12,16,98,865.00
Installation of Fire alarms, Aluminium Partition, Gas	
Room, fencing work, wash rooms	
Furniture for Boys hostel	22,11,202.00
Security Room, Board Room – minor repairs	2,07,408.00
Plumbing work	1,36,638.00
Rock garden	14,80,571.00
14,10,43,098.00	

CIVIL WORKS CARRIED OUT

JSS MEDICAL COLLEGE, GIRL'S HOSTEL AND BOY'S HOSTEL, JSSMC

Name of the work	Amount in Rs.
Department upgradation &	89,67,406.00
interiors Anatomy, Physiology	
including curtains	
Furniture work for department	24,97,418.00
of Anatomy & Physiology	
Garden work, electrical work	20,29,291.00
Gallery III upgradation	24,297.00
Miscellaneous	4,51,169.00
Girls Hostel – constructions of	11,65,14,029.00
additional floors 4, 5, 6, 7 at D-	
Block, furniture, MS grills,	
kitchen work, aluminium	
windows	
Girls Hostel - Road work, Iron	35,20,280.00
shelter, compound wall	
Boys Hostel – Furniture, Iron	44,98,508.00
shelter, upgradation of kitchen	
area	
13,85,02,398.00	

17. Innovations in research through collaboration

Medical Industry contributions through Consultancy

Consultancy	Local/State/ National/	Objectives	Financial details
/Clinical	International		
Mr. Vivek Kumar Pandey,	State- School of	Collaborating Projects	10,000/-
MSc in Applied	Biotechnology, KIIT		
Microbiology	University, Bhubaneshwar		
Dr. Dharshini Yadav, PG	Local- JSS Ayurveda	Collaborating Projects	10,000/-
Scholar	Medical College, Mysuru		
Department of	National	Urban Immunization Strategy	Rs 11,000
Community Medicine		development at Aspirational	
		district, Raichur by Unicef,	
		WHO and KAHFW	
Dermatopathology	Local	Diagnostic	66,000
Nephropathology	Local	Diagnostic	3,18,000
Histopathology & IHC	Local	Full fillment of project work.	58,000
charges			
King's College London	International	Cognitive assessment	100000
Nesa MedTech	National	RFA of Fibroid	100000
iMERA.AI (UK)	International	Efficacy of deep learning	1,00,000
		algorithms in reporting MSK	
		Radiographs	
Anagha M S, Harshitha K,	Local- JSS Science and	Collaborating Projects	5000/-
Niriksha V	Technology University,		
	Mysuru		
Kuvempu University,	Collaborating Projects	Research work	10,000/-
Shimoga			
Institute of Public Health	Collaborating Projects	Research work	10,000/-
JSS Dental College,	Collaborating Projects	Research work	2,000/-
Mysuru			

Clinical Trials

Company Name	Investigator	Amount received
The International Poly Cap Study	Dr.K.M Srinath	20,362.00
Excel Life Sciences Pvt.Ltd. Noida	Dr.Premanath Raman	25,646.00
Excel Life Sciences Pvt.Ltd. Noida	Dr.Premanath Raman	4,452.00
Klinera Corp India	Dr.Subramanyan R	1,18,031.00
CRL Mylan Laboratory Ltd. Bangalore	Dr.TSS Rao	13,18,060.00
Serum Institute of India Pvt.Ltd., Pune	Dr.M.D Ravi	8,50,585.00
Biological E, Limited	Dr.M.D Ravi	2,83,700.00
Shantha Biotechnics Pvt.Ltd. Hyderabad	Dr.M.D Ravi	5,27,508.00
Biological E, Limited	Dr.Ashoka.H.G	2,06,323.00
CBCI Society for Medical Education	Dr. K.M Srinath	93,330.00
Astrazenca Pharma India Itd	Dr.Chethan.C.S	15,20,230.00
Astrazenca Pharma India Itd	Dr.Manjunath Shetty	7,15,944.00
Bridge Clincal Research Service Pvt Ltd	Dr.Ravi.M D	7,27,680.00
Klineria Global Services	Dr.Subramanian R	1,47,656.00
Clinatha	Dr.TSS Rao	3,83,200.00
Klineria Global Services	Dr.Subramanian R	4,33,136.00
Biological E-Limited	Dr.Ravi.M D	6,69,532.00

Shantha Bio Tech	Dr.Ravi.M D	6,72,128.00
IQVIA RDS(India) Pvt Ltd	Dr.Subramanian R	73,239.00
Biological E-Limited	Dr.Prasannakumar.H R	6,18,969.00
Norwich Clinical	Dr.Ashoka.H.G	15,000.00
TIPS study	Dr.Srinath. K M	1,50,000.00
Pharmazz India Pvt Ltd	Dr.Mahesh.M	30,000.00
IQVIA RDS(India) Pvt Ltd	Dr.Ravikumar Y S	1,74,101.00
Syneous Health UK Limited	Dr.Premanath Raman	4,71,057.00
Biological E-Limited	Dr.Ravi M D	3,30,990.00
	Total	1,05,80,859

18. Research projects:

 PI: Dr. Srinivasa Murthy, Professor, Dept of Peadiatrics, JSSMC, Mysuru Title: Development of Electro Thrombogam (ETG) a Point of Care Electronic Device to Assess the Blood Coagulation Status

Funding Agencies: DST

Grants: 27,00,000.00

Duration: 2 Months

Status : Ongoing

 PI: Dr. MVSST Subbarao, Professor. Dept of Biochemistry, JSSMC, Mysuru Title: Chronic Respiratory disease Innovation and Solution Program (CRISP Funding Agencies: CSIR IICB Grants: 7,32,792.00

Duration: 5 Yrs.

Status : Ongoing

 PI: Dr. Deepti Thandaveshwara, Assistant Professor Dept. of Paediatrics Title: INTACT- Integrated Neonatal Transport Assist Cradle Technology Funding Agencies: JSSAHER Grants: 50000
 Duration: 2 Yrs

Status : Ongoing

PI: Dr. Srinivasa Murthy, Professor, Dept of Peadiatrics, JSSMC, Mysuru
 Title: Multi User Universal Medical Ampule Breaker with integrated sharps bin -(MU-MAB)

Funding Agencies: JSSAHER

Grants: 27,00,000.00

Duration: 04 Months

Status : Ongoing

19. <u>Innovations in academics through Lectures organised by Academic</u> <u>Society</u>

Торіс	Name of the staff
Interaction between cost of case,	Dr.Praveen Kulkarni
Glycemic control, Quality of Life and	Asst.Prof.
Psycho – Social illness among	Dept. of Com. Medicine
adolescents with Type-1 Diabetes –	JSS MC. Mysuru
Hospital based study in Mysuru	
Paediatric airway foreign bodies –	Dr Sudhamshu K C
challenging situations	Asst Prof. of Paediatric Surgery
	ISSMC & H Mysuru
Comparison of recipient site preparation	Dr Noor Jahan
with fractional CC2 laser versus	Ir Besident
dormabrasion in vitilizo surgory and	Dopt of Dormatology ISSMC & H
offect of photothoropy with two different	Mucuru
modilition	wysuru
Dharmacovigilance introduction	Dr. Sri Harsha Chalasai
Pharmacovignance introduction	DI.SII Haisila Cildidsiii
	Pacented Constant
Endovenous Management of May	Dr.Ganesh G.Gowda
Turners syndrome and Surgical	Asst.Prot.
management of Carotid Artery	Dept. of Vascular Surgery
Thrombosis	JSSMC & H, Mysuru
Immunohistochemical Correlation of	Dr.Ashwin Kumar
Lymph Nodal status in evaluation of	PG Mentor: Dr.Ravi Krishnappa Dept. of
Carcinoma Breast in a Teriary care centre	Surgical Oncology
	JSSMC & H, Mysuru
A Solitary Neurofibroma of the Eyelid	Dr.Meena Gowtham
	PG Mentor: Dr.Ravi H.S.
	Dept. of Plastic Surgery
	JSSMC & H, Mysuru
Atypical Spinal Tuberculosis – The Great	Dr.Rohit Ravindran Nair, PG Mentor
Masquerader whole spine screening – An	Dr.Sastri P (Prof. & Unit Chief), Dept. of
Invaluable Tool	Orthopaedics
Arteriovenous Thrombosis in a young	Dr.Manvitha Nadella PG, Mentor
male patient – A Diagnostic Enigma	Dr.Shubash Chandra, Prof. & HOD of
	Medicine
Management of Lung Cancers	Dr.Ravi Krishnappa (Surgical Oncologist)
	&Dr.Vishweshwara MS (Radiation
	Oncologist)
Corrosive Gastroesophageal Injuries	Dr.Anurag Lavekar, Registrar. Mentor :
	Dr.Nandeesh H.P. of Medical
	Gastroenterology
Sensitization program on Technical and	Dr. Ravi P District Tuberculosis Officer

