

विज्ञान तंत्रज्ञान अनुवाद

DEPARTMENT OF SCIENCE AND TECHNOLOGY NITTE UNIVERSITY TECHNOLOGY ENABLING CENTRE



DST NU-TEC Chronicle | June to September 2020

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"I am very pleased to learn that the DST-Technology Enabling Center at Nitte (Deemed to be University) is bringing out the first Newsletter. I wish the faculty and staff at the Center all the best in their endeavors."



Shri Nitte Vinaya Hegde



"It is gratifying to know that the DST-Technology Enabling Centre at NUCSER, in spite of COVID-19, is carrying out noteworthy research bringing together technologists, medical and engineering scientists to develop biomedical devices and food processing ventures which is the need of the hour. Congratulations. May God bless you and your team in all your endeavors."

Prof. Dr Shantharam Shetty
Pro-Chancellor

"Institutional networking is the key to create an enabling environment for translational research and technology development. I wish the DST Technology Enabling Center at the Nitte (Deemed to be University), Paneer campus all the best in their endeavors to bring educational institutions and industries together to facilitate development of innovative solutions that can benefit society at large."



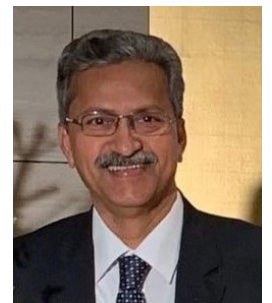
Shri Vishal Hegde
Pro-Chancellor (Admin)



"Nitte (Deemed to be University) is proud to host the DST-Technology Enabling Center that is intended to network with institutions and industries to facilitate translation of research findings to viable technologies. I am confident that the DST NU-TEC at Nitte will strive hard to go beyond the set targets in the activities and communicate effectively with all partners through this Newsletter."

Prof. Dr Satheesh Kumar Bhandary
Vice-Chancellor

"The DST- Technology Enabling Centre has a place of pride among the many innovative centres of excellence established in our university. I am glad that the centre, with a vision to be a translational innovation centre for providing solutions that address market requirements, is planning to bring out its first newsletter. I wish all the best to the editorial team and wish that NU-TEC emerges as a one-stop centre for providing business solutions for the Indian industry by stimulating innovation and effective technology enablement."



Prof. Dr. M.S. Moodithaya
Pro-Vice-Chancellor



"DST NU-TEC facilitates our stride towards Atmanirbhar Bharat. Academia is the prime source for the generation of new knowledge and its conversion to wealth and NU-TEC envisages an effective institutional mechanism for translation of the R&D output of the region into technological wealth. I wish all the very best to the dynamic and enterprising staff members who are taking forward this exciting new venture."

Prof. Dr Alka Kulkarni
Registrar



AUSPICIOUS BEGINNING AT OUR NEW ABODE



OUR CHANCELLOR SEEKS BLESSINGS FOR THE TEC



THE VICE CHANCELLOR LEADS THE TEC TEAM



THE TEC SQUAD

CREATION OF INDEPENDENT FACILITY FOR DST NU-TEC

TEC PULSE..

Nitte University-TEC is one of the ten centers established at the national level. DST and other national funding agencies realize that most of the academic research decorates the shelves in the library of the institutions though they have the potential to become a technology. TEC was born to make research meaningful and translational.

The newly developed centre was inaugurated by the Hon'ble Chancellor, H.E. Shri Vinaya Hegde in the presence of Prof. Dr Satheesh Kumar Bhandary, Hon'ble Vice-Chancellor and Prof. Dr Moodithaya, Pro-Vice-Chancellor on October 23, 2020. Prof. Dr Indrani Karunasagar, Director of TEC and Prof. Dr Smitha Hegde, Coordinator unravelled the newly-created facilities, which includes patents, IPR and technology transfer cell headed by Prof. Dr Iddya Karunasagar. The centre houses state-of-art training facilities with smart board, networking and discussion rooms, webinar and video-conferencing rooms.

FOCUS OF DST NU-TEC

“Necessity is the mother of all inventions and innovations”

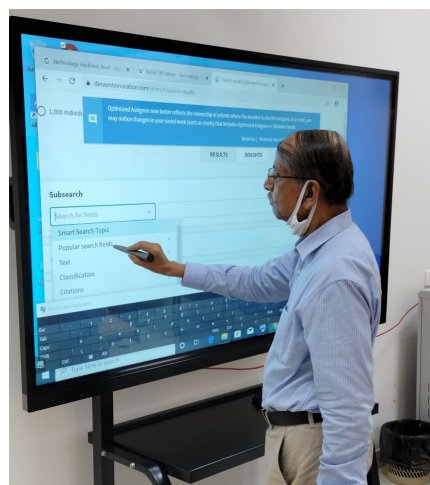
The current necessity of the nation is translation of bench-work research to technology for a sustainable development. To foster this ideology the Department of Science and Technology (DST), Government of India has initiated the Technology Enabling Centres (TEC) in several Universities in the country. Nitte University Technology Enabling Centre (DST NU-TEC) is one among the 10 centres established at the national level. DST has provided the support for setting up state-of-art networking equipment and infrastructural facilities to the centre. The objective of TEC will be to create an ecosystem for technology development in the universities and provide a platform to network researchers with other institutes, national laboratories and industries in the region and to address the local needs through scientific intervention for sustainable solutions.

