Patrons

Dr.Chenraj Roychand, President, JGI Trust, Bengaluru

Dr.Krishnadas Nair, Chancellor, Jain (Deemed-to-be University)

Dr.Sundararajan N, Vice-Chancellor, Jain (Deemed-to-be University)

Advisory Committee:

Dr. Krishnan N V H, Registrar, Jain (Deemed-to-be University)

Dr. Varalakshmi K N, Director, School of Sciences, Block I , Jain (Deemed-to-be University)

Prof. Sridhara Murthy K R, Jain (Deemed-to-be University)

Convener:

Prof. Srinivasan M R, Department of Physics, Jain (Deemed-to-be University)
(M): 7760 484 134
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Organising Committee:

Dr. Shanthi N
Dr. Dinesh Kumar
Dr. Rajagopal S
Dr. Thiagaraj S
Dr. Nagaiah Kambhala

Student Volunteers:

Mr.Ajal Jalal
Mr.Akhil Varghese
Ms.Ashwini Anil
Ms.Keerthana
Ms.Monica
Mr.Prajjwaldip Khawas
Ms.Shivani Nithu
Mr.Suhas
Ms.Sumana S
Mr.Suraj Vashista

Who can attend?

Teachers from Science and Engineering Colleges as well as graduate, postgraduate and research students

Registration Fees

Faculty from Academic Institutions: **Rs 300/** per person and Students **Rs.150/** per person.

The registration fees can be paid on the day of the seminar. However, registration has to be done before **31st August.**

For Registration Contact: the CONVENER

Program Schedule

Wednesday, 4th September 2019

Registration between 9 and 10AM	
Inauguration and Introductory Remarks by the guests of honour, 10.00 to 10.15 am	**Dr. Sundararajan N** Vice-Chancellor, **Dr. Krishnan N V H** Registrar, JAIN
Materials for Repair and Regeneration of Bone 10.20 to 11.30 am	**Prof. Kaushik Chatterjee**
TEA BREAK	
Engineering Nanomaterials Surface Chemistries for Biodiagnostics and Biologics Delivery 11.45 to 1.00 pm	**Prof. Subinor Roy Rana**
LUNCH BREAK	
Ceramic Materials for Biomedical Applications 2.00 to 3.15 pm	**Dr. Ramachandra Rao**
Translating Dental Material Research: Challenges and Opportunities 3.15 to 4.30 pm	**Dr. Shivaranjani Gali**
4.30 to 5.00PM Vote of Thanks	
TEA BREAK	
Distribution of Participation Certificates	

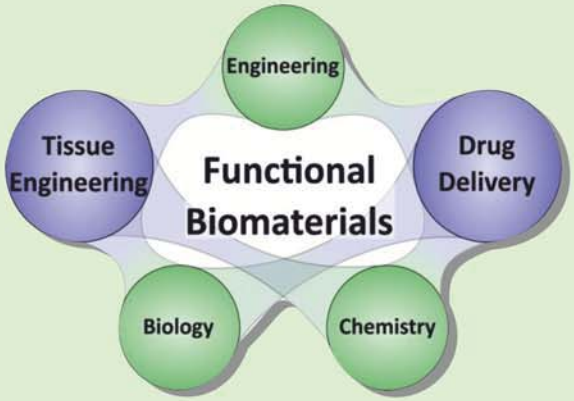
JGI JAIN DEEMED-TO-BE UNIVERSITY

Department of Physics
School of Sciences, Block I

Announces

One Day Seminar on

Functional Biomaterials



Date: Wednesday, 4th September 2019
Time: 09.00 am to 5.00 pm

Venue

Conference Hall, Knowledge Campus,
Jain (Deemed-to-be University)
#44/4, District Fund Road,
Behind Big Bazaar, Jayanagar 9th Block,
Bengaluru 560069

JAIN (Deemed-to-be University), promoted by the JGI Group, is among the top 5 private Universities in Karnataka (KSURF Rankings, 2017) and is ranked No.21 in India (India Today Rankings, 2017). **JAIN** is accredited by NAAC with Grade 'A' and a score of 3.31. **JAIN** has been provided Graded Autonomy by MHRD, Govt. of India and also figures in the QS World Rankings 2019 of Universities in BRICS countries (Brazil, Russia, India, China & South Africa) with a rank between 351- 400 among 9000 participating Universities. **JAIN** is a Multi-faculty University offering Ph.D, PG, PG Diploma and UG programs in Engineering & Technology, Sciences, Management, Commerce, Arts and Social Sciences and Law. **JAIN** has emerged as a preferred choice for students from all over India through its emphasis on Academic Excellence, Entrepreneurship development, Sports, Extension activities, Value-added add - on courses Research and Development in frontier areas, industry linkages, collaborations and unique specialisations. The student strength is 11000+ in 6 faculties . More than 380 foreign students from 38 countries study in **JAIN.**

Some milestones of **JAIN (Deemed-to-be University):**

- 7 students have represented India in Olympic Games.
- 50+ ventures incubated till date through Chenraj Roychand Center for Entrepreneurship (CRCE) and DST Funded, JUINCUBATOR
- Research projects funded by agencies such as DST, MNRE, DRDO, ARDB, ICSSR, ICMR
- Total Research publications are 2800+
- 15 patents filed; 7 patents granted of which 2 have been commercialised
- Dedicated Research centres established for Nano and Material Science, Centre for Emerging Technologies, Disaster Mitigation, Fire and Combustion Research, Social Science & Education and Ancient History & Culture
- Technology Enabled Learning, Digital Initiatives and paperless administration.