Operational guideline (TOG) and Programmatic Management of drug	
Resistant TB (PMDT) under RNTCP.	
Flood relief interventions in Kerala: A fact	Dr.Jose Jom Thomas, PG Mentor
sheet and critical analysis based on	Dr.Prakash B, Professor of Comm.
experiences and observations	Medicine, JSSMC
Hots for Tot's (Higher order of thinking	Dr.Prakruthi P, PG Mentor Dr.Mamatha
skills for Tubo-ovarian TB)	S. (Asso.Prof. & Unit Chief), Dept. of
	OBG
Trigeminal Neuralgia – Microvascular	Dr.(Col) TS Vasan, Prof. & HOD of
Decompression	Neurosurgery, JSSMC
Quantitative Imaging Biomarkers in	Dr. Amita Shukla Dave Director
Cancer Care	Quantitative Imaging, Deputy Service
	Chief Predictive Informatics Attending
	Physicist Member Memorial Sloan
	Kettering Cancer Centre New York
Stem Cells and Regenerative Medicine –	Prof Δ Δ Shetty Hunterian Professor
Newer frontier in Medicine	Royal College of Surgeons of England
	2017 Adjunct Enculty Apollo Hospitals
	ZO17 Aujulict Faculty Apollo Hospitals
Combined CAPC and Constid	(AHERF), India
Combined CABG and Carotid	Dr.Snyam Prasad Snetty Asso. Professor
Endarterectomy	Dept. of CIVS,
	JSS MC, Mysuru
Rational use of antibiotics	Dr.M.N.Sumana
	Prof. & HOD of Microbiology
	JSSMC, Mysuru
Case report : A rare case of	
leiomyosarcoma presenting as	Sr. Resident of Surgery
mesenteric tumour	JSSMC, Mysuru
Pharmacovigliance	Mrs. Juny Sebastian
	Lecturer
	Dept. of Pharmacy Practice, JSS College
	of Pharmacy
Management of cervical spine facet joint	Dr.Rohit Ravindran Nair
dislocation – closed or open technique :	PG Mentor : Dr.Purushotham Shastry,
our experience	Professor of Orthopaedics
OP compound induced delayed	Dr.Sindhu
polyneuropathy	PG Mentor : Dr.Mahesh M,
	Protessor of Medicine
Geriatric / Palliative Care	Dr.Prathibha Pereira
	Protessor of Medicine
	Dr.P.Akkamahadevi
	Professor of Anaesthesia

20. Innovations in research through collaboration



Japan Study Tour

Dr.SujeethShetty, Professor and Dr.Jaishankar H P, Reader visited four universities in Tokyo for the purpose of collaborating and getting MOU. On 10th April 2019 they met Prof. KanichiSeto who is the president of International Health Care Foundation, President For Dental Patient Safety, Director Of Oral Cancer Centre, Prof Jun Shimada of Mekai School Of Dentistry and Prof Takao Watanabe Of Kangawa Dental College. They had elaborate discussions about student exchange, trauma management, implant training program, minimal invasive cancer therapy, immunology, intraarterialchemotherapy, BNCT [Boron neutron capture therapy] and proton therapy for cancer.

On 11th April visited Nihon university and hospital school of dentistry at Matsudo. Had discussions with Prof. Kyoshi Matsushima, Professor and Director, Prof KohShibutani who was the Dean of the college and Prof Ujjal K Bhawal who heads the dept of Biochemistry and Molecular biology. The discussion was mainly on research collaboration in the field of molecular biology. They also visited Japan Institute of Advanced Dentistry and had a meeting with Prof Naoto Okumori and Isao ohashi who are prosthodontist and implantologist regarding implant training programme and dental esthetic programmes. Visited Tokyo Dental college on 12th April and presentation of JSSAHER was done. Had fruitful discussions with Prof Yasutomoyajima the director of the college and Prof Tomohiro Orakano.

JSSDCH faculty & Students visit to University of Malaya



Dr Aruna G, Lecturer, Dept. Of Periodontics along with the Interns of JSS Dental College & Hospital attended the students exchange programme from 2nd May to 16th May 2019 at the University of Malaya, Malaysia. They visited the Departments, research laboratory to know the infrastructure available for undergraduate and postgraduate programmes. They were also introduced to their curriculum research facilities, sterilization protocols and were given an opportunity to work with the Preclinical models. Preclinical and Clinical assessment records showing check list of every details were given to each Intern and procedures were followed accordingly. Dr Aruna with the Interns had a meeting with the Dean and Heads of the Dental Institution for a short presentation about JSS AHER.

21.	Number o	of function	onal MoUs wit	h institutio	ons of National,	Internatio	onal

Organisation with which MoU is signed	Duration	List the actual activities under each MoU year wise	Number of students/teachers participated under MoUs
South Asian Society of Oral Maxillofacial Implantology (SASOMI) #134, 42 nd Cross, 3 rd Main, 7 th Block, Jayanagar, Bengaluru- 560082	1 Yr. 14.7.2021	Study Tours & Meeting with Japanese Dental Universities MoU/Co-operative arrangements with Japanese Dental Universities/Institutions Student Exchange Opportunity to host SASOMI symposiums/Conferences/ events at the respective university/institution	DrRavindra S, Principal, JSS Dental College & Hospital & Dr K S Nagesh Patron South Asian Society of Oral Maxillofacial Implantology (SASOMI) Bengaluru
Kingdom of Saudi Arabia Ministry of Education King Khalid University		Collaboration of funded research project Titled "Association between bone mineral density and periodontal disease: A cross sectional clinical & radio- grammetry study" (Rs.2 Lakh)	DrRavindra S, Principal, JSS Dental College & Hospital & DrSaad M Aiqahtani Asst. Prof, Chairman Dept. of PCS College of Dentistry King Khalid University, Abha, KSA
Curaden India Pvt. Ltd. # 11, Global Tech Park O'Shaughnessy Road Langford Town Bengaluru-560025	3 Yrs.	Providing preventive dental education programmeiTOP to faculty of JSS Dental College & Hospital (Faculty and PG's Dept. of Periodontology) They will train the dental faculty on the correct usage and technique of interdental brushes, tooth brushing techniques, dental flowing and other oral hygiene aids. They will also conduct regular refresher courses for the dental teaching faculty.	DrRavindra S, Principal, JSS Dental College & Hospital & Mr Clifford ZurNieden, Director, Curaden India Pvt., Ltd.,, Bengaluru
Rutgers University, NJ, USA		International University Based collaborative research	Dr B Nandlal, Prof. Dept. of Pedodontics & Preventive Dentistry

22. DETAILS OF ICMR / VGST FINANCIAL ASSSITANCE FOR STUDENTS MD/MS/DM/MCH DISSERTATION THESIS

SI. N o.	Name of the faculty / Department	Title of thesis	Thesis grant In Lakh	Sponsoring Agency
1	Principal Investigator Dr Saumya PG Student Guide: Dr Paras Mull J Conservative Dentistry and Endodontics	Comparative evaluation of demineralization inhibition potential of two new restorative materials and their effect on Nano hardness of enamel: an in vitro study	0.50	ICMR
2	Principal Investigator Dr Divya Sangeetha PG Student Guide: Dr B M Annapoorna Conservative Dentistry and Endodontics	Comparative evaluation of herbal etchant and MMP inhibitor with orthophosphoric acid and chlorhexidine on the microshear bond strength of composite resin – An ex-vivo study	0.50	ICMR
3	Principal Investigator Dr Manu Bhaskaran Nair, PG Student Guide: Dr Avinash B S Dept. of Periodontology	Adjunctive effect of PRF membrane on GCF Alkaline phosphatase levels in patients undergoing periodontally accelerated osteogenic orthodontics (PAOO) –A randomized controlled trial	0.50	ICMR
4	Principal Investigator Dr Uma P Nair PG Student Guide: Dr Ravindra S Dept. of Periodontology	Comparative evaluation of bone graft with or without injectable platelet rich fibrin in the treatment of mandibular grade II furcation defect:Aclinic radiological study	0.75	Self-funded
5	 Principal Investigator Mr Tamal Das II BDS student Guide: Dr Sunila B S Dept. of Prosthodontics 	Estimate of fasting salivary malondialdehyde (MDS), plasma and salivary glucose levels in patients with type 2 diabetes mellitus	0.20	ICMR STS- 2019

6	Principal Investigator	Evaluation of		
	Dr Paridhi Gupta PG Student Guide: Dr Bhagyalakshmi A Dept. of Orthodontics	Injectable Platelet Rich Fibrin (i- PRF) effect on rate of canine retraction and Alkaline Phosphatase levels: An In-vivo Study	0.50	ICMR
7	PrincipalInvestigatorDrPratibha Sharma PGStudentGuide:Dr Chandrashekar B R Dept.of Public Health Dentistry	Evaluating the effectiveness of oral health education offered by qualified dental professional, trained teachers and peer role models in promoting oral hygiene status and behavior among school going students in Mysuru, Karnataka	0.15	Indian Association of Public Health Dentistry
8	Principal Investigator Dr Anne Mary Intern Guide: Dr Chandrashekar B R Dept. of Public Health Dentistry	Knowledge, attitude and perceptions on the impact of pictorial warnings on tobacco packaging among patients visiting a dental hospital in Mysuru city	0.05	Indian Association of Public Health Dentistry
9	Principal Investigator Dr. Pratibha Sharma PG student Guide: Dr Chandrashekar B R Prof., HOD, Dept. of Public Health Dentistry	Evaluating the effectiveness of green tea- based herbal mouth rinse in comparison with Chlorhexidine Gluconate mouth rinse in reducing dental plaque, tongue coating and halitosis among human volunteers A parallel arm double blind randomized control trial.	0.50	ICMR
10	Principal Investigator Ms Priyanka III BDS student Guide: Dr Sushma R Lecturer Dept. of Public Health Dentistry	An exploratory insight into publics Perception and preference of Mouthwash in Mysore city – A cross sectional questionnaire study	0.20	ICMR-STS
11	PrincipalInvestigatorMrLakshmeesha D BDSstudentGuide:DrDrShivanandaSReader, Dept. of Oral	Efficacy of application of PRP in comparison with eugenol dressing of the dry socket with respect to clinical symptom	0.20	ICMR-STS

