

# विद्ययां तन्त्राग्यां अनुवादान

**DEPARTMENT OF SCIENCE AND TECHNOLOGY**  
**NITTE UNIVERSITY TECHNOLOGY ENABLING CENTRE**



## DST NU-TEC Chronicle | February 2023 to May 2023

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# Product launch and press release-Betel leaf tea

14 April 2023



Nitte University DST Technology Enabling Center (DST TEC) was approached by a young entrepreneur, Mr. Sandeep Eshanya, who had a great fascination for betel leaves, having watched the betel leaf grow extensively in his native and wanted to do something to improve the utilization of this valuable resource. DST TEC encouraged and supported him by initiating the study with Dr. Mamatha B.S, faculty at Nitte University Center for Science Education and Research to work on this. With her background in food technology, in discussion with Eshanya, she developed a process for making “Betel Leaf Tea” using betel leaves. Nitte University DST Technology Enabling Center extended all support at every stage to develop a product that could be delivered to customers as “betel leaf tea bags”. The process of preparing tea bags from betel leaves without losing nutrients, medicinal properties and in original flavor or incorporating different flavors had to be standardized through extensive laboratory studies and consumer acceptance trials. The process has been protected by a shared patent. Nitte University authorized M/S Eshanya Beverages, a Startup to commercialize the technology through an agreement. M/S Eshanya Beverages incubated at the M.S. Ramaiah Institute incubator and the product is now ready for release to the market.



Nitte University is happy to see that the research work done at the University has led to a commercial product that can reach consumers in India and overseas through a Startup, M/S Eshanya Beverages. Nitte University has developed and is implementing a Startup Policy to encourage young entrepreneurs to work with University Faculty to develop and commercialize products. The support of the Technology Enabling Centre of the Department of Science and Technology, Government of India awarded to Nitte University is gratefully acknowledged. There are some other products that are at pilot scale or at market-ready stage and these will be released during National Technology Day celebration at Nitte University on May 11, 2023.

A press meet was organized by DST TEC on 14 April 2023 to formally release the Betel tea to the market. Dr Iddya Karunasagar introduced the TEC and its role in translational research. He briefly explained how TEC helped the process of product commercialization. Hon'ble VC Prof. Dr Satheesh Kumar Bhandary outlined the startup policy of the University and how it is helping the young entrepreneurs and researchers to translate the technology developed. Prof. M S Moodithaya, Pro VC explained the cultural importance and nutritional benefits of betel leaf. He congratulated the TEC team for enabling and developing the betel leaf tea. Mr Sandeep Eshanya shared his journey from a dream to become a startup. Dr Mamatha explained the research process involved in the production of betel leaf tea. The product was standardized to ensure that no nutrients were lost during the processing and incorporation of the different flavors to be acceptable by the consumers through organoleptic evaluation. The process has been protected by a shared published patent by Nitte University and Mr Sandeep Eshanya. The betel leaf tea in four flavors- natural, lemon, orange and rose petals was officially launched during the programme. The product is now available in retail market in Mysuru, Bengaluru and Mumbai. Consumers also can buy this online.



*"I had come across an article on how betel leaf is neglected in spite of it being grown in over five lakh acres of land across India. Having noticed betel leaf being grown extensively in my native Mysuru, I wanted to prepare a beverage as an alternative to tea leaves to improve the utilization of this valuable resource. After I shared my idea with TEC Nitte (DU), they helped me to develop a process for it with the help of Dr Mamatha, food technologist at NUCSER. For the production of betel leaf tea. I used two varieties of leaves from Mysuru as they have a mild natural flavor. The product is now delivered to customers as betel leaf tea bags and the samples have been sent to 10 countries, including US, UK, Australia Japan Canada. I am happy to share the news that there is good response."*



## ವಿನೂತನ ವೀಳ್ಯದಲೆ ಚಹಾ ಆವಿಷ್ಕಾರ, ಮಾರುಕಟ್ಟೆಗೆ ಬಿಡುಗಡೆ

ಮೈಸೂರಿನ ಯುವ ಉದ್ಯಮಿಯ ಪರಿಶ್ರಮ, ನಿಟ್ಟಿ ವಿಶ್ವವಿದ್ಯಾಲಯ ತಂತ್ರಜ್ಞರ ಮಾರ್ಗದರ್ಶನದಡಿ ಅಭಿವೃದ್ಧಿ

- ಕೆಲವೇ ವರ್ಷಗಳಲ್ಲಿ** ಮುಂಗಡವಾಗಿ ಉದ್ಯಮಿ ಸಾಧಿಸಿರುವುದು, ಮೈಸೂರು ಮತ್ತು ಬೆಂಗಳೂರುಗಳಲ್ಲಿ ಮಾರುಕಟ್ಟೆಗೆ ಬಿಡುಗಡೆ ಮಾಡುವುದು. ಇದರ ಜೊತೆಗೆ ಮೈಸೂರು ಮತ್ತು ಬೆಂಗಳೂರುಗಳಲ್ಲಿ ಮಾರುಕಟ್ಟೆಗೆ ಬಿಡುಗಡೆ ಮಾಡುವುದು. ಇದರ ಜೊತೆಗೆ ಮೈಸೂರು ಮತ್ತು ಬೆಂಗಳೂರುಗಳಲ್ಲಿ ಮಾರುಕಟ್ಟೆಗೆ ಬಿಡುಗಡೆ ಮಾಡುವುದು.

ಇದರ ಜೊತೆಗೆ ಮೈಸೂರು ಮತ್ತು ಬೆಂಗಳೂರುಗಳಲ್ಲಿ ಮಾರುಕಟ್ಟೆಗೆ ಬಿಡುಗಡೆ ಮಾಡುವುದು. ಇದರ ಜೊತೆಗೆ ಮೈಸೂರು ಮತ್ತು ಬೆಂಗಳೂರುಗಳಲ್ಲಿ ಮಾರುಕಟ್ಟೆಗೆ ಬಿಡುಗಡೆ ಮಾಡುವುದು.

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Department of Science & Technology  
DST Technology Enabling Centre



**NITTE**  
(Deemed to be University)



INSTITUTION'S  
INNOVATION  
COUNCIL  
(Ministry of HRD, India)

**Ideation drive for Innovation in Biomedical Sciences-2023**

The main goal of ideation is to spark innovation. We invite ideas that could lead to novel solutions to problems in different sectors like health, dentistry, agriculture, food and environment.