The focus of DST NU-TEC, Nitte University Centre for Science Education and Research (NUCSE), Nitte (Deemed to be University), located at the Paneer Campus, Deralakatte, Mangalore, will be to address the socio-economic needs of the country by identifying problems, promoting innovation in solving them and translation of academic research to technology. Establishing network and collaborative community of researchers, practitioners and market makers and developing need based technology to revitalize the economy of the nation is the objective of such centres.



“Successful knowledge transfer involves neither computers nor documents but rather interaction between people”

-Thomas H. Davenport



DST NU-TEC

TECHNOLOGY TRANSFER

The level of maturity of technology is indicated in terms of 'Technology Readiness Level' (TRL). Research leads may be at TRL 1 or TRL 2. There may be a need to continue research to demonstrate feasibility of the technology and this moves the research leads from TRL 2 to TRL 4. Technology development will lead to progress from TRL 3 to TRL 6, technology demonstration from TRL 5 to TRL 7.

NETWORKING

The role of DST NU-TEC will be to introduce and support innovative research and entrepreneurship via networking and collaborations with incubators, technology development institutions & research labs for refining of the technologies. This will bridge the gap between academia and industry and bring conceptualization to commercialization.



The vision of DST NU-TEC is to be a centre of eminence addressing socio-economic needs of the country by promoting innovation in research, translating academic research into technology by establishing a network of collaborative community of researchers, entrepreneurs and industrialists

REACHING OUT TO STAKEHOLDERS- DR ANITA AGGARWAL

NITTE
(Deemed to be University)

Webinar **DST - TEC**

DST TECHNOLOGY ENABLING CENTER AT NITTE DU (NU-TEC)

Resource Persons

Dr. Satheesh Kumar Bhandary
Vice chancellor
Nitte (Deemed to be University)

Dr. Anita Aggarwal
Coordinator, DST TEC Programme
Dept Science & Technology, New Delhi

Dr. Alka Kulkarni
Registrar
Nitte (Deemed to be University)

Dr. Indrani Karunasagar
Director R&D
Nitte (Deemed to be University)

Topics to be discussed

- Philosophy of DST-TEC
- Nitte group of Institutions
- Institutional linkages with NU-TEC
- Proposed activities at NU-TEC

Date: June 06, 2020
Time: 10.00 – 11.00 AM

Moderator

Dr. Smitha Hegde
Coordinator NUTEK

Registration Link : <https://form.jotform.com/201542382760451>

“Aligning ourselves with the national missions like Startup India, Make in India, Digital India Stand-Up India, Smart India, Skill India is the need of the hour”

A virtual session regarding the establishment of Technology Enabling Centre at Nitte (DU) was held on June 6, 2020. Opening remarks were delivered by Prof. Dr Satheesh Kumar Bhandary, Hon’ble Vice Chancellor, Nitte (DU). Dr Anita Aggarwal Scientist, Department of Science and Technology spoke on vision of Technology Enabling Centres (TEC). She highlighted on TEC activities such as technology mining, assessment of technology requirements, evaluating the product maturity, conducting market studies and periodic workshops in collaboration with industries. In addition, she described the performance indicators of TEC which include technology translation, patent application, design registration, industry consultancy, startups created, interaction with industries etc. Prof. Dr Alka Kulkarni, Registrar, Nitte, DU emphasized that bench work research done in academia should reach out to serve the societal needs. She also briefed on linkages with NAIN and Atal incubation Centre in the engineering campus and MoU with industries that will enable DST NU-TEC to attain the vision set by DST. Prof. Dr Indrani Karunasagar explained about role of TEC in smart village programme, establishment of patent cell and other activities initiated to achieve the goal of TEC. She urged the local communities to come forth with their problems to enable seeking sustainable solutions.

YouTube link: <https://www.youtube.com/watch?v=lw24F14Ojzk>



Think local and act global

“Technology should have a market point and offer innovative solution and ultimately benefit the nation. The core vision of TEC is to connect R&D labs with industries, startups MSMEs and align science and technology with national priority for the sustainable development. Let us all think local and act global for the betterment of our nation”

COPING WITH PANDEMIC

REALITY CHECK IN THE TIMES OF COVID

Webinar on “**Technological Challenges during Covid Pandemic**” was organized by DST NU-TEC on May 22, 2020. The purpose of the webinar that included global experts was to discuss challenges in diagnosis, immunity, vaccine development and technological innovations in India. Resource persons for the webinar included Dr Satheesh Kumar Bhandary, Hon’ble Vice-Chancellor, Nitte DU; Dr V. Ravi, Head, Neurovirology NIMHANS, Dr Bellur Prabhakar, Dean (Research), Univ, Illinois, Chicago, Dr K.V. Gangadharan, Professor, NITK, Surathkal. Dr Iddya Karunasagar and Dr Indrani Karunasagar, moderators of the webinar explained the need to listen to experts’ opinion about the pandemic and urged all to participate in discussions on SarsCoV2 virus. They introduced the speakers and their expertise relevant to the pandemic. Dr Satheesh Kumar Bhandary, delivered the opening remarks. He stated that the country should develop a robust strategy to prevent, contain and treat infections using modern technology. Dr V. Ravi spoke on challenges and limitations in diagnostics as this holds importance and relevance in the present context. Dr Bellur Prabhakar, threw light upon currently approved therapeutics and the need to discuss repurposing of drugs. Dr K.V. Gangadharan, shared his experience of developing circuit split ventilators. Dr Satheesh Kumar Bhandary suggested interactive session with such renowned experts and urged all those who could not attend the webinar to listen to the experts as their expert opinion on this important topic would be made available through Nitte Youtube platform.