	&			
	Maxillofacial Surgery			
12	PrincipalInvestigatorMs.PramadwaraKumarBDSstudentStudentGuide:DrDr PremalathaB R Reader,Dept. of OralPathology &Microbiology	Knowledge, attitude and practice related to oral hygiene among medical students in Mysuru city – a cross sectional survey based study	0.20	ICMR-STS
13	Principal InvestigatorMs. Bhumika V R BDS studentGuide:Dr Girish M SReader, Dept. ofPedodontics&Preventive Dentistry	Effect of Punica Granatum extracts and fluoride mouth rinse on the protective properties of pellicle layer against erosive mineral loss	0.20	ICMR-STS
14	Principal Investigator Mr Ganesh N BDS student Guide: Dr Indira M D Lecturer Dept. of Pedodontics & Preventive Dentistry	Evaluation of compressive strength shear bond strength And abrasive ressitance of chitosan cellulose modified glass ionomer cement (Chce- GIC)	0.20	ICMR-STS
15	PrincipalInvestigatorMsHarsinisubosh BDS studentGuide:Dr Vidya Priyadharshini DS ReaderDept. of Pedodontics &Preventive Dentistry	Infection control measures among dental clinical practitioners in the city of Mysuru	0.20	ICMR-STS
16	Principal Investigator Ms Yuktha R BDS student Guide: Dr Ashwini T S Reader Dept. of Conservative Dentistry & Endodontics	Burden of oral diseases in type II diabetics mellitus patients at dental hospital setup in Mysuru city	0.20	ICMR-STS
17	Principal Investigator Ms Shreyas Pravin Dhumke BDS student Guide: Dr Seema Deshmukh Reader, Dept. of Pedodontics & Preventive Dentistry	Antimicrobial efficacy and surface characteristics of fluoride coated nano silver particles incorporated type IV glass inomer cement (CNAg-GIC)	0.20	ICMR-STS
18	Principal InvestigatorMsRachithaNarrendraBDSstudentGuide:Dr Meenakshi S Lecturer	Oral candidal colonization among denture wearing postmenopausal women-a comparative microbial analysis with non-denture wearers	0.20	ICMR-STS

	Dept. of Prosthoodontics and Crown & Bridge			
19	Principal Investigator Mr. Kishan P BDS student Guide: Dr Nitin V Muralidhar Reader, Dept. of Orthodontics & Dentofacial Orthopedics	Efficiency of low level laser therapy in healing of extraction wounds – A cross sectional study	0.20	ICMR-STS
20	Principal Investigator Ms Kiruthika M BDS student Guide: Dr Priyanka Nitin Lecturer Dept. of Oral Pathology & Microbiology	Cytological assessment of epithelial changes in oral mucosa during menstruation in young adults	0.20	ICMR-STS
21	PrincipalInvestigatorMsAnju Vijayan Nair BDS studentGuide:DrDrAmbikathanayaULecturerDept.ofConservativeDentistry & Endodontics	Lichenoid reactions in diabetic and non diabetic patients with silver amalgam restoration an in vivo study	0.20	ICMR-STS
22	Principal InvestigatorMrPrathikantamRaghuPavan BDS studentGuide:DrSreeshylaHSLecturerDept. of Oral&Pathology&Microbiology	Anti bacterial and anti fungal effect of trigonella focnum graelum and ferula asafoetida on oral micro biota-an in vitro microbiological assay	0.20	ICMR-STS
23	Principal Investigator Ms Srustee S II BDS student Guide: Dr Nandithakumar M Reader Dept. of Prosthoodontics and Crown & Bridge	Perception of smoking in school children with parents as smokers in low socio economic status and high socio economic status – A cross sectional study	0.20	ICMR-STS
24	Principal Investigator Ms Anjalianil III BDS Student Guide: Dr Sunitha S Reader Dept. of Public Health Dentistry	Efficacy of oral cleansing and preventing diseases by tooth brushes Vs tooth flossing in adjunct to tooth brush in among 13-15 year old children	0.20	ICMR-STS
25	Principal InvestigatorMsSamredhiSinghIIBDSstudent	Knowledge, attitude and eco friendly medical practices Adopted by undergraduate students in different healthcare		

	Guide: Dr Chandrashekar B R Prof., HOD, Dept. of Public Health Dentistry	institutions in Mysore city, Karnataka Across sectional questionnaire study	0.20	ICMR-STS
26	Principal Investigator Ms Neha S R II BDS Student Guide: Dr Sowmya H K Lecturer Dept. of Conservative Dentistry & Endodontics	Estimation and relationship of urea and creatinine levels in serum and saliva of patients with chronic kidney disease	0.20	ICMR-STS

23. JSS Academy of Higher Education & Research Projects: Students

		Amount (Minor /	Sponsoring	
Name of the Student / Department	Name of the project	Major) In Lakh	Agency	Period From To
Dr Pragyan Mohanty PG	A pilot study to correlate			
Student	smoking pack years with			
Guide; Dr Sheela kumar Dept periodontology	Epstein Barr virus titer and periodontal status	0.25	JSSU	1yr
Dr Kunchok Dolma J PG Student	To assess and correlate	0.25		
Guide:Dr SheelakumarG Dept. of Periodontology	mean platelet volume and salivary C-reactive protein	(applied for 0.62)	JSSA HER	1 Yr.
	chronic periodontitis.		TIEK .	
Dr Archana R Sankar PG Student	To evaluate aloe vera chitosan based surgical	0.25		
Guide; Dr Sheelakumar G Dept Periodontology	dressing on healing of periodontal surgical wound	(applied for 0.262)	JSSA HER	
Dr Manohar Sharma H PG	Evaluation of Psidium			
Student	guajava local drug delivery			
Guide: Dr Deepika P C	as an adjunct to scaling			
Dept. of Periodontology	and root planning in the	0.15	JSSA	3
	treatment of chronic		HER	Mont
	periodontitis: A Clinical and Microbiological Study			hs
Dr Medha Sharma PG	Comparative evaluation of	0.25	JSSAHER	1.5 Yr.
Student	Diode Laser and	(applied for		
Guide: Dr Deepika P C	Antimicrobial therapies in	0.90)		
Dept. of Periodontology	the treatment of	f		
	Aggressive Periodontitis-A			
	clinical and microbiological study			
Dr Rishika Battula PG Student	A Correlative study	0.25	JSSAHER	11
Guide: Dr Sheelakumar G Dept.	assessing psychological	(applied for 0.55)		Months
of Periodontology	stress, salivary amylase			
	levels and its relationship			
	with periodontal status in			

	police recruits			
Du Aishuranya Daiandua Datil	Fuelvetien of entiring hield	0.25		1 5 1/2
Dr Alshwarya Rajendra Patil RG Student	Evaluation of antimicrobial	U.25 (applied for 0.70)		1.5 Yr.
Guide: Dr Ravi M B	efficacy of different	(applied for 0.70)		
Dept of Prosthoodontics and	essential oils as denture		ISSAHER	
Crown & Bridge	bardnass of soft denture			
	reliners			
Dr. Driva Mukhariaa DC	Evoluating nighting relation	0.20		
student	from heat cures acrylic	0.20 (applied for		
Guide: Dr Anilkumar G Dept.	denture hase exposed to	0.28396)	ISSAHER	1.5 Yr.
of Prosthoodontics and	cigarette smoke –an invitro	0.20000		
Crown & Bridge	study			
Dr. Akanksha, Roy, PG, student	, A non-invasive technique to	0.20	ISSAHER	1 5 Vr
Guide:Dr	evaluate the effects of	(applied for 0.50)	JJJANEN	1.5 11.
Raghavendraswamy K	complete denture			
N Dept. of	prosthesis on swallowing –			
Prosthoodontics and	an invivo study			
Crown & Bridge	,			
Dr Urvashi Sharma PG student	Comparison of marginal			
Guide:Dr Dhakshaini M R Dept.	integrity of metal crown			
of Prosthoodontics and Crown	made from conventional	0.25	JSSAHER	1.5 Yr.
& Bridge	technique, CAD-CAM and			
	3D printing – an invitro			
Dr. Arun V Mayaly DC Student	study.			
Guide: Dr Suman Basavariu	therapy as an adjunct to			
Dept. of Periodontology	scaling and root planning	0.25		
	on the IL-1B levels in	(applied for 0.72)	JSSAHER	3 Months
	patients with type2			
	diabetes mellitus: A			
	randomized controlled			
Dr. Mary, Dhasharan Nair	clinical trial.			
Dr Manu Bhaskaran Nair RG Student	of a novel Nisin variant like	0.20		
Guide: Dr Ravindra S. Dept. o	lantbiotic against	(applied for 0.25)	ISSAHFR	6 Months
Periodontology	periodontal pathogens-an			0 11101111
	ex vivo study			
Dr Anoop N K PG Student	Evaluation of the efficacy of			
Guide: Dr B Nandlal Dept. of	fennel seed extract			
Pedodontics & Preventive	(Foeniculum vulgare) in	0.25		
Dentistry	inhibition of growth of	(applied for	JSSAHER	3.5
	enterococcustaecalis	0.26610)		Months
	pionim formed on tooth			

	substrate; an ex vivo study			
Dr Vanessa Lobo PG Student Guide: Dr Seema Deshmukh Dept. of Pedodontics & Preventive Dentistry	Comparative evaluation of antimicrobial efficacy of a novel bacteriocin and calcium hydroxide as an intracanal medicament against enterococcus faecalis biofilm-an in vitro study	0.20 (applied for 0.30)	JSSAHER	6 Months
Dr Radhika Krishnan C PG student Guide:Dr K N Raghavendraswamy Dept. of Prosthoodontics and Crown & Bridge	Comparative evaluation of masticatory efficiency in various facial forms of dentate and rehabilitated complete denture patients	0.25 (applied for 0.35)	JSSAHER	18 Months
Dr Bosy Thanakam Mathew, PG Student Guide: Dr Raghunath N Prof. Dept. of Dept. of Orthodontics & Dentofacial Orthopedics	To evaluate and compare the effect of Micro osteoperforations on the rate of canine retraction and rankl levels in gingival crevicular fluid during orthodontic treatment	0.25 (applied for 0.75)	JSSAHER	2 Yrs.
Dr Nithin Varghese Joy PG Student Guide: Dr H Jyothi Kiran Reader, Dept. of Dept. of Orthodontics & Dentofacial Orthopedics	Comparison of implant supported mandibular canine retraction using NITI closed coil springs with and without submucosal injection of platelet – rich plasma (PRP)- an in vivo study	0.25 (applied for 0.618)	JSSAHER	1.5 Yrs.
Dr Mounika Prashanthi N PG Student Guide: Dr H P Jaishankar Reader, Dept. of Oral Medicine & Radiology	Comparative study of Orthopantomogram and Cone beam computed tomography to determine osseous changes in the temporomandibular joint	0.25	JSSAHER	1 Yr. 3 months
Dr Aishwarya R PG Student Guide: Dr Karthikeya Patil HOD, Dept. of Oral Medicine & Radiology	Binygomatic distance and maxillary sinus dimensions as a predictor for sex determination: A morphometric analysis using cone beam computed tomography	0.25	JSSAHER	1 Yr. 3 months