**Eligibility Criteria**

- Graduate/Postgraduate/PhD Scholars from Medical, Dental, Nursing, Allied Health and Engineering Institutions
- Teaching and non-teaching faculty, scientists, working professionals and aspiring entrepreneurs
- The participants can apply as a team or as an individual
- The participants applying as a team should identify one member as their team leader
- The team leader should be the main/primary applicant



Register an idea; Scan me

**Target Domains**

Healthcare including medical devices, oral health, diagnostics, therapeutics, nutrition, drug-discovery, development of vaccines, Maternal & Child Health (MCH) and infectious diseases including Covid-19, rare and neglected diseases, patient care and safety; Digital Health including AI & ML, imaging, wearables, healthcare IT and other related sub domains; Agriculture & food-technology; Water, Environment & Sanitation; Solid waste & bio waste management

**Process**

Phase 1: Ideas are received and evaluated for novelty and achievability  
 Phase 2: 25 selected ideas will be discussed with peers from the domain to develop possible solutions  
 Phase 3: Multidisciplinary teams for addressing the problems and possible solutions will be developed  
 Phase 4: The problems with solutions found will be reviewed by the experts and best 5 teams will be mentored for incubation and business development

Submission of Ideas and Problems, Modality of submission can be accessed at the DST NU-TEC website – www.dstnutec.in

Proposals of ideas can be submitted in document (pdf), poster (jpg/jpeg/pppt) or Video (mp4) format not exceeding 5 min (100 MB)

**Submission deadline:**  
19 February 2023

**Screening and announcement of shortlisted ideas:**  
10 March 2023

**Program Co-ordinators**

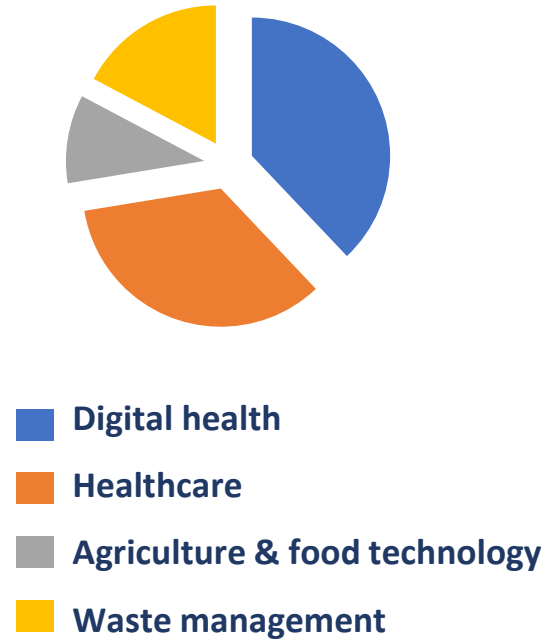
Prof. Dr Iddya Karunasagar Advisor- Research & Patents DST NU-TEC Nitte (Deemed to be University) Mangaluru	Prof. Dr Srinikethan President- IIC Nitte (Deemed to be University) Mangaluru
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**Awards**

- Prize for selected ideas
- Mentorship support
- Boot camp training (priority in AIC, Nitte)
- Start-up grant support from University/ Angel Investors/ AIC, Nitte- Based on further scrutiny & selections

All the proposed ideas should have originality, Terms and Conditions apply\*

# Ideation drive -2023



Ideation drive innovation in Biomedical Science was conducted between 19 Feb 2023 to 10 March 2023 to spark innovation in the area of digital health, healthcare, agriculture & food technology and waste management. A total of 29 proposals were received under various categories from various institutions of the state; Garden City University, Bengaluru, NMAMIT, Nitte, Yenepoya Institute of Technology, Mangaluru, Justice K S Hegde Institute of Management, Nitte, Manipal College of Dental Sciences, Manipal, A.B. Shetty Memorial Institute of Dental Sciences, Nitte University Centre for Science Education & Research, SASTRA Deemed University, Nitte Usha Institute of Nursing Sciences, NGSM Institute of Pharmaceutical Sciences, Nitte Institute of Physiotherapy & SDM Research Institute for Biomedical Sciences (SDMRIBS). Evaluation was done based on novelty, translational feasibility, application, differentiation from existing technology by the experts in the respective field. Winners of ideation drive were selected to participate in medical hackathon conducted on 5-7 May 2023 to provide mentorship and support entrepreneurship.

## Patents published for the period (Feb to May)

Patent Number	Inventor	Institute	Title
202241036257	Mr. Pradyumna G R et al	NMAMIT	Urine Bag with remote output control ability
202241036258	Mr. Anoopkrishna Rai et al	NUCSER	Novel primers for nested polymerase chain reaction based detection of malarial parasites
202241021411	Dr. Rakshith Hegde	ABSMIDS	Two in one instrument for Indirect sinus lift and friction fit crown seating
202241021412	Dr. Aditya Shetty Dr. Mithra Hegde	ABSMIDS	Dental Occlusion Reproducing Tray (ORT) to reduce high points
202341027302	Ms Gillaine Vail Pinto et al	NUCSER	Detection of circulating MicroRNA as biomarkers in the diagnosis of Leptospirosis
202241022642	Priyanka Ashwath et al	NUCSER	Antisense construct against AcrAB Efflux system to combat multidrug resistance in Klebsiella pneumoniae

# NITTE HEALTHCARE INNOVATION HACKATHON



06 May 2023

Nitte (DU) DST TEC, in association with IIC and Atal Incubation Centre, Nitte organized a 3-day 'Health Care Innovation Hackathon' between 5-7 May 2023 to provide a platform for students, researchers, healthcare Professionals, & start-ups to develop innovative solutions for clinical challenges. The hackathon was conducted under various categories; digital solutions in health care delivery, novel approaches for infection control and patient handling, devices and tools for better health outcomes, diagnostics and tools for early detection of health problems, nutrition and environment for better health. The participants presented their ideas through posters/product demonstrations followed by interaction and networking on 05 May 2023 at AIC Nitte.

The inauguration of the hackathon was held at the Paneer campus on 06 May 2023 with Dr Vishal Rao, Regional Director, HCG hospital, Bengaluru as the chief guest. Dr AP Achar, CEO, Atal Incubation Centre, Nitte, Dr G Sriniketan, Chair, Institution Innovation Council Nitte (DU), Dr Iddya Karunasagar, Advisor TEC graced the occasion. Dr Indrani Karunasagar, Director DST TEC, welcomed the gathering and introduced the guests to the audience. Dr Hardik Pandya, Prof.essor, Indian Institute of Science, Bangalore and Dr Advay Aundhekar, founder of Docsy Doctor and health-tech, were the resource persons for the event. Dr Iddya Karunasagar, explained the significance of hackathon and the need to harness and nurture excellent ideas. Dr Vishal Rao detailed his journey in the development of the prosthetic voice box, an indigenous innovative solution to improve the quality of life of the victims of oral and laryngeal cancer who lost their voice. He motivated the participants to think out of the box to find creative and innovative solutions to problems. Dr Hardik Pandya explained his cutting-edge research in the field of medicine with the use of micro-nano-technology. He discussed on the development of sensor-based medical devices, body fluid Prof.iles to diagnose various clinical conditions, minimally invasive tools, electronic systems in the clinical setting, drug screening, and smart microchips for healthcare. Dr Advay Aundhekar detailed his journey to become a start-up. He advised the participants to believe in their potential and to take their innovative ideas to start-up.