WEBINAR
TECHNOLOGICAL CHALLENGES DURING COVID PANDEMIC
Date: May 22, 2020
Time: 08:50 – 09:30 AM

Resource Persons

Dr. Satheesh Kumar Bhandary, Vice Chancellor, NITTE (Deemed to be University)
Dr. V. Ravi, Head, Neurovirology, NIMHANS
Dr. Bellur Prabhakar, Dean (Research), Univ Illinois, Chicago
Dr. K. V. Gangadharan, Professor, NITK, Surathkal

Topics to be discussed

- Challenges in diagnosis
- Clinical challenges in Chicago
- Immunity, vaccine development
- Technological innovations in India

Moderators

Dr. Iddya Karunasagar, Senior Director (IR), NITTE (Deemed to be University)
Dr. Indrani Karunasagar, Director (R&D), NITTE (Deemed to be University)

Registration link: <https://form.jetform.com/201390175625048>

YouTube link:

<https://www.youtube.com/watch?v=RLzjChs7wcc>

Webinar on “**A functional genomics approach to dissect heterogeneity in COVID-19 outcome**” was organized under DST-NUTEC platform on May 22, 2020. Dr Satheesh Kumar Bhandary, Hon’ble Vice-Chancellor, Nitte DU in his opening remarks highlighted the diversity of the SARS CoV2 virus and its association with varying severity of infection in different parts of the world. The keynote speaker of the webinar was Dr Vinod Kumar MG, Assistant Professor, Department of Internal medicine, Radboud University, Nijmegen Medical Center, The Netherlands. He spoke on various factors connected to the global crisis caused due to of COVID-19 focusing on the host genetic factors. Since COVID-19 is a complex disease, genetic approach together with role of environmental factors are to be considered to get a holistic picture. His original research on COVID19 explained about organ-on-chip methods and proteomics to elucidate the severity of the disease. The webinar was moderated by Dr Iddya Karunasagar, Senior Director (International Relations) Nitte DU and Prof Dr Indrani Karunasagar, Director R&D who were proud to present their former student and his research areas to the audience.

YouTube link: <https://www.youtube.com/watch?v=JW2MEfy2CrY>

WEBINAR
Nitte University Centre for Science Education and research (NUOSER) in partnership with Consortium of Rare Genetic and Bone Marrow Disorders, India Network@ NITTE DU
Topic: A functional genomics approach to dissect heterogeneity in COVID-19 outcome
Date: 22-05-2020 | Time: 12:00 to 01:00 PM

Topics to be discussed:

- Understanding the heterogeneity in COVID-19 outcome
- Determining the genetic susceptibility traits that correlate with the severity in COVID-19 infection

Dr. Vinod Kumar M G
Assistant Professor, Hypatia Tenure Track Fellow,
Department of Internal Medicine, Radboud Univ, Nijmegen Medical Center, The Netherlands

Opening Remarks by

Dr. Satheesh Kumar Bhandary,
Vice Chancellor,
NITTE (Deemed to be University)

Moderators

Dr. Iddya Karunasagar, Senior Director (IR), NITTE (Deemed to be University)
Dr. Indrani Karunasagar, Director (R&D), NITTE (Deemed to be University)

Registration link: <https://form.iotform.com/201401189270446>

TEC WEBINAR SERIES

May 22, 2020
“Technological Challenges during Covid pandemic”

May 22, 2020
“A functional genomics approach to dissect heterogeneity in COVID-19 outcome”

May 26, 2020
“Research and development and IPR during COVID-19”

NITTE WEBINAR DST - TEC
Research & Development and IPR during COVID-19 Pandemic

Introductory remarks
 Dr. Satheesh Kumar Bhandary, Vice Chancellor, NITTE (Deemed to be University)
 Moderator: Dr. Indrani Karunasagar, Director (R & D), NITTE (Deemed to be University)

Panelists
 Dr. T.S. Rao, Rtd Senior Advisor, Department of Biotechnology, Government of India
 Dr. Iddya Karunasagar, Senior Director, (International relations), NITTE (Deemed to be University)
 Dr. Sharana Gauda, Asst Comptroller of Patents and Designs, Patent Office, Chennai

on 26th May 2020, 09.30-10.30 AM
 Registration link: <https://form.jotform.com/201410188179453>

Webinar on “**Research and development and IPR during COVID-19**” was organized under DST NU-TEC platform on May 26, 2020. Dr Satheesh Kumar Bhandary, in highlighting the need for this important webinar, stated that change in strategy in research is required during unprecedented time like the Covid-19 pandemic. This is a highly challenging situation with a large number of potential solutions. Dr T.S Rao, Rtd Senior Advisor, Department of Biotechnology informed all that government funding bodies and researchers should coordinate with each other for the effective translation of research. Research proposal made in the area of Covid-19 or any other research should be a result of critical thinking, should be well structured and should have a translational research outcome. There should be a collaboration between basic scientists and clinicians for the effective implementation of research. Dr Iddya Karunasagar spoke on strategies for promoting research in Nitte University through various intra and extramural research grants, energizing the faculty by organizing meeting with external experts, conduct of project writing workshops, student participation in Anveshan etc. Dr Sharana, Gauda Asst Comptroller, Patents and Designs, Gol, Chennai stated that there is a rise in the research leading to development of diagnostic kits and antiretroviral formulations. To continue the process of patent filing, e-filing facility and postal services were created. Timeline for the Indian Patent act and rule are expedited in view of pandemic. Webinar was moderated by Dr Indrani Karunasagar who introduced the theme and the speakers.