Dr Mayank Chhabra PG	Flexural strength and			
student	impact strength of acrylic			
	and 3D printable denture	0.25		
Guide: Dr Nandithakumar	haso rosing A Comparativo	(applied for 0.50)	JSSAHER	1 Yr.
Reader. Dept. of	base resilis-A comparative	(
Prosthoodontics and Crown &	in vitro study			
Bridge				
Dr Ferin Fathima PG Student	Comparative evaluation of			
	shear bond strength of			
Guide Dr Bavi S Beader Dent	orthodontic brackets	0.25	ISSAHER	1 Vr
of Orthodontics & Dontofacial	honded after treatment of	0.25	JUSANEN	± 11.
Or Untilodolitics & Delitoracian	enamel with 5 25% sodium			
Orthopedics A	hnochlorite and 10% papain			
	gel = An in vitro study			
Dr. Biilani Samhita Subhash	Efficacy of ico applo			
DG Student	propolis and ampiotic fluid			
r d Student	in maintaining pariodontal			
Guido:Dr Bagbayondra	ligament cell viability of	0.25		2 months
Shanbhag	avulsed teethy An in vitro	0.25	JSSANEK	z montris
Boador	avaluation			
Reduel	evaluation			
Proventive Dentistry				
Dr. Shroopriva Singhania	Maxillary dentachycolor			
DE student				
FU student Guide: Dr. R. Nandlal	changes and speech			
Builde: DI B National	outcomes in uninlateral cleft			7 months
Proventive Dentistry	lip and palate children	0.25	JSSANEK	7 monuns
	before and after palatal			
Prof., N P Nataraja	repair			
Dr Poothika K V PG Student	Comparative according to			
Guida: Dr. Brachanth S	anticariogenic efficacy of			
Guide. Di Prasilanti S	cranberry and xylitol	0.25		ЭГ
Prof., Dept. of	lozenges in children	0.25	JSSANEK	3.5
Pedodontics & Preventive				months
Dentistry				
Dr Rishika Battula PG Student	To check the relationship			
	between tongue teno virus.			
Guide: Dr Sheelakumar G HOD.	Epstein barr virus in gingival			
Dept. of Periodontology	tissue biopsy of chronic	0.30	ISSAHER	1 Yr.
	periodontitis patients with			
	type II			
	diabetes mellitus			
Dr Kalyanam Rashmi Durga	Adjuvant use of probiotics			
PG Student	in the management of			
Guide: Dr Ravindra S Prof.,	periodontitis in diabetics: A	0.25	JSSAHER	1.5 Yr.
Dept. of Periodontology	randomized double blind			
	clinical trial			

Dr Tekwani Tanvi	Comparative Evaluation of			
Sachhanand	antifungal activity on oral			
PG Student	candida by Moringa			
	Oleifera seed Ethanolic			
Guide: Dr Sunila B S Reader,	Extract in Salivary Samples	0.57400	JSSAHER	2 Yrs.
Dept. of Prosthoodontics and	of Diabetic and Non-			
Crown & Bridge	diabetic Edentulous			
	subjects with complete			
	Dentures			

Infrastructure is the backbone of development of institution which align to a nation. The infrastructure and industries need continuous upgradation through innovations to cater to the needs of a developing society. A functioning and resilient infrastructure is the foundation of every successful community. For this, we need to promote innovative sustainable technologies and ensure equal and universal access to information and financial markets. Investment in an infrastructure and innovation are crucial drivers of economic growth and development. With over half theworld population now living in cities, mass transport and renewable energy, medication are becoming ever more important, as are the growth of new industries and information and communicationtechnologies.Technological progress is also key to finding lasting solutions to both economic and environmental challenges, such as providing new jobs and promoting energy efficiency. Promoting sustainable industries, and investing in scientific research and innovation are all important ways to facilitate sustainable development.

24. Industry visit to upgrade the research and innovations

- 1. Dr P K Kulkarni, Dr D V Gowda and Dr. Mruthunjaya K. visited Supreme Pharmaceuticals Pvt Ltd, Mysuru on April 2nd 2019.
- 2. Dr. T.M. Pramod Kumar has visited Eywa Pharma Chennai and Fourrts India Pharma Lab on 2nd April 2019.
- 3. Dr T M Pramod Kumar, visited Department of pharmaceutical sciences, University of Michigan at Detroit On 15th May 2019.
- 4. Dr T M Pramod Kumar, visited United States Pharmacopeia in Rockville in Washington DC on 29th May 2019.
- 5. Dr T M Pramod Kumar, visited School of pharmacy, University of Maryland, Baltimore on 30th May 2019.
- 6. Dr T M Pramod Kumar, visited Quotient Sciences, Philadelphia, USA on 31st May 2019.

25. Establishment of ideation labs for research & innovation



26. Knimbus for digital library

JSS College of Pharmacy in association with JSS AHER has integrated with Knimbus for its digital library needs. Knimbus shapes learning and research with affordable and cutting-edge digital technology which makes access to all the eResources on any device a personalized and convenient experience for users.

It provide a cloud-based digital library platform which integrates institute subscriptions, open access content, library holdings, academic and skill-oriented courses on an **"easy-to-find"** platform empowering libraries and classroom teaching.

The interface ensures that library patrons can read, practice, and study in a seamless learning environment anytime, anywhere, on any device.



27. Library: User education

- User guides: Library brochures/leaflets have been created by the Librarian to guide the students and faculty on the usage of different sources of information in the library. The topics covered under this are Library policy, information sources, databases, OPAC, literature search. Apart from these specific user guides for the databases subscribed has also been created.
- Scopus training: Hands-on training on the use of scopus was given by the Librarian on 13.7.2020. Twenty faculty have attended the programme.

28. Other Activities related to SDG 9:

- 1. Institutional Repository (IR): The IR of the college with full text materials has been created by the Librarian and installed in the library for use.
- 2. Remote access: Due to the covid pandemic, the learning environment has changed, class room teaching has been substituted by online teaching. Our library has a rich collection of e resources. The access to these sources is through our institution IP only. Only the faculty (i.e those who have an official jssuni email id) have the remote access facility by registering in the subscribed databases from the institution IP. The students do not have this facility at present.

To overcome this limitation we have enabled a software 'Knimbus' which is on trial for two months. This software not only provides remote access from anywhere but from any device through its mobile app. Currently 165 faculty and students across JSS AHER are using it and the feedback is good.

This software along with providing remote access, it also has federated search and uploading of our institutional repository.



Library facilities



Up-gradation of existing infrastructure

P 3 and a constant a constan	Animal House facilities
	Animal House facilities
PERBL GARDEN INVESTIGATION OF CONTRACT OF CONTRACTO OF CONTRACTO OF CONTRACTO OF CONTRACT OF CONTRACTO OF CONTRACT OF CONTRACT OF CONTRACT	Herbal garden

29. Collaborations & Memorandum of understanding (MoU)

The University to nurture research and academic excellence has developed and maintained wide range of collaborations. The written agreements for collaboration basically originates for mutual benefit of the organization (University/college of pharmacy and the partnering organization) with the intent of sharing their expertise for the overall development of the organizations and society at large. List of collaborations (MoU) are shown below.



MOU's Signed

SI.	Name of the Organization	Specialty
No.		
1.	Accreate additive labs private limited, Bengaluru	Research
2.	AIMST University, Malaysia	Academics
3.	Albany College of Pharmacy and Health Sciences, USA	Academics
4.	Alveus Pharmaceuticals Pvt. Ltd, Hyderabad	Research
5.	Apollo BGS Hospital, Mysuru	Academics
6.	Asha Kirana Hospital, Mysuru	Academics
7.	Bharath Hospital and institute of Oncology, Mysuru	Academics
8.	Bharathiar University, Coimbatore	Academics
9.	Biocon Foundation Bangalore	Academics
10.	Charite – Universities Medicine Berlin Germany	Academics
11.	CSIR-CFTRI, Mysore	Research
12.	CSIR-IGIB, New Delhi	Research
13.	Defence Food Research Laboratory, (DFRL), Mysuru	Research
14.	DRDO, New Delhi	Research
15.	Farooqia College of Pharmacy, Mysuru.	Academics
16.	Forensic Science University, Gujarat	Research