Chief Guest, Dr Vishal Rao  
HCG Hospital, Bengaluru



Dr Hardik Pandya, IISc, Bengaluru



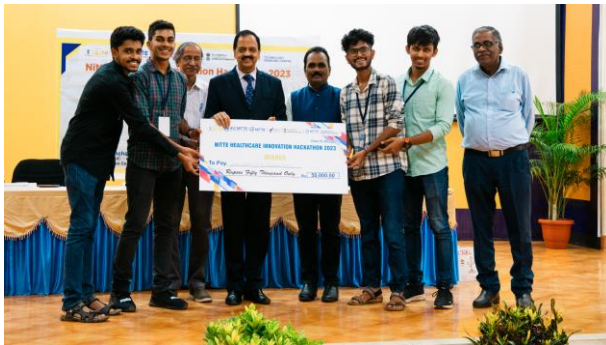
Dr Advay Aundhekar Docsy, Pune

The evaluation of the hackathon was carried out on 07 May 2023. The 1<sup>st</sup> , 2<sup>nd</sup> and 3<sup>rd</sup> winning teams were given a cash prize of ₹50,000, ₹25,000 and ₹15,000 respectively. Ten teams in the order of merit were selected to receive incubation support at AIC with seed money of upto ₹25 lakhs.

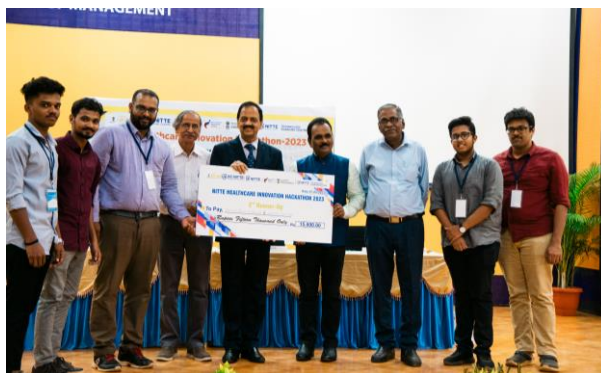
## Winning proposals



**Title: Smart wheelchair for locomotive patients**



**Title: For sight-AI powered smart glasses**



**Title: Virtual reality cycling and instant tea cubes**



# National Technology Day

11 May 2023



The National technology day was celebrated to commemorate the successful Pokhran nuclear tests conducted in 1998. Padmashri Dr S Ayyappan, Former Secretary (DARE) & Director General (ICAR) was the Chief Guest and Dr S K Pattanayak, Former Secretary, Ministry of Agriculture, GOI, was the Guest of Honour. Hon'ble Pro-chancellor Dr Shantharam Shetty & Hon'ble Vice-chancellor Prof. Dr Satheesh Kumar Bhandary, graced the occasion. Dr Indrani Karunasagar, Director DST TEC welcomed the gathering and introduced the guests to the audience. Dr Iddya Karunasagar, Advisor, research and patents emphasized the significance of the day and the need to commemorate the occasion as national technology day.

*Chief Guest, Padma Shri Dr S. Ayyappan, in his message, motivated youngsters to take up research problems that are imperative in solving and mitigating challenges namely, eradicating hunger, disease diagnostics, preventive strategy in managing human-animal-plants inhabiting the planet and studying the environment such as soil, water atmosphere for their climate change impacts. He emphasized that the pandemic of antimicrobial resistance (AMR) looms large, and the designation of Nitte University as one of the three international reference Centre of AMR and aquatic biosecurity is a global recognition for Nitte, Mangalore, to place in the world map as a centre of excellence. With this international recognition, the young researchers of Nitte University have the task of realising their zeal and marching towards translational research for a better society.*



*The Guest of Honour Dr SK Pattanayak, presently appointed by the President of India to the Karnataka Administrative Tribunal, is a towering personality who held several national and international posts. He was the agriculture attaché/ambassador to the FAO, WFO and IFAD. Speaking on the occasion, he said science is the driver of all progress, and it is important to inculcate a scientific temper from a young age. He congratulated the Nitte TEC funded by the DST, GoI, for bridging the gap between academics and industrial requirements, which is the need of the hour. Advancement is required in the field of medical and healthcare sector, diagnostics, irradiation technology and environmental conservation arenas, and he expressed that young minds have tremendous potential and there is a lot of scope in all fields of science for them to explore and venture.*



In his presidential remarks, Prof. Dr Shantaram Shetty, Pro-Chancellor, Nitte DU, gave the candid message that technology is a useful slave but a dangerous master. He urged young scientists to take their innovative ideas to fruition which will result in useful technologies.

Nitte University Technology Enabling Center has been working on creating an ecosystem for the development and commercialization of technologies in areas such as medical devices, biotechnology and food technology. Six such technologies developed at Nitte University have led to spinoff Start-ups or have been licensed to Start-ups. The technology developers and the companies that have taken these technologies were awarded certificates of recognition on the occasion.



**Dr Mamatha BS**, developer of betel leaf technology transferred to **Eshanya Beverages Pvt. Ltd.**



**Dr Biju Thomas, ABSMIDS & Dr Shashintha Karinka**, developers of Periodontal probe that has led to a start-up **Dentronics Pvt. Ltd.**



**Dr Biswajit Maiti**, developer of diagnostic technology for the rapid detection of *Salmonella* taken up by **Biokart India Pvt. Ltd.**



**Mr Vikram, Biokart India Pvt. Ltd.**, took up the technology for the rapid detection of *Salmonella*.



**Dr Juliet Mohanraj**, developer of technology for *Vibrio* phage application to manage vibriosis in aquaculture.



**Mr Anand, Mangalore Biotech Lab** took up the technology for *Vibrio* phage application in aquaculture.



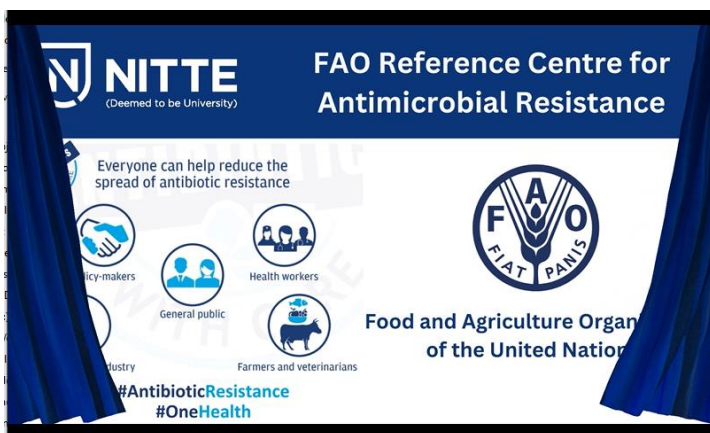


**Dr Krishna Kumar B**, developer of diagnostic kit for the detection of *Vibrio vulnificus*, transferred the technology to Jigsaw Biosolutions Pvt. Ltd.