YouTube-link:

<https://www.youtube.com/watch?v=RKMai5-DVZg>

NITTE NITTE UNIVERSITY CENTRE FOR SCIENCE EDUCATION & RESEARCH
Interferons and cytokines in viral diseases and implications for Covid-19

Date: 22-09-2020
 Time: 10:00 AM to 11:30 AM

Opening Remarks by
 Prof. Dr. Harsha Halahalli
 Director (Curriculum Development)
 Nitte (Deemed to be University)

Moderators
 Dr. Iddya Karunasagar, Senior Director (IR), Nitte DU
 Dr. Indrani Karunasagar, Director (R & D), Nitte DU

Themes:
 • Interferons and cytokines in viral diseases
 • Cytokine immune response in Covid-19

Registration link: <https://form.jotform.com/202592648142458>

The emergence and the spread of Covid-19 has led to an unprecedented situation around the world. Research on strategies to accelerate diagnosis, vaccines and therapeutics for this novel coronavirus is the need of the hour. In this context a webinar on “**Interferon’s and cytokines in viral diseases and implications for COVID-19**” was conducted on September 22, 2020, to understand the challenges associated with research on this novel virus and to get an insight on the latest developments related to Covid-19 research. The webinar was moderated by Dr Iddya Karunasagar, Senior Director (International Relations), Nitte (Deemed to be University) and Dr Indrani Karunasagar, Director (R & D), Nitte (Deemed to be University). Dr Indrani Karunasagar explained the relevance of the present webinar topic. The opening remarks were delivered by Dr Harsha Halahalli, Curriculum Director & Professor of physiology, Nitte (Deemed to be University) wherein he described the research activities of the University and gave a glimpse of the complex response of cytokine in viral infections, being an astute researcher himself. The invited speaker, Dr Ram Savan, Associate Professor, Department of Immunology, University of Washington, gave a preview of basic immunology and its evolution over the period of time followed by detailed lecture on the implications of single nucleotide polymorphism (SNP) in response to viral infection. He revealed the research data findings that showed the SNP located in interferon in case of Hepatitis C virus, and how they affected the disease outcome. The webinar concluded with the remarks that DNA is constantly evolving along with the pathogens and any nucleotide change in the DNA can affect the outcome of a particular disease.

YouTube-link

<https://www.youtube.com/watch?v=wqumlNTWCS4>

July 24, 2020

“Research requirements of Food Industry”

Aug 24, 2020

“Medical device requirements for clinicians”

Sept 22, 2020

“Interferon’s and cytokines in viral diseases and implications for COVID-19”

NU-TEC FOR SOCIETAL CAUSES

Padmashree Tutorials and Brainobrain Badiadka
organizes

LIVE WEBINAR
on the occasion of

World Environment Day

ವಿಷಯ: ನಾವು ಮತ್ತು ನಮ್ಮ ಪರಿಸರ

JUNE 05, 2020; 4.30 PM

Resource Person

Dr. Smitha Hegde
Professor and Leading Plant Biotechnologist
NUCSEER, Nitte (Deemed to be University)
Mangaluru

SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
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7 Days - Faculty Development Programme on
Small Molecules - Strategies and Sophistication
Date: 03rd - 09th August 2020

Col. Dr. Jeppiaar Research Park
Centre for Ocean Research

Ministry of Earth Sciences (MoES)
Earth Science and Technology Cell (ESTC)

SPEAKERS

 Dr. Anbarasu Karthikaichamy Stony Brook University New York, USA Date: 03 August 2020 Time: 18:30 (IST)	 Dr. Shalini Tanwar National Institutes of Health Maryland, USA Date: 04 August 2020 Time: 18:30 (IST)
 Dr. Dinesh Kumar Centre of Biomedical Research (CBMR) Lucknow, INDIA Date: 05 August 2020 Time: 18:30 (IST)	 Dr. Krishna Kumar Ballamoole NITTE University Centre for Science Education & Research Mangalore, INDIA Date: 06 August 2020 Time: 18:30 (IST)
 Dr. Krishna Mohan Poluri Indian Institute of Technology Roorkee Roorkee, INDIA Date: 07 August 2020 Time: 18:30 (IST)	 Dr. Balaji Ramachandran McGill University Quebec, CANADA Date: 08 August 2020 Time: 18:30 (IST)
 Dr. Adithya Jhajharia University of Maryland School of Medicine Maryland, USA Date: 09 August 2020 Time: 18:30 (IST)	

PATRONS
Dr. Mariazeena Johnson, Chancellor
Dr. Marie Johnson, President
Dr. T. Sasipraba, Vice-Chancellor

NATIONAL WEBINAR
ON
ADVANCES IN FISH VACCINES AND PROPHYLACTICS
Organised by
Department of Fish Pathology and Health Management
Fisheries College and Research Institute, Thoothukudi – 628 008
Tamil Nadu Dr. J. Jayalithaa Fisheries University (TNFU)

Date: 30.09.2020 Time: 10.00 AM to 1.00 PM Online platform: Google meet

 Dr. Indrani Karunasagar Director (R&D), Director, ICRD/Research Center for Biotechnology Data, Biological Sciences NITTE 2009, Mangalore Keynote address - Fish vaccination with special reference to <i>Aeromonas hydrophila</i>	 Dr. Krishnan Sankaran Professor of Immunology, National Networking Consultant - NHRID, Chennai Bacterial lipid modification as new and novel protein engineering tool for enhancing vaccine efficacy
 Dr. K. Riji John Dean (Fisheries), ICAR, Cochin Innovations in viral vaccines for fish	 Dr. Megha K. Bedekar Principal Scientist, ICAR, Cochin DNA vaccination in fish with special reference to <i>Edwardsiella ictaluri</i>