17.	GlaxoSmithKline Asia Private Limited, Bengaluru	Research
18.	Global Health City Chennai	Academics
19.	Green Chem, Bangalore	Research
20.	Gulbrandsen Technologies (India) Pvt. Ltd	Research
21.	Himalaya Drug Company, Bangalore	Research
22.	Howard University, Washington DC, USA	Academics
23.	Imaginarium (India) Private Limited, Mumbai	Research
24.	Innov4sight Health & Biomedical Systems	Research
25	Pvt.Ltd - Bangalore Innovative Nano & Micro Technologies Bangalore	Research
26	Institute for Global Public Health Frank H. Netter, MD School of	Academics
20.	Medicine Quinnipiac University	Academics
27.	Institute of Applied Dermatology (IAD) Kasargod	Academics
28.	J.S.S. Academy of Technical Education, Noida	Academics
29.	Jagdale Industries Pvt. Ltd (Juggat Pharma), Bengaluru	Research
30.	JSS Academy of Higher Education and Research, (Mauritius) Ltd.	Academics
31.	JSS College for Woman Saraswathipuram, Mysore	Academics
32.	JSS College of Arts, Commerce & Science, Ooty, Road, Mysore	Academics
33.	JSS College of Physiotherapy, Mysuru	Academics
34.	JSS Hospital and Organization For Rare Disease, India.	Research
35.	JSS Science and Technology University, Mysuru	Research
36.	KhonKaen University, Thailand	Academics
37.	La Trobe University, Australia	Academics
38.	Maastricht University, Netherlands	Academics
39.	Narayana Health Multispecialty Hospital, Devanur, Mysuru	Academics
40.	National Institute of Health (NIH), USA	Academics
41.	National Institute of Pharmaceutical Education and Research (NIPER), Kolkata	Academics
42.	National Institute of Veterinary Epidemiology and Disease Informatics (NIVEDI), Bangalore	Research
43.	Nesa Med Tech Pvt, Ltd, Bangalore	Research
44.	NMIMS University, Mumbai	Academics
45.	OMAN Medical College Sultanate of OMAN	Academics
46.	Pacific University, Oregon, USA.	Academics
47.	Philips Electronic India Ltd, Bangalore	Research
48.	PII Tech, USAQuantumzyme LLP, Bangalore	Academics
49.	Raksha Shakti University, Ahmedabad, Gujarat	Research
50.	Roseman University of Health Sciences, College	Academics

51.	of Pharmacy Henderson, Nevada, USA	Academics
52.	Scitus Pharma Services Pvt. Ltd. Chennai	Research
53.	Seragen Biotherapeutics Privat Limited, Bangaluru.	Research
54.	Skanray Technologies Private Limited	Research
55.	Southern Illinois University Edwardsville (SIUE), USA	Academics
56.	St. Philomena's College Mysuru.	Academics
57.	Sunway University, Malaysia	Academics
58.	Swami Vivekananda Youth Movement, Mysore	Academics
59.	Texas Southern University, USA	Academics
60.	The University of Charleston, USA	Academics
61.	Triphase Pharmaceuticals Pvt Ltd, Mysuru.	Research
62.	UCSI University, Malaysia	Academics
63.	University of Pretoria, South Africa	Academics
64.	University of Cincinnati-Mysore sister city Organization, USA	Academics
65.	University of Malaya, Malaysia	Academics
66.	University of North Carolina (UNC), USA	Academics
67.	University of Valparaiso, Chile	Academics
68.	Uppsala Monitoring Centre, Sweden	Academics
69.	VGM Hospital Coimbatore	Academics
70.	Yenepoya, Deemed to be University Mangaluru.	Academics

National and International Collaborations

SI. No.	Name of the University/Industry / Organization	Nature of collaboration	Coordinating person	Present status / outcome of collaboration
1	KwaZulu Natal University, South Africa	Academic Research	Dr. S. N. Manjula	Ongoing
2	Teresian College, Mysuru	Academic Research	Dr. S. N. Manjula	Ongoing
3	JSS Academy of Technical Education, Bengaluru	Academic Research	Dr. S. N. Manjula	Ongoing
4	Govt. Ayurvedic Medical College, Mysuru	Academic Research (RGUHS Sponsored research project)	Dr. K L Krishna	Ongoing
5	Govt. Ayurvedic Medical College, Mysuru	Academic Research (RGUHS Sponsored research project)	Dr. K L Krishna	Ongoing
6	Teresian College, Mysuru	Academic Research	Dr. K L Krishna	Ongoing

30. Innovations with collaboration

SI. No.	Name of the students	Name of the University/Industry / Organization	Coordinating person& duration	Present status / outcome of collaboration
1	Dr. Surajit Dey	Associate Professor, Roseman University of Health Science, Las Vegas, USA.	Mr. Hemanthkumar S 05/10/19	Identification of P- Glycoprotein in Human and Rabbit Cornea and Its role in Restricting Ocular Drug Absorption
2	Dr. Suresh Madhava n	Dean, UNTHSC, Texas, USA	Dr. Sri Harsha Chalasani, 04/01/2020 to 07/01/2020	Pharm.D Programme in UNT
3	Students from University of Minnesota, USA	University of Minnesota, USA	Dr. Rekha, VLEAD, Mysuru 14/01/2020	Understand Pharmacy program in India&Pharmaceutical Industry in India
4	Dr.Habibu r Rahman	USCI, Malaysia	Mr.Mahendr an 23/01/2020	MoU signed earlier Students exchange

31. Patents under innovation

https://jssuni.edu.in/jssaher/research/research-ipr-and-patents.html FILED

SI no	Year	Title of the patent published	Application No	Name of investors	Constituents Colleges of JSSAHER	Published Date (DD/MM/YYY)
1	2017	Synergistic Compositions and Formulations of Badam Gum	201741044334	Mr. Manohar and Dr. D.V. Gowda	JSS College of Pharmacy, Mysuru	12/12/2017
2		An Anti-fungal composition and process Thereof	201741044529	Dr. Meenakshi and Dr. D.V. Gowda	JSS College of Pharmacy, Mysuru	12/12/2017
1	2019	A sustained release matrix tablets for treating herpes simplex and a process for formulating the same	201941044342	Dr.D.Nagasamy Venkatesh	JSS College of Pharmacy, Ooty	01/11/2019
2		Combination of Levetiracetum and ocimum sanctum to fight epilepsy and memory impairment	201941016980	Dr. K.L. Krishna	JSS College of Pharmacy, Mysuru	01/03/2019

3		Lipid based Carrier system for topical delivery of Fisetin	IP-IN- 19200330-PA- 2019	Dr. Vikas Jain	JSS College of Pharmacy, Mysuru	11/12/2019
1	2020	Ethyl and Dimethyl 1-Benzoylpyrrolo (1,2-a) Quinoline-3- Carboxylate Analog Derivatives as Antifungal	202041034710	Dr. Kiran Kumar M N	Dept. Biotechnology & Bioinformatics, Faculty of Life Sciences, JSS AHER	12/08/2020
2		Mono Esterification Process for the synthesis of carboxymethyl Ch9itosan hybrid with WZB117	202041008119	Dr. Gowthamarajan K Dr. Jubie S Dr. Anindita De	JSS College of Pharmacy, Ooty	26/02/2020
3		Tissue engineered acellular scaffold for the treatment of diabetic wounds	202041027368	Dr. Karri V V S Narayana Reddy Mr. Bharat Kumar Reddy Sanapalli Ms. Rishita Tyagi Dr. Gowthamarajan Kuppusamy Dr. Praveen Thaggikuppe Krishnamurthy Dr. Ashish Devidas Wadhwani	JSS College of Pharmacy, Ooty	27/06/2020
4		Nanocarrier based Improved Blood Brain Barrier Penetration and Combinatorial Delivery of Anti- Retro Viral Drugs	202041032882	Dr. Nila Mary Varghese; Dr. Jawahar Natarajan	JSS College of Pharmacy, Ooty	31/07/2020
5		A Dental Herbal composition for cleaning tooth and oral cavity	202041015749	Dr Pramod Kumar TM	JSS College of Pharmacy, Mysuru	10/04/2020
6		An oral care composition	202041016388	Dr Pramod Kumar T M & Tejaswini T	JSS College of Pharmacy, Mysuru	15/04/2020
7		An oral care composition	202041018606	Dr Pramod Kumar T M & Tejaswini T	JSS College of Pharmacy, Mysuru	30/04/2020
8		Enantio-separation of Orphenadrine Citrate by UFLC technique: Comparative study on various polysaccharide Chiral Stationary Phases	202041030271	Dr. B M Gurupadayya	JSS College of Pharmacy, Mysuru	16/07/2020
9		12 Novel glitazones as antidiabetic agents synthesis and evaluation of	202041034109	Dr. BR Prashanth Kumar	JSS College of Pharmacy, Mysuru	08/08/2020

	Glucose Uptake Activity				
10	Polyphenol enriched blueberry beverage as anti-stressor and memory enhancer.	202041044443	Dr. Saravana Babu	JSS College of Pharmacy, Mysuru	13/10/2020
11	A methodology to yield a novel renin inhibitor with improved safety and efficacy	202041050489	Dr. H Yogesh Kumar	JSS College of Pharmacy, Mysuru	19/11/2020
12	Multiplex PCR assay with a unique cocktail of primer mix to identify pathogenic bacteria causing sepsis in neonates'	202041015935	Dr. Akila Prashanth	JSS Medical College	29/05/2020

PUBLISHED

SI n o	Year	Title of the patent published	Application No	Name of investors	Constituents Colleges of JSSAHER	Published Date (DD/MM/YY YY)
1	2015	A mini implant supporting tube for orthodontics	736/CHE/20 13	Dr. Nitin V Muralidhar	JSS Dental College & Hospital	25/12/2015
1	2016	Novel Glitazones as Ppar-α And Ppar-γ Agonists And α- Glucosidase Inhibitors	2266/CHE/2 012	Dr.M.J Nanjan, Dr. T.K Praveen, Dr. MJN Chandrasekar	JSS College of Pharmacy, Ooty	08/04/2016
2		Naturally Derived water soluble fraction of Fenugreek mucilage and its uses thereof in the Preparation nanoparticles	4445/CHE/2 012	Dr. Deepa Patahk Dr. K.Gowthamaraja n Dr. Ankur Gupta Dr. Bhagyasree Kamble Dr. Elango Kannan	JSS College of Pharmacy, Ooty	22/04/2016
1	2017	OOPCoGraph – OrofacialOrthopa edic patient compliance graph	2017410108 94	Dr.Prashanth S Dr.Seema Deshmukh Dr.Girish M S Dr.ShefaliKaul Dr.Khyatikaushal Mr. Ajit H M	JSS Dental College & Hospital	11/08/2017
2		ThumbSens-Vib: An Electronically Powered Habit breaker	2017410108 95	Dr.Seema Deshmukh Dr.Prashanth S Dr.Girish M S	JSS Dental College & Hospital	11/08/2017