**Mr Shrinivas Raju and Ms Shwetha Kamath, Jigsaw Biosolutions Pvt. Ltd.** took the technology for rapid detection of *Vibrio vulnificus*.

## Inauguration of FAO Reference Centre for Antimicrobial resistance



Another highlight of National Technology Day was the launching of the FAO Reference Center for Antimicrobial Resistance by Dr S.K. Pattanayak. FAO has designated four institutions globally as FAO Reference Centers for Antimicrobial Resistance and Aquatic Biosecurity. Two in China, one in USA and one in India at Nitte (DU). As a FAO Reference Center, Nitte University will be collaborating with international organisations like Food and Agriculture Organisation (FAO), World Health Organisation (WHO) and World Organisation of Animal Health (WOAH, formerly, OIE). Nitte University will be involved in providing technical support for the work of these international organisations in the area of antimicrobial resistance and its mitigation through implementation of biosecurity. Further Nitte University will be involved in capacity building in the South and South East Asia in AMR and biosecurity. In the 'One Health' era, this recognition assumes great significance.



Visit of dignitaries to DST TEC and discussion about the various activities related to the objectives of the centre



# SEMINAR ON BIOINSPIRATION- LED INNOVATION FROM LAB TO INDUSTRY

**06 Feb 2023**

Bioinspired materials have become essential in promoting innovation and breakthroughs in the modern materials industry. DST Technology Enabling Center has been at the forefront of networking for inter and multidisciplinary translational research projects and creating an ecosystem for transferring technology and entrepreneurship culture. The Institution Innovation Council (IIC) is a portal to establish a functional ecosystem for scouting ideas and pre-incubation of ideas. With this note, DST TEC & IIC organized an interactive seminar on 'Bioinspiration led innovation- from lab to industry' on 06 Feb 2023. Dr Kishore Paknikar, IIT Mumbai, was the keynote speaker of the day. Hon'ble Vice Chancellor Prof. Satheesh Kumar Bhandary, president of the function, explained the range of activities conducted by TEC and IIC to help innovative thinking and conduct research of translational value. Dr Indrani Karunasagar welcomed the gathering and motivated the audience to carry out research of practical value seeking to answer day to day questions and issues that we see around us. Dr Iddya Karunasagar introduced the distinguished guest to the participants and enlightened them on the large number of patents and technologies developed by Dr Paknikar. Several of his technologies have been transferred to industry.

The highly motivating lecture was followed by an interactive session. In all, close to a 100 participants, including staff from various institutes, research scholars UG and PG students actively participated in the discussions. Dr Srinikethan, President IIC delivered the vote of thanks.



*Dr Paknikar gave an overview of his contributions to advances in the field of biohydrometallurgy industry. He explained the process of biomining and bioleaching, whereby metals are extracted from the ores through bacterial oxidation. He discussed various aspects of microbe-associated extraction of minerals & acid drainage etc. He further gave a gist of trending research in bead-type biosorbent technology, electrochemical micro and nano-systems technology and magneto-tactic microorganism. The interdisciplinary nature of his research involving microbiology, chemistry, and nanotechnology motivated the young audience .*



## TEC Conclave 2023



DST organized a two-day TEC-Conclave at the University of Hyderabad on 17th and 18th April 2023. Coordinators from various TECs attended the meeting. Coordinators of TECs sanctioned during phase 1 made presentations on their experience. Coordinators of TECs sanctioned during phase 1 made presentations on their experience. Dr Iddya Karunasagar represented TEC, Nitte University and presented the activities of the centre for the period April 2022 to March 2023. TEC sanctioned during phase II presented their strengths and areas of interest. TEC officials evaluated the activities and suggested the aspects to improve upon. Prof. K. Sankaran, Anna University and Dr. Rajesh Kumar Pathak, Secretary, Technology Development Board, DST, delivered an expert opinion on “Essentials for TECs in enabling TRLs and Technology Transfers”. There were presentations of success stories achieved through activities of TEC. Prof. Dr Vivekanand Kattimani, Dept of Oral and Maxillofacial surgery, SIBAR Institute of Dental Science, Guntur explained the achievements in the area of dental materials. Dr Sachin Mandavgana, Dept of Chemical Engineering, Vishvesvaraya National Institute of Technology Nagpur presented success achieved in producing useful products by recycling waste.

**ST JOSEPH ENGINEERING COLLEGE MANGALURU**  
AN AUTONOMOUS INSTITUTION

Department of Electronics and Communication Engineering  
in association with  
**NUTEC, Nitte University**  
presents

**FDP on Patent and Research Opportunities in India**

OPEN TO ALL SJEC STAFF AND STUDENTS

Wednesday | 29 March 2023 | 10:00 AM to 01:00 PM

**Resource Person**  
Dr Iddya Karunasagar, Senior Director (International Relations), Nitte University

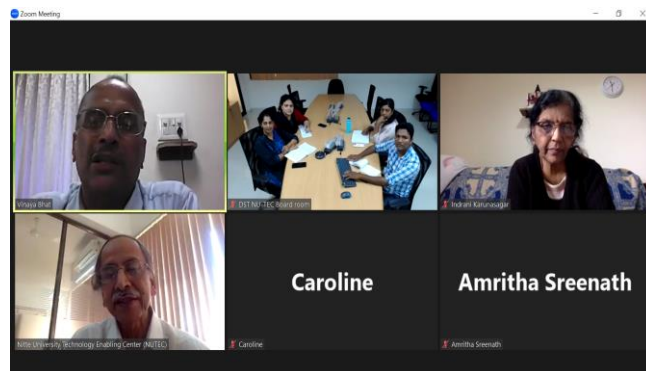
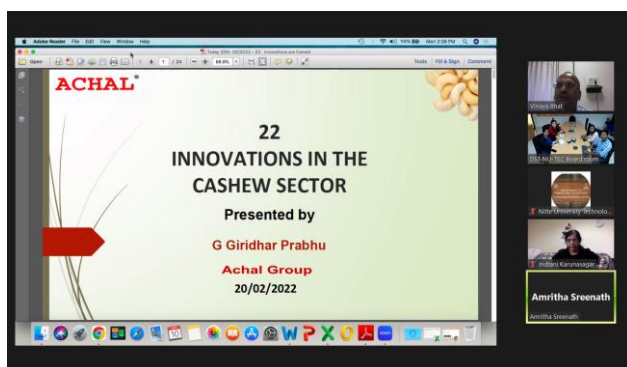
**Coordinators:**  
Dr Dayashini Professor and Head -ECE Dept  
and  
Ms RESHMA K J Asst Professor, Dept of ECE

**Registration Link**  
[bit.ly/Patent-IPR](https://bit.ly/Patent-IPR)

29 March 2023-Dr Iddya Karunasagar, Advisor Research and patent delivered a seminar on ‘Patent and research opportunities in India’ at St Josephs Engineering College.