Patron : Dr. G. Sugumar, Vice - Chancellor, TNFU
Convener : Dr. B. Sundaramoorthi, Dean, FCRI
Organising Secretary : Dr. M. Rosalind George, Professor and Head, DFFPH, FCRI

Department Of Medical Biotechnology
MGM School Of Biomedical Sciences, Navi Mumbai
A constituent unit of
MGM INSTITUTE OF HEALTH SCIENCES

International Webinar on
Zebrafish: An Emerging Model in Research
17th September 2020

THE PATRONS

 Dr. Shashank Dalvi Hon'ble Vice Chancellor, MGMHS	 Dr. Nitin N Kadam Hon'ble Pro Vice Chancellor, MGMHS	 Dr. Mansee Thakur Director, MGMHSBS MGMHS
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MEET THE SPEAKERS

 01 Dr. Anrban Chakraborty Professor and Deputy Director, NUCSEER, Mangalore Modelling Rare Genetic Disorders in Zebrafish 2.2.45pm	 02 Dr. Chetan Sachidanandan Assoc Professor & Principal Scientist CSIR-IGIB, New Delhi The lean fat Indian fish: a zebrafish model for fatty liver disease reveals new biology 2.45 to 3.30pm
 03 Dr. Patrick Sips Faculty of Medicine & Health Sciences, Department of Biomolecular Medicine, Ghent University Hospital, Belgium Heritable connective tissue disease modelling in zebrafish - from patient to aquarium and back 3.45 to 4.30 pm	

Invited speakers

DR SMITHA HEGDE

Event: 'World Environment Day', organized by Padmashree tutorials and Brainobrain Badiadka, June 05, 2020

Topic: Environmental ethics

DR KRISHNA KUMAR

Event: Online faculty development program on 'Small molecules- Strategies and Sophistication', organized by Col. Dr. Jeppiaar Research Park, Center for Ocean Research in association with Ministry of Earth Sciences- Earth Science Technology Cell (MoES- ESTC), 3-9 August 2020

Topic: Decoding the secrets of microbes

DR IDDYA KARUNASAGAR

Event: 'Shuddha Jala - Swaccha nela', organized by Radio Manipal 90.4FM Community Radio Station sponsored by Govt. of Karnataka (Rural Drinking water and sanitation department), August 16, 2020

Topic: Role of cleanliness and hygiene in fish processing: importance of temperature control with regard to seafood quality



DR INDRANI KARUNASAGAR

Event: 'Shuddha Jala - Swaccha nela', organized by Radio Manipal 90.4FM Community Radio Station sponsored by Govt. of Karnataka (Rural Drinking water and sanitation department), September 16, 2020

Topic: Public awareness amongst the masses regarding water contamination and its health hazards



DR INDRANI KARUNASAGAR

Event: National webinar on 'Advances in fish vaccine and prophylactics', organized by Department of Fish Pathology and Health Management, September 30, 2020

Topic: Fish vaccination with special reference to *Aeromonas hydrophila*

DR ANIRBAN CHAKRABORTY

Event: International webinar on "Zebrafish; An emerging model in research" organized by MGM School of Biomedical Sciences, Navi Mumbai, September 17, 2020

Topic: Modelling rare genetic disorders in Zebrafish

KNOWLEDGE CALLS- UNDERSTANDING PATENTING IN INDIA



“Prior art search is important before making decision on patenting; there is need to understand patenting methods, process, and timelines for processing application”



DST NU-TEC organized a guest lecture as a part of staff development activity on “Understanding patenting in India” on August 19, 2020 at NUCSER. Dr Iddya Karunasagar, emphasised the need to file patent application related to any novel product or process before submitting the manuscript for publication. He explained the Nitte (DU) policy on patenting and the steps involved in filing the patent. He also suggested that a provisional patent application be submitted early in the process of applying for patent which should be confirmed within a year with additional data as proof of the process/product. All the faculty of NUCSER actively participated and discussed several patent related queries after the lecture.

REACHING OUT TO THE INDUSTRIES AND SERVING THEIR NEED

Webinar on

RESEARCH REQUIREMENTS OF FOOD INDUSTRY

Date: July 24, 2020 Time: 11.00 – 12.30

Resource Persons

 Mr. Vishal Hegde <small>Pro-chancellor (Admin)</small>	 Dr. Indrani Karunasagar <small>Director, NUCSER</small>	 Shri Giridhar Prabhu <small>Director, Achal Industries Pvt Ltd</small>	 Dr. Radhika Jagadish <small>R&D Manager, Malyva Beverages and Foods Pvt Ltd</small>	 Shri S. Girish <small>Financial Controller, Megha Fruit Processing Pvt Ltd</small>
 Dr. Pradeep Kenjilage <small>Director, R&D, Cafe Coffee Day</small>	 Dr. Harish Kinilakodi <small>GM, Ace Foods Pvt Ltd</small>	 Dr. U.V. Babu <small>Head R&D, Himalaya Drug Co.</small>		