				Dr.ArvindNeelaka ntan Dr.Sherun K C Mr. Ajit H M			
3		AuSFIn – Audio Sensory Feedback Interace	2017410108 96	Dr.Prashanth S Dr.Girish M S Dr.Henal Gandhi Mr. Ajit H M Mr. Rahul Bachawala	JSS Dental College & Hospital	11/08/2017	
4		A synergistic and non-toxic combination for treating liver disorders	2017410331 67	Dr. Chidambaram Saravana Babu	JSS College of Pharmacy, Mysuru	06/10/2017	
1	2018	Soft Tongue Restrainer	2018410046 43	Dr B Nandlal Dr Anoop Neelankavil Kochouseph Dr Ragavee Veeramani Dr Amira Imtiaz	JSS Dental College & Hospital	07/02/2018	
2		System and Method for Dynamic Translation of Speech to Sign Language for Oral Hygiene Education	2018410399 95	Dr B Nandlal Dr Raghavendra Shanbhog Dr Shreekanth Thotappa Dr Shreepriya Singhania Dr Bijlani Samhita Subhash Ms. Divya Nandlal Sahetya	JSS Dental College & Hospital	23/10/2019	
3		Isolation Of 5- Heptadeca-5, 8, 11-Trienyl 1. 3, 4-Oxadia2qle- 2thiol (Gla-1) As A Novel Human Topo-Poison Lead	2017410104 50	Dr. S.P. Dhanabal Dr. S Jubie Mr. M.V.N.L.Chaitany a	JSS College of Pharmacy, Ooty	28/09/2018	
1		2019	Encapsulate d drug admixture composition for brain targeting via intranasal route.	201741025232	Dr. K.Gowthamar ajan Kousalya S	JSS College of Pharmacy, Ooty	18/01/ 19
2	Surface Modified Benzyl quinolone carboxylic acid- Stearylami ne Conjugate s for managem		2019410252 98	Dr. T. K Praveen Chintamaneni Pavan Kumar Pindiprolu Satya Sesha Sai Kiran	JSS College of Pharmacy, Ooty	02/08/2019	

	ent of Alzheimer' s disease					
3	Solid Lipid Nanocarri ers of Surface Modified Niclosami de for targeting of Sialic Acid Receptors		2019410313 22	Dr. Praveen T K	JSS College of Pharmacy, Ooty	02/08/2019
4		A device for Providing continuous Positive Pressure for use during Neonatal Transport	2018410182 47	Dr. Srinivasamurthy D	JSS Medical College	22/11/2019
1	2020	Early Detection of Extrapulmonary Tuberculosis with specific Gene identification Process	2020410460 78	Dr Sumana K Ms. Talluri Rameshwari K R	Dept. of Microbiology, Faculty of Life Sciences, JSS AHER	06/11/2020
2		A composition for treating thrombocytopeni a	2020410116 387	Dr. S N Manjula	JSS College of Pharmacy, Mysuru	10/06/2020
3		Punica granatum (Pomegranate) as a intracanal irrigant in endodontics	2020410013 73	Dr Byrappa, Mysore University Dr Shubha Dr Sunil Tejaswi K L Dr Suneeth Shetty Mrs Namitha	JSS Dental College & Hospital	13/01/2020
4		System and Method for Cleft Speech Training at Home	2020410458 50	Inventors: Dr B Nandlal Ms. Divya N Sahetya, SJCE Kuhoo Tiwari, SJCE Dr Gayathri S, SJCE Co-Inventors: Ms. Meghana P, SJCE Ms. Dhanya Ganesh, SJCE Mr Abhishek N Ramesh, SJCE Ms Saaima Saher, SJCE Ms Tejaswini Pannasamudra Narendra, SJCE5	JSS Dental College & Hospital	21/10/2020

5	Feed Rail: Automated Gravity Feeding Device for Premature Infants	2017401090 0	Dr. Srinivasamurthy D	JSS Medical College	01/07/2020
6	Tele-Pag tube: Telescopic Pediatric Adjustable Gastrostomy Tube	2017410109 01	Dr. Srinivasamurthy D	JSS Medical College	28/10/2020

GRANTED

SI no	Year	Title of the patent published	Application No	Name of investors	Constituents Colleges of JSSAHER	Published Date (DD/MM/YYYY)
1	2011	Thiazolidine-2, 4diones and process thereof	245830	Dr. M.J Nanjan Dr. B.R. Prasantha Kumar Dr. Bhojraj Suresh	JSS College of Pharmacy, Ooty	03/02/2011
1	2012	2012 Process for synthesis of quinazolinones as anti mycobacterial agents 254676 Dr. S.N.Meyyanathan Mr. Permumal Nirmala Anbunathan Dr. Bhojraj Suresh		JSS College of Pharmacy, Ooty	05/12/2012	
1	2017	Process for isolation of bergenin from Caesalpinia digyna Rottler	286441	Dr.M.J Nanjan, Dr. R. Srinivasan, Dr. MJN Chandrasekar	JSS College of Pharmacy, Ooty	18/08/2017
2		Novel Glitazones Incorporated With Tyrosine: Synthesis And Antidiabetic Activity	284768	Dr.M.J Nanjan, Dr. BR. Prashantha kumar	JSS College of Pharmacy, Ooty	29/06/2017
1	2019	Pediatric Laryngoscope and Method of Use	US10,327,628 B2	Dr. Srinivasamurthy	JSS Medical College	25/06/2019
1	2020	Method of Processing Nanoemulsion gel comprising terbinafine or its salt form for Mycotic Infections	332264	Dr. Karri V V S Narayana Reddy Dr. R.SureshKumar Dr. Rajkumar Malayandi Dr. Gowthamarajan Kuppusamy	JSS College of Pharmacy, Ooty	18/02/2020
2		Isolation of Sulpha Quinovosyl Diacyl Glycerol (SI) (A Human Topopoison I), Using Flash Chromatograp	201741010426	Dr. S.P. Dhanabal Dr. S Jubie Mr. M.V.N.L.Chaitanya	JSS College of Pharmacy, Ooty	27/11/2020

32. Online Entrepreneurship Development Program (EDP)



A 10-day long Online Entrepreneurship development program was organized by SPARKLE CINE, the innovation and entrepreneurship arm of JSS Academy of Higher Education & Research (JSS AHER), sponsored by Department of Industries and Commerce, Government of Karnataka, in association with Technical Consultancy Services of Karnataka (TECSOK) and Department of Health System Management Studies of JSS AHER.

ttps://www.youtube.com/watch?v=IRAHPWC8R88&feature=youtu.be

33. Medical Mobile Application Development



Health remains the prime concern worldwide and the best approach to connect to and extend health services during the present hour of health crisis is through technological innovations in medical field. JSS AHER attempts to bring together technology and healthcare by conceptualizing an interdisciplinary webinar platform of 'Medical Mobile Application development' through its Virtual Academics Series.

A Webinar titled 'Medical Mobile Application Development' was organized on 12th May, 2020 by JSS Dental College & Hospital, JSS Academy of Higher Education & Research in collaboration with Manipal Institute of Technology, Manipal Academy of Higher Education & Research.

The Speaker, **Dr Poornima P Kundapur**, highlighted the importance of mobile applications in the field of medicine and dentistry and also conducted an online quiz. There was a huge response from the participants.

34. Asia Pacific Triple E Awards To Recognize Leaders In Entrepreneurship And Engagement In Higher Education



Fungo Mushrooms startup: Agripreneur students of JSS Academy of Higher Education & Research, submitted to the Student-driven Sustainability Project of the Year Award category of the 2020 Asia-Pacific Triple E Awards on Entrepreneurship and Engagement Excellence in Higher Education, won the first runner up award among top 5 shortlisted entries by Accreditation Council for Entrepreneurial and Engaged Universities, The Netherlands.

Students of JSS Academy of Higher Education & Research, Clint Davis, Raj Kiran, Ajay Jose and Razi Rahman who are entrepreneurs of 'Fungo Mushrooms' startup received the award in the Acia Pacific Award Ceremoney.

35. Biomedical Devices for Combating COVID-19: An effort by JSSAHER By JSS Academy of Higher Education & Research May 15, 2020

The JSS Academy of Higher education and Research (JSSAHER), Mysuru, the health sciences focused deemed university, has strategized its efforts to support the global initiative for research to prevent the spread and impact of Coronavirus pandemic in three ways: 1. Technological advancements that can support/decrease the risk to life for patients and health workers; 2. Discovery of new drugs and 3. Modeling studies that can support and predict the progress of the pandemic.

JSSAHER has developed five technologies/products that will indigenously support and make available low-cost interventions/applications and be valuable to humanity. These are:

1. Isolation – ICU on wheels – an application that will enable the mobilizing of the isolation and ICU facility to remotest site of the disaster and support the golden hour of treatment in any given situation be it pandemics or disasters. With increased hospitalization costs, isolation and intensive care may become available at homes with this new advancement. The approximate

cost of this set up at the present development stage is about Rs 4.00 lakhs and will get reduced in large scale manufacture.

2. The Low-cost ventilator – This Low-cost ventilator is portable, has a disposable ambu- bag and adjustable respiratory rate, and adjustable tidal volume and provides positive endexpiratory pressure (PEEP) which is not found in other low-cost ventilators. The cost of the ventilator is presently Rs 30,000 and can be further brought down.

3. Denti Safe – an application that will ensure the practice of dentistry safe for both patients and dentists. The Denti Safe application is scientifically developed a mobile device that can sterilize dental chairs and treatment areas in less than 20 minutes using a non-chemical intervention and relies on the specific wavelength of UV light that ensures the safety. The application is movable and can be used in multiple locations in a large dental hospital and will ensure the safety of the patient and the dentist. The approximate cost of the device is Rs 30,000 And can be reduced in the large-scale manufacture.