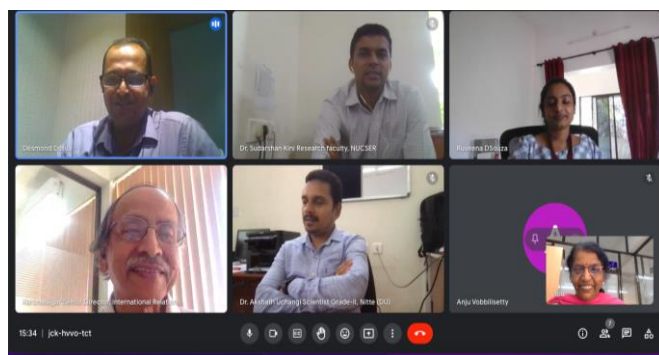


14 April-2023-Dr Iddya Karunasagar, Advisor Research and patent delivered a seminar on ‘Patent and Intellectual Property Right’ at Father Muller Medical College.

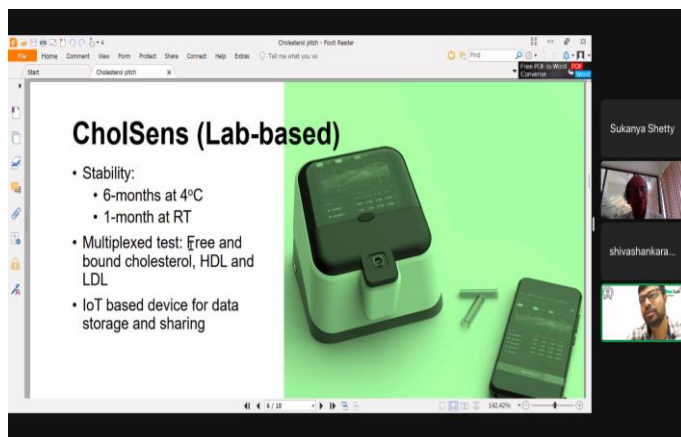


An interactive meeting was conducted with Mr G Giridhar Prabhu, Achal industries, on 11 April 2023 to discuss the possible research innovations in the cashew sector. He presented various problems in the cashew industry, which could be addressed by researchers through project mode. The various issues presented are as follows

- Validation of a moisture meter to estimate the moisture content in cashews
- Product, process, and marketing innovations in the cashew sector
- Development of value-added health products from anacardic acid, an exclusive component derived from cashew shells
- Investigation into the glycaemic index of cashew nuts and nutritional value for diabetic patients
- Process innovation in cashew apple liquor



16 Feb 2023 and 07 March 2023-Discussion with Cynteny Solutions regarding consultancy services and project development on nano-emulsion for cancer therapy



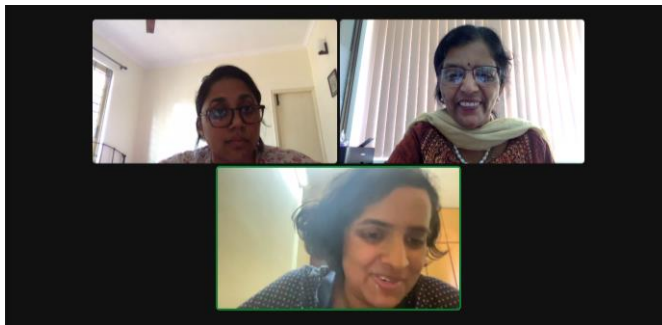
09 Feb 2023-Discussion regarding 'Eat Right' campaign at Nitte University.

13 April 2023-Discussion with the start-up team AUDOsens on the product 'Cholsens' for rapid detection of biochemical Profile of blood at rural settings.

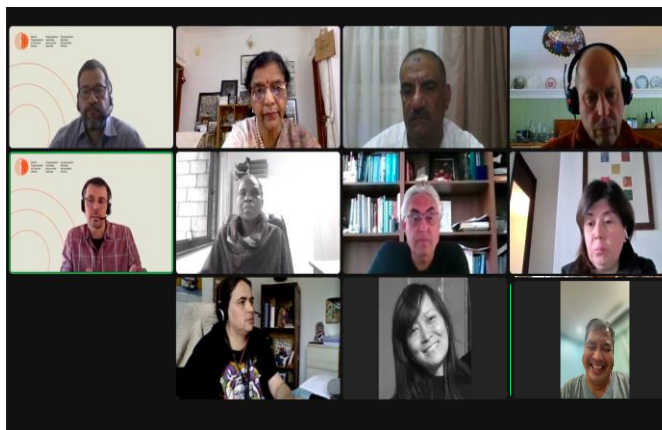
**Market Surveillance : Aggregated Data**

Targeted Category	Total Sample Tested	Sample Positivity For Enteric Pathogen	Escolia colous	EPEC	ETEC	Listeria monocytogenes	Salmoneta	Shigeta	Diphyllosteceus aurum	Vibrio cholerae	Vibrio parahaemolyticus
Cooked Food	3253	118 (3.63%)	19 (0.58%)	0	0	0	8 (0.25%)	3 (0.09%)	88 (2.71%)	0	0
Uncooked Food	1857	98 (5.28%)	4 (0.22%)	4 (0.22%)	4 (0.22%)	2 (0.11%)	23 (1.24%)	7 (0.38%)	33 (1.78%)	18 (0.97%)	3 (0.16%)
Total	5067	216 (4.28%)	23 (0.45%)	4 (0.08%)	4 (0.08%)	2 (0.11%)	31 (0.61%)	10 (0.20%)	121 (2.39%)	18 (0.36%)	3 (0.06%)

15 May 2023: Dr Iddya Karunasagar chairing the ICMR expert group meeting on 'food borne diseases'.



Ms Deepika and Ms Nandita discuss with Dr Indrani Karunasagar on archiving her lifetime contribution towards a project undertaken at NCBS on the life and journey of the senior female scientists.