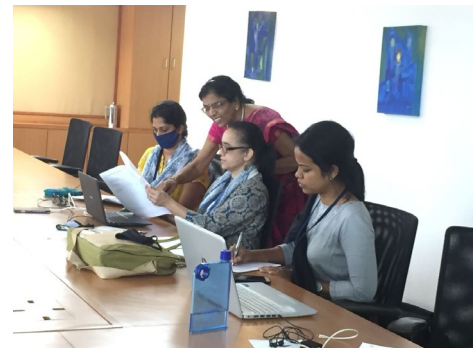
Moderators

 Dr. Iddya Karunasagar <small>SI Director Inlt Rel</small>	 Dr. Smitha Hegde <small>Coordinator DST-NUTEC</small>
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Topics to be discussed

- Activities under DST-NUTEC
- Research needs of food industry
- #Product and process development
- #Tools for supply chain management and traceability
- #Quality and safety
- #Automation and processing machineries
- Service requirements of the industry

Registration form:
<https://form.jotform.com/202023782791454>



Networking the event



Organizers in action

A webinar on “Research requirements of Food Industry” was organized by DST NU-TEC on July 24, 2020. The mandate of the webinar was to understand the R&D needs of the industry and how academic institutions could rise and contribute to address their issues. Key speakers from the food industry were Shri Giridhar Prabhu, Director, Achal Cashew Industries Pvt Ltd, Mr Sanath Kumar, Quality assurance incharge, Unibic Foods Pvt Ltd, Dr Pradeep Kenjilage, Director R&D, Cafe Coffee Day, Dr Harish Kinilakodi, General Manager, Ace Foods Pvt Ltd, and Dr U. V. Babu, Head R & D, Himalaya Drug Co. Prof. Dr. Iddya Karunasagar, Member scientific committee and chair scientific panel on antibiotic residues, FSSAI, GoI, emphasized the importance of food industry for the Indian economy and the changing landscape of consumer requirements for processed, ready to cook and ready to eat foods. Opening remarks was delivered by the Pro-chancellor, Mr. Vishal Hegde, who introduced the participants to Nitte group of institutions, Atal Incubation Center, contd..

Contd...New Age Incubation Center located at Nitte Mahalinga Adyanthaya Memorial Institute of Technology (NMAMIT). He invited the industry to make use of every facility available at Nitte for the larger good of food technology. He assured that all help will be provided by the DST NU-TEC to solve their problems using the research facilities created at Nitte university and the expertise available. Dr Indrani Karunasagar highlighted the importance of research and innovation in the food industry for ensuring food security and nutritional requirements at global level as well as for domestic market. The key speakers elaborated on the research requirements in their respective industries and invited the scientists at TEC to help address their problems.

Highlights of industry opinion

“Simple innovation techniques brings a drastic change in the economy and such ideas should be driven by passion and commitment and can be based on need. The insect beetle, Tribolium castaneum, a common menace in cashew plantation, requires research attention to help the industry solve the issue”

Shri Giridhar Prabhu,
Director Achal Industries Pvt Ltd

“Detection of foreign bodies in products that specially arise from fragile packaging materials like plastics and threads is very much needed. The detection technique currently available focuses on metal detection”

Mr Sanath Kumar
Incharge of quality assurance
Unibic Foods Pvt Ltd

“Lack of certified or accredited lab in Dakshina Kannada to obtain report in real-time basis is a major issue. An NABL accredited lab could help obtain the much needed certification documents for the industry. There is need for internship training for students to enable them to have hands-on exposure and be industry-fit. Research focus could be on nutritional value in packaged food to fall in line with the changing trends in lifestyle and food choice”

Dr Harish Kinilakodi,
General Manager of Ace Foods Pvt Ltd

“There is a need for the development of rapid detection kit for analysis of pesticides, heavy metals, and other such contaminants. The development of digital sensors for sensory evaluation like consistency, aroma and taste, chicory percentage in coffee is urgently required. Production of biodegradable, eco-friendly packaging materials that can withstand various levels of processing is need of the hour”

Dr Pradeep Kenjilage
Director R & D, Cafe Coffee Day

“Change in curriculum is necessary to bridge the gap between resource available in academic institutions and industrial expectations. Involvement of industrialist as visiting professors as well as involving industry to identify research problems and work on them could help in converting lab research into commercially viable product”

Dr U. V. Babu,
Head R & D, Himalya Drug Co

DST –TEC is happy to inform everyone that a beginning has been made. Several industries have been coming forward seeking advice on problem solving, testing and export related queries.

DST-Technology Enabling Center
 NITTE Webinar on MEDICAL DEVICE REQUIREMENTS FOR CLINICIANS