4. Multi-Mode Air Sanitiser – This Multimode air sanitiser has a three-step sanitization process, UV treatment at a specific wavelength to kill the virus, Ionisation that kills all microbes including virus and lastly a HEPA filter that reduces the particulate matter in the air. The cost of this air sanitizer is Rs 4500 and can come down drastically if bulk produced.

Handheld UV Surface sanitizer – This lithium-ion battery-operated device is a handy surface sanitizer that can be charged by a mobile charger uses UV radiation for sanitizing small surfaces that are frequently used by others, for example, lift buttons, Keyboards, Operating instruments etc. This personalized sanitizer can be carried by individuals in their pockets with ease. This will give the comfort of personal safety to individuals while using public places. The cost of the surface sanitizer is Rs 1250 and can be reduced further on bulk production.

These technologies that support the patient and healthcare provider safety and wellbeing will be valuable even beyond the pandemic times. JSSAHER is working on these technologies and makes them more cost-effective, robust, and highly efficient with the tireless effort of Dr S Balasubramanian, Director-Research, Dr Srinivasamurthy, Professor of Paediatrics, Dr B. Nandlal, Professor of Pediatric Dentistry, Dr H Basavannagowdappa, Dean, Faculty of Medicine, Dr S Ravindra, Dean Faculty of Dentistry. The research team also a collaborator with Mr Nagendra R Setti, M/s Ideas Unlimited, Mysuru – a local biomedical device making company for technical support. The District Administration of Mysore rendered support to carry out the research during the lockdown in mobilizing the manpower and materials. They all worked together with a passion for developing newer technologies in a short span of time. These projects were fully funded by the Research Development Fund of JSS Academy of Higher Education and Research, Mysuru.

"The Leadership of JSSAHER, especially the Blessings of the Chancellor, His Holiness Jagadguru Sri Shivarathri Deshikendra Mahaswamiji and the guidance and encouragement of Dr.C.G.Betsurmath- Executive Secretary, Dr.B.Suresh-Pro Chancellor, Dr. Surinder Singh-Vice Chancellor and Dr.B.Manjunatha- Registrar inspired the research team of JSSAHER toward developing these biomedical devices for Combating COVID-19.JSSAHER continues to endeavor its research initiatives that are impactful to society and benefit humanity".

36. JSS Research Foundation

https://jssrf.org/

About JSSRF - JSS Research Foundation

JSS Research Foundation, USA is a 501(c)(3) not for profit organization established in 2014, with the objective of being a global platform for human development through dedicated efforts in combining Science, Technology, Innovation and Research (STIR). Toward/s realizing these goals JSSRF has the support of JSS Institutions in India, including funding, promoting, furthering, and improving the educational programs besides supporting charities globally.

Vision:

JSSRF aims to be a global organization with the sole purpose of bridging gaps between economies, disseminating information in the field of Science and Technology through international collaborations and mutually beneficial partnerships with universities, research organizations, industries and institutions around the world for innovation and incubation of ideas.

Mission:

The mission of the JSS Research Foundation is to support and promote education, research, and outreach among JSS institutions and other similarly placed organizations.

As a credible research foundation dedicated to the advancement of science and technological study, JSSRF seeks to look beyond the obvious and take advantage of technology to foster research into drugs, vaccines and healthcare technology, and adopt various approaches to achieve the end goal of evolving into a devoted platform to globally promote research activity.

Aims and objectives :

The JSS Research Foundation, USA, shares the vision of His Holiness Jagadguru Sri Shivarathri Rajendra Mahaswamiji, the founder of the JSS Institutions in India, who said that "Ignorance is the root of all evils in the society and education is the sovereign remedy."

To realize this vision, the JSS Research Foundation (JSSRF) USA, in association with various JSS Institutions in India, will continue:

To work closely together to strengthen and grow the global network of JSS alumni to realize its vision of creating a better world through education, research, and outreach.

To bring together like-minded individuals to pursue cutting edge research and seek grants to fund research and establish required facilities.

To provide lifelong learning opportunities to alumni and stakeholders.

To establish institutions/units/offices where required to achieve its objectives of education, research, and outreach.

To endeavor to build an inclusive, clean, green, and a better world.

To channel donations, bequests, gifts and grants from alumni, chapters, associates, benefactors' corporations or trusts for use in education and research at JSS Institutions or other projects undertaken by JSS Research Foundation in the fields of Science, Technology, Innovation and Research and its outreach activities.

Donations will be used for:

- 1. Purchase of equipment; research and education
- 2. Establishment of reference and research facilities.
- 3. Establishment of endowments that JSS Institutions may use for its future growth and maintenance.

4. Scholarships and fellowships for students attending JSS Institutions in India and elsewhere, and for any other purposes specifically designated by donors, provided the donation furthers the education and research missions of JSSRF and its institutions.

5. Construction and renovation of research and education facilities.

6. Acquisition of real estate.

STIR: Science, Technology, Innovation and Research

The field of science and technology is always evolving, coming up with new discoveries and making new breakthroughs every second. In this fast changing world, JSSRF's primary aim is to stay on top of the constant developments, and combining the latest in Science, Technology, Innovation and Research – STIR, to meet the societal dimension of human development. The advancement of any knowledge institution is based on its ability to adapt to changing climates, creating relevant solutions and applying them for the benefit of society. STIR makes this possible by introducing the societal aspect, seeking to apply the learning acquired through research for the development and deployment of functions that support mankind.

JSSRF is dedicated to conducting evidence-based research and carrying out empirical studies in science and technology to aid in the acquisition, creation, and transfer of valuable knowledge. Improving upon previous systems that focused solely on academic learning, STIR encourages the adoption of approaches that concentrate on the various technological development processes, returning the focus to the application and developmental aspects of knowledge gained through research. To improve the overall quality of life is one of JSSRF's core values, and the way to achieve it is through sustained innovation – taking advantage of emerging technologies and advancements in science to further research and inspire creativity.

Link: https://jssrf.org/inaugural-video/

Projects

JSSRF will endeavour to undertake projects that are both relevant and impactful in the creation of new knowledge and ushering societal transformation. The Foundation will take this up with its various volunteering faculty and experts associated with the Foundation, aside from leveraging the strengths of various JSS Institutions and its collaborators. The Foundation will also extend support to the network of JSS Institutions in writing and submitting proposals to various funding agencies for research grants. The alumnus and the network of adjunct faculty will help advancing research initiatives and execution of various projects, and lead the transformation through research for making a better world. The various projects carried out by the JSSRF are given as follows:

My Future Family Game :

The 'My Future Family Game' is an interactive, tablet-based game aimed at adolescents to both educate and gather data from them on puberty, reproductive health and family planning. The game contains five stages or 'milestones' covering the significant stages in the development of a young adult: Becoming an Adult (Puberty), Graduation (Conclusion of education), Finding a Spouse, Marriage, and Children (Planning a Family). The game collects important data such as the age at which the players choose to attain each milestone and the people (parents and friends) or factors (religion) that influence their decisions. The game also offers easy to follow, clinical explanations of various vital physiological processes and the changes that they bring about in girls and boys.

Game

Origins

A dedicated team consisting of physicians, game developers, community health specialists, and support staff from Quinnipiac University, UCLA, and JSS Medical and Engineering Colleges in Mysore, India, worked together to bring the project to life. The Project was aimed at increasing awareness and creating interest in the use of family planning methods among youngsters in India.

The game was developed in response to a call for action on Grand Challenges in Global Health, aside from acquiring vital information on family planning goals. While the Game Design Collaborative at Quinnipiac University helped develop the My Future Family game, JSS Mahavidyapeetha deployed it throughout its rural and urban schools in Karnataka, India, in August 2017. In the summer of 2018, the game was further revised by the Sundaram Medical Foundation and the new version was introduced in Chennai, Tamil Nadu, India. SolitonZ Games is developing the game further where a new Birth Control milestone has been added along with pre and post assessment additions.

Challenges and Data

Owing to the sensitive nature of topics pertaining to sexual health and family planning in India, gathering data from and about adolescents has always been a tough task. The various difficulties that the team had had to overcome ranged from obtaining consent, to developing accurate survey techniques and designing questions in a language simple enough for young people to understand.

The game was designed based on information collected from focus groups and was subsequently piloted in 11 rural and urban schools in South India, in August 2017. Working within a single school system with approval from the senior administration, the game was launched in a secure, game environment that lifted societal constraints and allowed participants to play freely. The game was also made available in both English and Kannada, for the convenience of the players.

A total of 382 students participated, validating the game's effectiveness as a tool to both impart education and collect valuable data. Data collected through game play was cross verified through questionnaires.

Student Support and Development STUDENT SUPPORT AND DEVELOENT

The Student support and Development aims at fostering growth by supporting students with opportunities and scholarships for internships, presentations at conferences, and other special events that aid in their educational and professional progress.

This support will be provided through limited number of fellowships established with funds raised from its alumni, philanthropists, benefactors and also through the resources of the foundation, to provide financial support to students whose research paper is accepted at international conferences and for participation in other professional and co-curricular activities.

By financially empowering students to take advantage of opportunities in extracurricular and cocurricular settings, this program will substantially augment the quality of student life on campus. Every modest contribution to the Student Development Fund will be utilized towards enhancing the student experience, encouraging creativity, and improving the academic structure, thereby making a big difference in the overall development of students.

The details of such fellowships will be announced from time to time.


JSSRF Faculty Engagement

JSSRF is committed to its core values of nurturing excellence in education and research at JSS Institutions and elsewhere, and aims at creating and supporting opportunities for faculty to pursue their personal and professional development. Carrying out cutting-edge research attracts top talent, which in turn is essential to attract international visibility and collaborations. For this purpose, as well as to stay on top of advancements in their respective fields, faculty members are encouraged and regularly required to participate in international conferences and symposia. Since funding for these activities is limited, the Faculty Engagement program aims at supporting faculty in these initiatives.