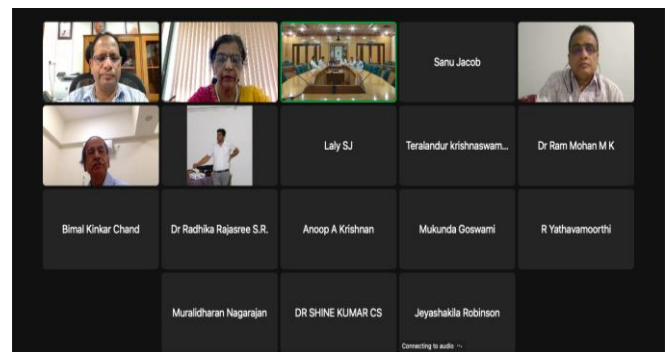


Dr Indrani Karunasagar is nominated member of the World Organization for Animal Health (WOAH, formerly OIE) Electronic Expert Group, to develop guidelines for monitoring antimicrobial use in aquaculture at field level. The first online meeting was held on 03 May 2023. The other EEG members include

- Dr F. Carl Uhland, Canada (Chairperson)
- Prof. Dr Mohamed E. Abou El Atta, Egypt
- Dr Sandrine Baron, France
- Dr Nelly Isyagi, Kenya
- Dr Marcela Lara, Chile
- Dr Dusan Palic, Germany



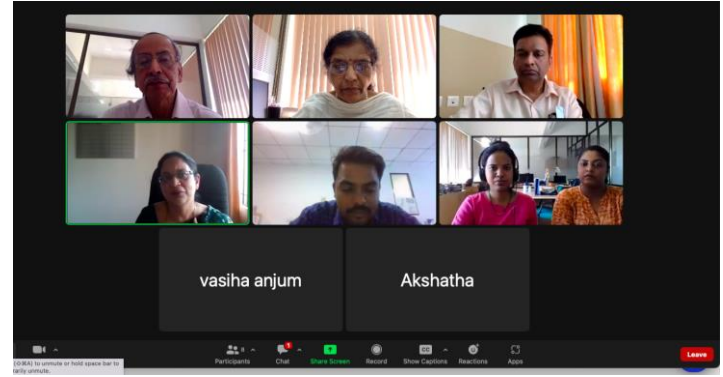
19-27 March 2023 Dr Indrani Karunasagar facilitated the visit of scientists to NORD University as part of Indo-Norway project. The team had discussions with the Norwegian partners.



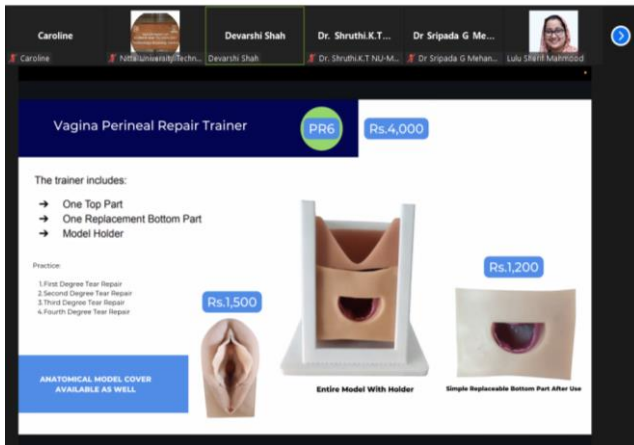
17 May 2023: Dr Karunasagar & Indrani Karunasagar delivered expert talks at the brainstorming on 'Food safety strategies for Indian Fisheries sector organized by the National Academy of Agricultural Sciences, convened by Dr Jeyasekaran, former Director of Research, TNFU.



30 March 2023- Zain and Shiv, NUCSER discuss on an app development for tagging flora for optimum carbon balance and agriculture-based application



09 May 2023- Facilitating validation of an indigenous medical device by a start-up to detect birth asphyxia, a project supported by Nidhiprayas, Jyothy Institute of technology foundation, IKP, Eden & Chitkara University



18 May 2023- Mentoring in association with clinicians a start-up Simotomy, incubating at SINE IIT Mumbai that focusses on developing surgical simulation training products.



03 March 2023- Discussion with entrepreneurs on potential for commercialization of phage based products



06 March 2023- Discussion with Dr B Krishna Prabhu, faculty, Canara Engineering College regarding the ongoing DST project on plastic recycling.



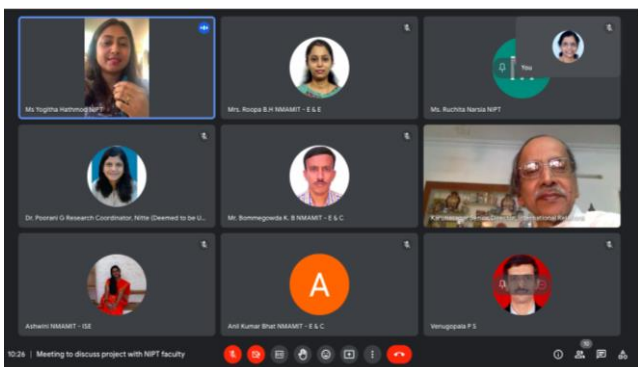
14 March 2023- Discussion with Mr Philip Rwezawula Ghent University Belgium on the PhD project



12 May 2023-Discussion with Mr Rahul Patil, PG student NUCSER to enable a start-up for manufacture of tea cubes.



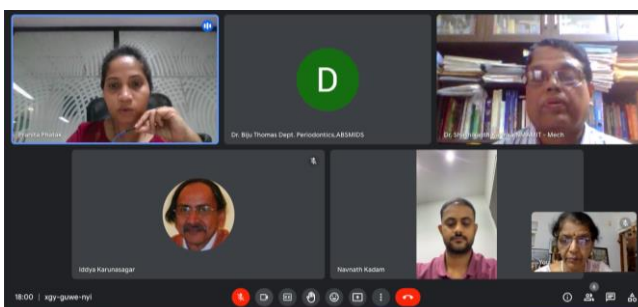
03 March 2023: Connecting Dr Anurag Sharma, NUCSER with Prof. Helga Stopper, Univ of Wuerzburg, Germany, for collaboration.



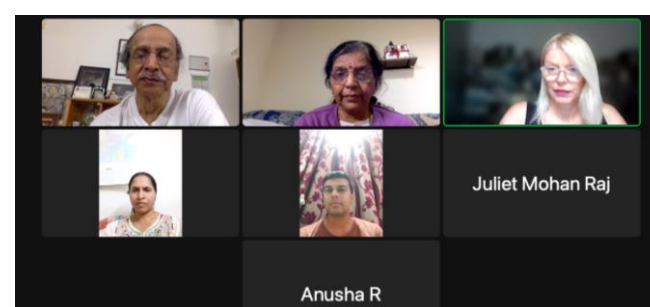
22 Feb 2023: Connecting NIPT and NMAMIT on a project 'development of a smart app device for healthy lifestyle & training elderly people'.