RESOURCE PERSONS

Dr. Sathesh Kumar Chandrayan
 Vice Chancellor
 NHE DU

Dr. M.S. Vaidyanathan
 National Research Professor
 Manipal

Dr. B. Sanjeev Rai
 Father Muller Medical College
 Mangalore

Dr. M. Chakrapani
 Kasturba Medical College
 Mangalore

Dr. Meghna Mukund
 Yenepoya Medical College
 Mangalore

Dr. M.D. Jaidev
 Father Muller Medical College
 Mangalore

Dr. Anil Bhat
 Kasturba Medical College
 Manipal

Dr. Ramaprakash
 Kanachur Medical College
 Mangalore

Dr. Sripada Mehandale
 K S Hegde Medical Academy
 Mangalore

Prof. Sushakti Veluri
 Aeronautical
 Development agency
 DRDO, Bangalore

MODERATORS

Dr. Iddya Karunasagar
 Sr Director Intl. Rel

Dr. Smilha Hegde
 Coordinator DST-NUTEc

REGISTRATION
<https://form.jotform.com/202241570544445>

AUGUST
 20, 2020 @ 14.00 - 16.00

The Atmanirbhar scheme of the government prompted the DST NU-TEC to organize a webinar on “**Medical device requirements for clinicians**” on August 20, 2020. The objective of the webinar was to have first hand knowledge of the requirement of medical devices for further development and commercialization of technologies. As a first step the DST NU-TEC brought together academicians and clinicians on a single platform to have the needs spelt out. Medical professionals from various institutions invited for the webinar included Dr B Sanjeev Rai, Father Muller’s Medical College, Dr M Chakrapani, Kasturba Medical College, Mangaluru, Dr Meghna Mukund, Yenepoya Medical College, Dr Anil Bhat, Kasturba Medical College, Manipal, Dr M.D Jaidev, Father Muller Medical College, Dr Ramaprakash, Kanachur Medical College and Dr Sripada Mehandale, K S Hegde Medical Academy. The need for this webinar was explained by Dr Iddya Karunasagar, Advisor, who stressed the importance of research in developing medical devices for improved health care delivery that would become affordable without the quality being compromised.

WISHLIST OF CLINICIANS



“There is a need for the development of paper strip for urine analysis, assessing liver function, spot test for analyzing nasal swab to detect covid-19, microfluidic devices for the infectious disease, chip based microfluidic device for the detection of lithium, wristband for real time detection of glucose, sodium, chloride etc. Sweat monitoring patch for sweat rate, chloride and temperature, handheld optical tomography (OCT), LED based fluorescence microscope, innovation in the field of nano-materials, nano-medicine, nano-fibers theranostics, micro-nano electronic devices, biosensors, micro-needles and smart phone assisted device prediction model with artificial intelligence for a rapid progress in the field of medicine”

**Dr B Sanjeev Rai,
 Father Muller Medical College**



“There should be a collaboration between the health care officials and the technical stream for the identification of various health care needs. A fusion of e-stethoscope, pulse-oximeter, BP, ECG, Infrared thermometer, glucometer would be a great all-in-one doctors instrument. Non-invasive glucose measurement system, thermal mapping and correlation with diseases, artificial intelligence and body signals to develop instruments in context with disease identification such as JVP, PFT and phonocardiogram, slide scanners with digital scanning, simple continuous EEG monitoring, mobile device including infrared thermometer, logistics in the area of patient transport, patient management system tablet identification, remote monitoring patient safety issues, imaging through Ryles tube, lensless microscope, quick digital scanning sharper ECG using fine small needle electrode, nano-drop sampling are few areas that requires research attention”

**Dr M Chakrapani
 Kasturba Medical College**



“There is a need for cost effective nasal prongs and tubing’s for heated humidified high flow, adrenaline auto injectors, development of model to accurately predict acute attack of asthma using analytical/physiological factors integrated with machine learning algorithms.”

**Dr M D Jaidev
 Father Muller Medical College**

WISHLIST OF CLINICIANS



“Medical innovation is required in the field of tissue culture, plastic surgery, 3D bio-printing, 3D organ development, microfluidics, nano biotechnology, recombinant therapeutics, API formulations, fabrication devices, low cost glucose monitoring and GI cancer detection system, precision medicine, medical robotics, advances in sensors, orthopedic devices such as 3D printed implants/prosthesis, low cost phono-cardiograph, tracheostomy tubes, affordable smart walker, body scanner, gait analysis lab, industrial machining tools, polymer casting, vacuum molding”

Dr Anil Bhat,
Kasturba Medical College



“There is a need for having simplified yet protective PPE to prevent fogging and heat generation in PPE, assistance to cannulate the vein in infants, automation in patient transfer facility, device to monitor the oxygen delivery, diaper to recognize wetting and bed sore, device to diagnose sleep apnea, device for chest physiotherapy, distance sensor to increase the accuracy of thermo-scanners, digital radiography, no contact stethoscope, positioning device in OT to perform oronasal surgery and a cost effective micro-debrider”

Dr Sripada Mehandale,
K S Hegde Medical Academy



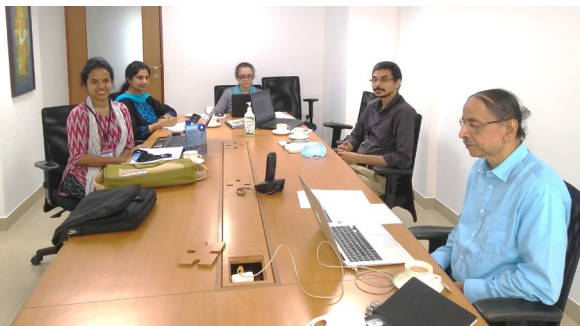
“ There is a requirement of wheel chair with voice enabled RFID device for opening locked doors, osteoporotic assisted device, C arm capable of taking views of both antero-posterior and lateral shots without having to move C arm position. Devices such as spectacle with coring gorilla glass, sensors on the spectacles which will prompt the patient about topography of the surrounding, slit lamp supported on drone for the ophthalmological examination, user friendly affordable light weight digital device to monitor eye pressure, simulation device with good haptic feedback for cataract surgery, use of artificial intelligence to examine retina, wireless hassle free multi parameter monitor for operation theatres and ICUs, robotic assisted physiotherapy, swivel chair and accessories in ambulance to transport the patients with breathlessness, caulking gun with autologous for fat transplantation and bar code with audio prompt on medicine vials to minimize human errors are few requirements the clinicians are looking forward to.”