JSSRF will work with likeminded organizations with whom it will have strategic collaborations and create opportunities for learning, training, and carrying out research in diverse fields. The foundation will make periodical announcements for such opportunities and funding that may become available. The funds will also be utilized to develop international collaborative programs with other academic institutions around the world.

Continuing Education and Professional Development

JSSRF will endeavour to provide high-quality face-to-face, online, and blended learning opportunities to its alumni and others across North America and beyond to achieve their professional goals with Continuing Education & Professional Development and help them advance their career or pursue a new path through conferences, workshops, and courses.

The details will be announced on the website and the calendar made available to its registered users.



Program Schedule



TOGETHER TOWARDS A BETTER WORLD

Time (IST)	Program	Speaker
06:00PM - 06:05PM	Moderator Welcomes HHS, Directors, Speakers. Brief about JSSRF and Conference Agenda	Mrs. Anitha Niranjan
06:05PM - 06:15PM	Welcome & Introduction to JSSRF	Dr. Suresh Bhojraj
06:15PM - 06:30PM	JSSRF Website Launch & Blessings	His Holiness Jagadguru Sri Shivarathri Deshikendra Mahaswamiji
06:30PM - 06:45PM	Keynote Address	Dr. Ronald T. Piervincenzi CEO, United States Pharmacopeia
06:45PM - 07:15PM	Invited Speaker	Dr. Jaap Venema EVP and CSO, United States Pharmacopeia
07:15PM - 07:45PM	Invited Speaker	Dr. Suresh Jadhav Executive Director, Serum Institute of India Limited
07:45PM - 08:15PM	Invited Speaker	Dr. Krishna Ella Chairman & Managing Director, Bharat Biotech International Limited
08:15PM - 08:45PM	Invited Speaker	Dr. Eshwar Reddy JDC, CDSCO, India
08:45PM - 09:15PM	Invited Speaker	Dr. Surinder Singh Vice Chancellor, JSS AHER
09:15PM - 09:30PM	Vote of Thanks	Dr. Vishakantha Murthy

For Registration & Queries Contact: Arjun Venkat E-mail: info@jssrf.org







About JSS Academy of Higher Education & Research

JSS Academy of Higher Education & Research, is a Deemed to be University located in Mysuru, Karnataka, established in 2008 under Section 3 of the UGC Act 1956 and is part of JSS Mahavidyapeetha, which runs a variety of educational institutions. This Deemed-to-be University is recognized by MHRD and accredited by NAAC with A+ Grade (3.48 CGPA). JSS AHER has been graded as Category-I Deemed-to-be University by UGC in the Year 2018.

The Deemed to be University has been focusing on teaching, research and health services since its inception. Under the leadership and gracious Patronage and Blessings of His Holiness Jagadguru Sri Shivarathri Deshikendra Mahaswamiji, the Chancellor of JSS Academy of Higher Education & Research, Pro Chancellor, Dr. B.Suresh, a noted multifaceted leader of repute and Vice Chancellor, Dr. Surinder Singh, an acclaimed leader who was the former Drug Controller General of India and former Director of National Institute of Biologicals. The organization has made great progress in grooming graduates, postgraduates, and Ph.D. researchers by providing effective value based education across our institutions by focusing on overall development of an individual through state-of-art facilities to make the learner a useful citizen to the society.

In the Field of Innovation the Institution has been ranked 4th among the private institutions in INDIA by Atal Ranking of Institutions on Innovation Achievements (ARIIA) based on the impact that the organization created with its innovation model.

The Current health crisis with the COVID outbreak requires that organizations like ours take up the lead role in developing indegenous models that can help the society and the common man by creating technologies that are reliable, effective and yet affordable.JSS AHER has always strived hard towards quality and excellence and the biomedical devices developed to combat the COVID 19 crisis is an impactful & responsible step toward touching millions of life and to create affordable medical care available to our society.



About Ideas Unlimited, Mysuru

Ideas Unlimited, Mysuru is an R&D lab founded in 2010 focused on turning ideas into products. Ideas Unlimited specializes in defence technologies, bionics, robotics, animatronics, simulators, wearable electronic systems, medical and hospital devices, consumer electronics and more. We have developed unique model of developing ideas into products in the lab. A separate manufacturing entity, Ideas Manufacturing Mysore Private Limited - manufactures products developed at the lab. Website: www.ideas-unlimited.in

Isolation-ICU on Wheels



How about a full fledged ICU reaching a sick Covid-19 patient in a remote area! "I-ICU on wheels" does it for you!

Salient Features

- Oxygen & Ventilator
- Critical Medication Infusion
- Patient Isolation
- Vitals monitor
- Temperature regulated cabinet
- Head end access
- Can be transported in a box and assembled on site
 ... All this on wheels!

Applications

Epidemics, Disaster Management and Capacity Expansion in existing hospitals.



Low-Cost Ventilator



Low cost ventilator is the need of time during Covid-19 Pandemic!

Salient Features

- Portable
- Disposable AMBU bag
- Adjustable Respiratory rate
- Adjustable tidal volume
- Provides PEEP (Positive End Expiratory Pressure Not present in other Low Cost ventilators)

Hand-held UV Surface Sanitizer



Sanitize any surface, now in hand held form factor!

Salient Features:

- Chargeable Lithium Ion Battery inside
- Can use any mobile charger
- 2 Watts of UV Radiation
 Safe Design Master
- Power button
- DO NOT EXPOSE SKIN/EYES

Low-cost innovations that can save lives during a pandemic

JSS Academy of Higher Education and Research comes up with ICU on wheels, low-cost ventilator, multi-mode air sanitiser



Mysuru, May 11 (BCT)- While the Coronavirus pandemic has triggered a lot of innovations globally including technological developments, discovery of new drugs and vaccines, development of rapid testing diagnostics, innovations in medical practices, mathematical modelling and predictive sciences, here in Mysuru, an ICU on wheels and a low-cost ventilator have been developed

The innovations have sprung up from JSS Academy of Higher Education and Research (JSS AHER) that was recently ranked 20th in the world and 1st in India by Times Higher Education (THE) in their impact rankings.

Idea Unlimited Mysuru, a citybased biomedical devices making company, along with JSS AHER jointly developed mobile ICU and other biomedical devices to combat COVID-19 and other pandemics. These devices were readied in just 12 days during the lockdown and were unveiled at Suttur Mutt last Friday. The devices earned huge pub-

lic appreciation and also drew the attention of Industries Minister Jagadish Shettar, Mysuru District Minister S.T. Somashekar and Urban development Minister B.A. Basavarai. The equipment was demonstrated to the VVIPs in the presence of Suttur

Seer Sri Shivarathri Deshikendra Swamiji, MP Pratap Simha and MLAs S.A. Ramdas, L. Nagendra, G.T. Devegowda, B. Harshavardhan and C.S. Niranian Kumar

These technologies or products will indigenously support and make available low-cost interventions and applications and be valuable to humanity. According to Nagendra Setti of Idea Unlimited Mysuru and Dr. Srinivasamurthy who developed the Mobile ICU, the innovation helps to provide timely care to the patients in emergency situations.

ICU on wheels

Isolation ICU on wheels is an application that will enable mobilising of the isolation and ICU facility to remotest site of disaster and support the golden hour of treatment in any given situation, be it a pandemic or a disaster. With increased hospitalisation costs, isolation and intensive care may become available at homes with this new advancement. The approximate cost of this set up at the present development stage is about Rs. 4 lakh and will get reduced in large scale manufacture.

Low-cost ventilator

This low-cost ventilator is portable, has a disposable ambu-bag, adjustable respiratory rate, adjustable tidal volume and

Tailors upset over being ignored

provides Positive End Expiratory Pressure (PEEP) which is not found in other low-cost ventilators. The cost of the ventilator is presently Rs. 30,000 and can be further brought down.

Denti Safe

Denti Safe is an application that will ensure the practice of dentistry safe for both patients and dentists. The Denti Safe application is scientifically developed mobile device that can sterilise dental chairs and treatment areas in less than 20 minutes using a non-chemical intervention and relies on the specific wave length of UV light that ensures safety.

The application is movable and can be used in multiple locations in a large dental hospital and will ensure the safety of the natient and the dentist. The anproximate cost of the device is Rs. 30.000 and can be reduced in the large-scale manufacture. Multi-mode air sanitiser

This multi-mode air sanitiser has a three-step sanitisation process, UV treatment at a specific wave length to kill the virus, Ionisation that kills all microbes including virus and lastly a HEPA (High Efficiency Particulate Air) filter that reduces the particulate matter in the air. The cost of this air sanitiser is Rs. 4 500 and can come down dras-







tically if bulk produced. Hand-held UV surface sanitiser

This lithium-ion battery-operated device is a handy surface sanitiser that can be charged by a mobile charger and uses UV radiation for sanitising small surfaces that are frequently used by others for example lift buttons, key boards, operating instruments etc. This personalised sanitiser can be carried by individuals in their pockets with ease. This will give the comfort of personal safety to individuals while using public places. The cost of the surface sanitiser is

107 Mysuru journalists test negative for COVID-19

Rs. 1.250 and can be reduced further on bulk production.

These technologies that support the patient and healthcare provider safety and well-being will be valuable even beyond the nandemic and in neaceful times

The research team of Director-Research Dr. S. Balasubramanian, Professor of Paediatrics Dr. Srinivasamurthy, Professor of Paediatric Dentistry Dr. B. Nandlal, Dean & Faculty of Medicine Dr. H. Basavannagowdappa, Dean & Faculty of Dentistry Dr. S. Ravindra and Registrar Dr. B. Majunatha have contributed immensely for the projects.