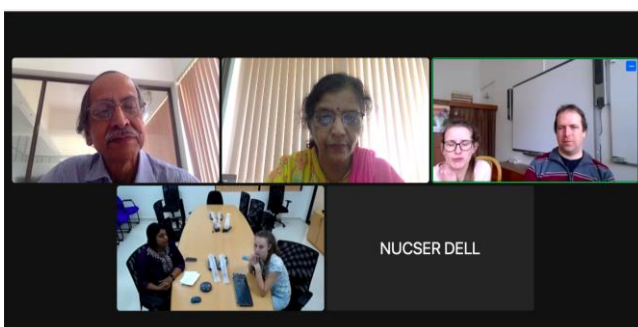
27 April 2023: Meeting of Executive committee, IVS to lay down criteria for candidates to participate in the world virology conference.



28 Feb 2023: Startup connect with SINE IIT Mumbai represented by Dr Pranita and Dr Navnath Kadam regarding regulatory approval for the 'Dentronics' startup.



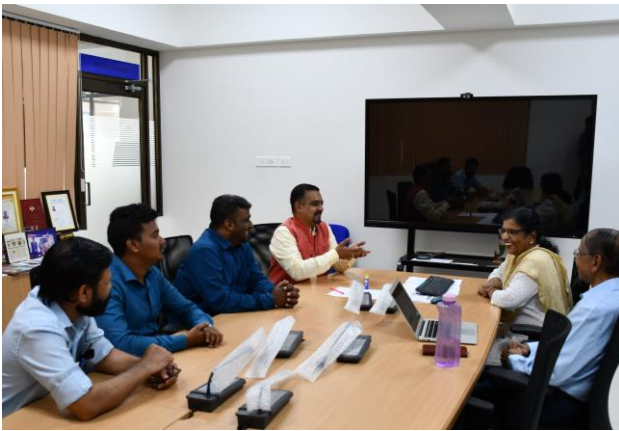
11 March 2023: Discussion on Indo-Argentinian phage technology development project with the PI Dr Alicia Leticia & Co PI, Dr Alejandra Capozzo, Indian PI Dr Juliet, & Co PI's Dr Sudarshan & Dr Anusha Rohit.



14 Feb 2023-Indo Czech collaborative meeting with Dr Vladimir Scholtz and Dr Eva Vankova, University of Chemistry & Technology, Prague and visiting researcher Ms Anna Machkova to discuss use of plasma technology in food industry carried out at NUCSER.



22 Feb 2023- Meeting with Mackwin D'mello Public Health Dept, KSHEMA and Ms Evelina Nystorm, international coordinator, Sahlgrenska Medical Academy on taking forward the collaboration in public health and student exchange.



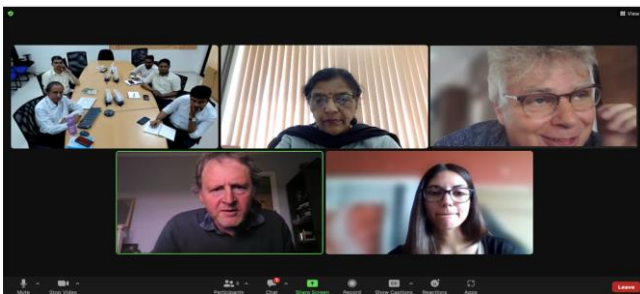
03 May 2023-Dr S Prashanth, Dy Dean JSS Academy of Higher Education and Research visited TEC for discussion on possible collaborative activities for technology development.



22 April 2023- Discussion with Dr Vinod Kumar, Prof.essor, Department of Genetics, University of Groningen, The Netherlands on possible collaborations.



08 March 2023-Discussion with Dr Anupama, ABSMIDS on finalizing the project on "Portable surface Electromyograph for muscle pain detection in dental applications" for the submission of PACE – BIRAC grant



23 May 2023-Initial meeting to discuss Indo-UK collaborative project in the area of 'One Health'.



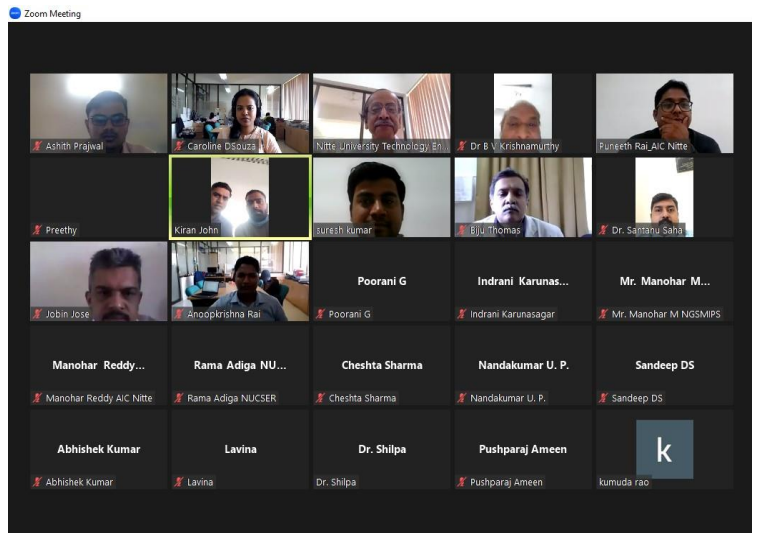
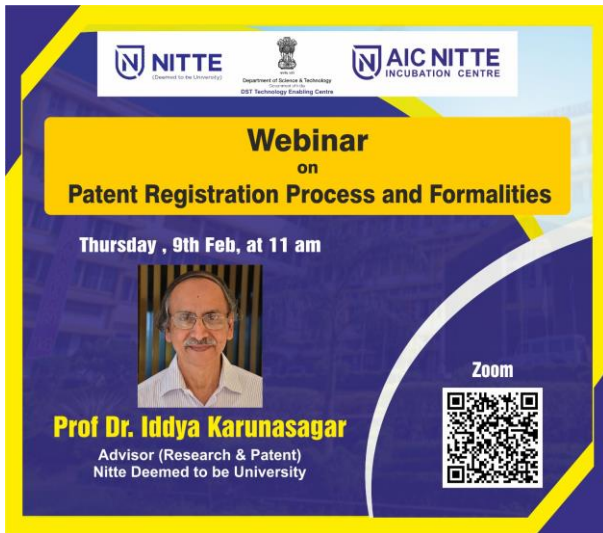
20 Feb 2023-Discussion with faculty of NIPT regarding patent application

**Projects submitted**

Project Topic	Institutions involved	Status of the project
Development of a mobile unit for hygienic handling and processing of fish for door delivery using green energy and sustainable waste utilization	NUCSER	Submitted to BIRAC BIG
Development of identical multi-repeat sequences IMRS based point-of-care diagnostics for early detection of vibriosis to prevent productivity losses	Jigsaw Bio Solutions Pvt Ltd and Biokart Pvt Ltd, Bnagalore	Submitted to PACE



## A SESSION ON “PATENT REGISTRATION PROCESS AND FORMALITIES FOR STARTUPS”



An awareness session on patent registration process was organized for start-ups in association with Atal Incubation Center, Nitte University on 9 Feb, 2023. There were registered start-ups from outstation who desired to participate. Hence, AIC organized an online zoom session. Dr Iddya Karunasagar, Advisor, Research and Patents was the resource person. During the session, he explained about *prior art* search and patentability assessment before starting the process. Information on online tools, both free and subscribed, for *prior art* search was provided to the participants. He explained about filing provisional patent and filing complete specifications within twelve months. The process of filing international patent under the provisions of Patent Cooperation Treaty (PCT) was also detailed. The costs involved in filing patents and special concessions available for start-ups, Micro, Small and Medium Enterprises (MSMEs) were highlighted. The event ended with a Q & A session wherein all the clarifications from startups were addressed by the resource person.