School of Sciences Block I, housing the PG and research programs in physics, biochemistry, microbiology and biotechnology is located in Jayanagar, 3rd block, 9th Main, Bengaluru. The physics department offers specialisation in materials science and electronics.

Preamble

Biomaterials are materials that have been designed and engineered to interact with biological systems for medical purposes. These materials could be employed either for therapy (treat, augment, repair or replace a tissue function of the body) or medical diagnosis. Biomaterials have to be necessarily biocompatible and are usually specific to an application. The science of biomaterials encompasses elements of *medicine, biology, chemistry, tissue engineering* and *materials science*. It is an applied science with many companies investing large amounts of money into the development of new products. Currently, biomaterials have been used in *bone joint replacements, bone plates, bone cement, pins and screws for fracture stabilisation, intraocular lenses for eye surgery , artificial ligaments and tendons, dental implants for tooth fixation, blood vessel prostheses heart valves, stents, skin repair devices (artificial tissue), cochlear replacements, breast implants, drug delivery mechanisms, vascular grafts, nerve conduits, surgical sutures, clips, and staples for wound closure etc.* Global biomaterials market was over USD 94 billion in 2018 and is expected to reach above USD 256.2 billion by 2025.

Biomaterials can be derived either from nature or synthesised in the laboratory using a variety of chemical approaches utilising metallic components, polymers, ceramics or composite materials. They are often used and/or adapted for a medical application, and thus comprise whole or part of a living structure or biomedical device which performs, augments, or replaces a natural function. Such functions may be relatively passive, like being used for a heart valve or may be bioactive with a more interactive functionality. A biomaterial may also be an autograft, allograft or xenograft used as a transplant material. A biomaterial is often designed to be bioactive i.e. to induce a physiological response that is supportive of the biomaterial's function and performance.

Seminar Objectives

The seminar aims at enabling college teachers and students to understand the latest research trends in biomaterials and also to appreciate the importance of biomaterials in therapeutic medicine.

About the Speakers

Dr. Kaushik Chatterjee received his Ph.D. from Pennsylvania State University, USA after completing M.S. from the University of Virginia, USA and B.E. from Bengal Engineering College, India. He worked as a postdoctoral fellow jointly at the National Institute of Standards and Technology and the National Institutes of Health, USA. He joined the Indian Institute of Science (IISc), Bangalore in 2011 where he is currently an Associate Professor in the Department of Materials Engineering and associated with the Centre for Biosystems Science and Engineering. His research group focuses on materials for biomedical applications

Dr.Subinoroy Rana is currently an Assistant Professor in nanobiotechnology in the Materials Research Centre at IISc Bangalore. Prior to joining IISc, he was an Assistant Professor at Newcastle University, UK. He was a Marie Curie research fellow at the Imperial College London after completing PhD on functionalized metal nanoparticles for biosensing applications at the University of Massachusetts Amherst, USA. His multidisciplinary research focuses on chemistry on nanomaterials surfaces and their applications in diagnostics, personalized drug development and precision medicine.

Dr. R. Ramachandra Rao, has been serving as a Scientist at the CSIR-National Aerospace Laboratories since 1993. He worked as a Lecturer in Dental Materials Science, during 1985 to 1989 at the College of Dental Surgery, Manipal, India. His research areas are synthesis and processing of nanoceramic materials, novel shaping techniques for ceramics including additive manufacturing and spray coating for biomedical and aerospace applications. His work on synthesis, processing and fabrication of porous scaffolds from calcium phosphates for tissue engineering applications, their in-vitro and animal characterisation are well recognised.

Dr.Sivaranjani Gali is currently an Associate Professor at the Faculty of Dental Sciences, Ramaiah University of Applied Sciences, Bangalore. She has specialised in Prosthodontics and is currently pursuing her PhD. Her research interests are dental glass ceramics, zirconia, translational research and biomedical device development. She was awarded the Wellcome Trust DBT India Alliance Research Training Fellowship for Clinicians in 2015. She is well trained in material science such as synthesis, mechanical characterisation and cytocompatibility testing on human gingival cell lines. Dr.Gali bagged the Paffenbarger Award at the prestigious Academy of Dental Materials, becoming the first Indian to win the award, in 2016 at Chicago, USA.