Dr Meghna Mukund,
Yenepoya Medical College



“Making technology available to rural area in low resource setting and having tele ICU facility and smart clinics is as important as developing new techniques. Few basic mandatory devices required are wireless vital sign patch monitors, wearable electrocardiogram patches, AED, pulse-oximeter, oxygen concentrator, home BIPAP, dialysis machines, CT scan, self-testing (GRBS), ECG/USG machine, plates and screws, bone wires, orthopedic implants in the remote areas at low cost. There is also a need for having artificial intelligence medical device to screen diabetic retinopathy, ambulatory glucose profile, triage tool for the radiology image, human-AI interaction in robotic surgery, health information registry and trauma registry”

Dr Ramaprakash
Kanachur Medical College



***“Coming together is the beginning,
 keeping together is progress, working
 together is success.”***

— Henry Ford

OUR INDUSTRY PARTNERS/CLIENTS/COLLABORATORS

- ✓ Tata Coffee Ltd. Kodagu
- ✓ Gadre Marine Export Pvt. Ltd. Ratnagiri
- ✓ AquaAgri Processing Pvt. Ltd. Delhi
- ✓ CAMPCO, Puttur
- ✓ Salem Microbes Pvt. Ltd. Salem
- ✓ Karnataka Milk Federation Ltd. Kulshekar
- ✓ Aquatic biosystems , Vamanjoor
- ✓ Blue sea aqua, Diu Daman
- ✓ Mangalore biotech lab, Mangaluru
- ✓ Kanara chamber of commerce and industry, Mangaluru
- ✓ Aquaponics, Kodagu, Bengaluru

OUR ACADEMIC / WEBINAR PARTNERS

- ✓ NMAMIT-Nitte Mahalinga Adyanthaya Memorial Institute of Technology, Nitte
- ✓ NMIT-Nitte Meenakshi Institute of Technology
- ✓ St. Josephs Engineering College, Vamanjoor
- ✓ Canara Engineering College, Benjana Padavu
- ✓ Father Muller Medical College, Kankanady
- ✓ St. Aloysius College, Mangaluru
- ✓ University College, Mangaluru
- ✓ Yenepoya Medical College, Deralakatte
- ✓ National Institute of Technology Karnataka (NITK), Surathkal
- ✓ Kasturba Medical College, Mangaluru
- ✓ Kasturba Medical College, Manipal
- ✓ Kanachur Medical College, Deralakatte

CONSTITUENT COLLEGES/ RESEARCH CENTRES OF NITTE, DU

- ✓ NUCSER-Center for Science Education and Research
- ✓ K S Hegde Medical Academy
- ✓ A.B. Shetty Memorial Institute of Dental Sciences
- ✓ Nitte Usha Institute of Nursing Sciences
- ✓ Nitte Gulabi Shetty Memorial Institute of Pharmaceutical Sciences
- ✓ Nitte Institute of Physiotherapy
- ✓ Nitte Institute of Architecture
- ✓ Nitte Institute of Communication
- ✓ CRLK-Central Research Lab KSHEMA
- ✓ CFANR -Center for Advanced Neurological Research
- ✓ LNCSNR-Leela Narayan Shetty Centre for Neurosciences and Research
- ✓ LNCCCR-Leela Narayan Shetty Centre for Cancer Research
- ✓ NUCARE-Center for Animal Research and Experimentation
- ✓ NUCSReM-Center for Stem Cell Research & Regenerative Medicine

INCUBATION CENTRES

- ✓ AIC-Atal Incubation Centre, Nitte
- ✓ NAIN-New Age Incubation Network, NMAMIT

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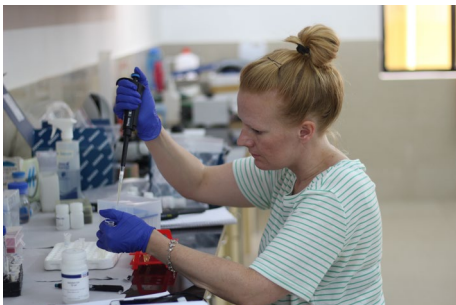
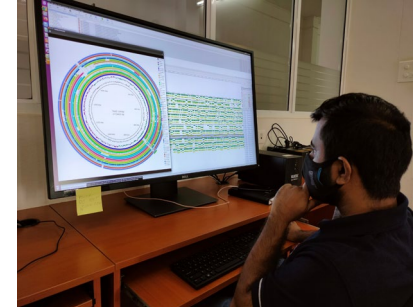
Mr Deepak Pinto

Technical assistant



CONSULTANCY AND SERVICES PROVIDED

- Internship and Training
- Interdisciplinary project development-Medical device development
- Industry collaboration
- R & D services and project development
- Microbiological, biochemical and toxicological analysis of food, feed ,water and soil
- Analysis of fish and shellfish for pathogens and toxins
- Patent and IP support



RESEARCH LABS AT NUCSER

- Advanced Microbiology
- Biochemistry and Biotechnology
- Molecular Biology and rDNA Technology
- Ecotoxicology
- Nanotechnology
- Cell Culture and Virology
- Food Safety and Nutrition
- Cancer Biology and Genetics Plant Tissue Culture
- Proteomics
- Bioinformatics
- Biotech Training
- Phage Research
- Real-Time and Droplet Digital PCR
- Zebrafish facility
- Drosophila Facility
- Wet Lab

Research equipment available at Nitte (DU): <https://nuresdir.wordpress.com/>

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Vice-Chancellor



Prof. Dr M.S. Moodithaya
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