28 Feb 2023-Dr Iddya Karunasagar gave an expert lecture on the topic ‘Import risk analysis’ in a conference organized by Central Institute of Brackishwater Aquaculture (CIBA), Indian Council of Agricultural Research (ICAR).



26-28-April-2023—Dr Iddya Karunasagar delivered workshop on ‘WTO SPS agreement for Myanmar’ for the food industries at the request of International Trade Centre of United Nations.



Dr Iddya Karunasagar delivered a plenary lecture on ‘Food Safety and Quality Issues in Fishery Products – Global/National Perspectives’ and Dr Indrani Karunasagar on ‘Antimicrobial Resistance in Aquatic Environment: Implications/Mitigation Strategies’ at a national conference on 'Fisheries and Aquaculture: An Ecological Perspective' organized by Indian Ecological Society' (IES), Punjab Agricultural University (PAU) in collaboration with Guru Angad Dev Veterinary and Animal Sciences University (GADVASU) at Ludhiana, Punjab from 22 to 24 February, 2023. Both were honoured during the event by the IES.



Dr Iddya Karunasagar was the Chief Guest at the launching of Mueller Medithon – 2023 organized by Fr Muller Medical College on 10 Mach, 2023. Dr Karunasagar spoke about the landscape of medical device discovery to commercialization and explained the concept of design thinking process viz to empathize, define, ideate, make a prototype and test. Support available for moving from ideation to commercialization and the role of DST Technology Enabling Center in this process was highlighted. Experts from Indian Institute of Science, Bangalore and National Institute of Technology, Karnataka participated as resource persons.



Dr. Iddya Karunasagar co-presented with Dr David Werner-Jeffreys, CEFAS, UK a keynote lecture on “Keeping fish healthy” at the Indo-UK workshop on ‘One Health’ organized at Kochi on Feb 20-21, 2023. In his address, he talked about emergence of new diseases, pathogen evolution through horizontal gene exchange, zoonotic pathogens in aquaculture systems, challenges in disease diagnosis and management in aquatic systems and new approaches needed.

## UNESCO LIFE SCIENCE PRIZE – DR. INDRANI KARUNASAGAR , NITTE DU, CHAIR OF INTERNATIONAL JURY ATTENDS UNESCO AWARD CEREMONY AT EQUATORIAL GUINEA, AFRICA



(L-R): Prof. Nchaso Matomba, (Vice Dean, National University of Equatorial Guinea), Dr Almira Ramanaviciene (Laureate Lithuania), Prof. Dr Indrani Karunasagar (Chair, International Jury, India), Prof. Nguema Nchama (Rector, National University of Equatorial Guinea), Dr Mosaad Attia Abdel-Wahhab (Laureate Egypt), Dr Ibrokhim Abdurakhmonov (Laureate Uzbekistan)



(L-R): Mr Anoop, Ambassador, Equatorial New Guinea, Mr Vishal Sharma, Ambassador UNESCO, France, & Dr Indrani Karunasagar at the award ceremony in Malabo.

UNESCO-Equatorial Guinea International Life Science Prize is a very prestigious prize awarded annually to acclaimed scientists globally who have made notable scientific contributions. UNESCO calls for nominations for the award and a distinguished International Jury makes selection of scientists for this award. Dr Indrani Karunasagar, Director, Nitte University has been Member of the five member International Jury since 2014. For the selection of awardees for the year 2022, Dr Indrani Karunasagar, Chair of the International Jury, selected the following scientists for the 2022 UNESCO-Equatorial Guinea International Life Science Prize – Dr Mosaad Attia Abdel-Wahhab from National Research Center, Egypt; Dr Almira Ramanaviciene from Center of Nanotechnology and Material Science, Vilnius University, Lithuania; Dr. Ibrokhim Abdurakhmonov from the Center of Genomics and Bioinformatics, Uzbekistan; Prof. Yigong Shi, President, Westlake University, China.

Prof. Dr Indrani Karunasagar attended the meeting at UNESCO, Paris on the 07 March, 2023 and was joined by UNESCO officials on a chartered flight to Equatorial Guinea on the 8th. She addressed the Equatorial Guinea University students, faculty along with the Laureates on 09 March, 2023. As Chair of the International Jury, Dr Indrani Karunasagar had a pride of place for the grand award ceremony held at Malabo, Equatorial Guinea, on March 10, 2023 which was attended by the President of Equatorial Guinea, Heads of several African States and Ambassadors of several countries including the Indian Ambassador to UNESCO, and the Ambassador to Equatorial Guinea. Each laureate received \$100,000 as prize money for research in life science from the UNESCO.

### Dr Indrani and Dr Iddya Karunasagar ranked among the Top Scientists in India in Microbiology



Dr Indrani Karunasagar and Dr Iddya Karunasagar, have been ranked #11 and #13 respectively by Research.com a leading academic research portal in the field of microbiology. This ranking is based on research publications, citations, and H-index.

Link:

<https://research.com/scientistsrankings/microbiology/in>

<https://research.com/university/nitte-university>

<https://research.com/u/indrani-karunasagar>

<https://research.com/u/iddya-karunasagar>

## New leaderships at Nitte Deemed to be University



**Former Pro Vice Chancellor Prof. Dr M S Moodithaya assumes charge as Vice Chancellor Nitte University from 01 June 2023**



**Prof. Dr Satheesh Kumar Bhandary appointed Vice President, Institutional Social Responsibility & Central Research Lab, KSHEMA**

### Editorial team

**Dr Iddya Karunasagar** *Advisor-Research, Patents & DST TEC*

**Dr Indrani Karunasagar** *Director-Projects & DST TEC*

**Dr Caroline Dsouza** *Senior Project Associate*

**Ms Akshatha K** *Junior Project Associate*

**Mr Anoopkrishna K** *Junior Project Associate*