



विज्ञान एवं  
प्रौद्योगिकी मंत्रालय  
MINISTRY OF  
**SCIENCE AND  
TECHNOLOGY**



## **DST-STUTI Sponsored Hands-on Training Programme**

**On**

**“Innovations in Healthcare Technologies”**

**Dates: 6<sup>th</sup> to 12<sup>th</sup> February, 2023**

**Organized by**

Department of Biomedical Engineering,  
North-Eastern Hill University  
Shillong-793022, Meghalaya, India

**In collaboration with**

Jamia Hamdard University, Delhi

**VENUE**

Seminar Room,  
Department of Biomedical Engineering  
North-Eastern Hill University  
Shillong-793022, Meghalaya, India

## **Aim and Objective: -**

There is a big disconnect between Medical institutions and industries in India. The education in the medical technology field is the backbone of the healthcare ecosystem. Quality is of paramount importance for medical products. Indian industries are currently focusing on affordability, not on quality. For long, India has struggled to provide quality, affordable healthcare to all its citizens. Instead of the conventional route, for disruption and affordable quality, the focus should be on innovation rather than indigenization. For innovation, medical technology education should be strengthened. A certain percent of the industry's income could be spent on R&D activities, as consultancy projects to educational institutes.

India's strength in local traditional medical systems, focusing on wellness, prevention rather than cure, could focus on disruptive innovation. Medical Technology provides a massive opportunity for both the educational institutes and the industry to work synergistically. It can bridge the distance between the caregiver and the patient, thereby helping patients remotely access specialist and specialized equipment present in large cities far away. Technological advancements in health monitoring and diagnostics help detect health issues early on, reducing the overall cost of care and enhancing society's wellness levels. To realize this opportunity, both the educational institutes and the industry need to make concerted efforts. The educational institutes require to streamline the training in a manner that makes graduates ready for the industry. The industry needs to customize its business models to suit Indian markets. Medical device segments that provide sizeable opportunities and require a moderate level of technical expertise should be prioritized for manufacturing in India. Finally, India should embrace the path of innovation in the MedTech industry that makes its products and solutions tailored made for the country's opportunities and constraints. India can be self-reliant in the Medical Technology sector by capitalizing on this Medical Technology revolution and if all stakeholders play their respective roles. In doing so, we stand a good chance of realizing the vision of providing healthcare to all its citizens

The aim of this DST sponsored Synergistic Training Program Utilizing the Scientific and Technological Infrastructure (STUTI) event being jointly organized by the Jamia Hamdard University, Delhi and Department of Biomedical Engineering, NEHU, Shillong, Meghalaya is to bring forth experts from academia, industry, healthcare institutions, different government agencies, medical experts, venture capitalists etc. to deliberate, outline vision and provide roadmap for development of the medical technology sector in the country and how it would help in developing the north east part of the country with its abundant resources and untapped talent to meet the growing needs of the healthcare market in the country. The deliberations would also be on the economic and social impact of the medical device development on the healthcare in the country and the region at large. The scenario as prevalent in the 1970s vis-à-vis the present medical technology scenario would be deliberated upon by chosen experts from the field who have made a lasting impact on the Indian healthcare market. It would be an opportunity for the youngsters to gain experience and learn new insights in the developing the healthcare market.

Selected experts from the healthcare sector such as NEIGHRIMS, NEIAH, CMC, Vellore, SAIF, NEHU etc. would deliberate, outline vision and provide roadmap for the design and development of the medical technology sector for the country. Chosen Experts from IIM Calcutta Innovation Park, AMTZ, Visakhapatnam, IIT, Madras, and PRIME Hub, Government of Meghalaya would be invited to help interns learn about Entrepreneurship and Start-ups through practical problem solving and modern business practices. International industry Experts from Australia and Canada alongwith local entrepreneurs from the region and outside would be deliberating during the event.

### **Participants for the Workshop:-**

The participants (limited to 30 in number) for this DST-STUTI hands-on training programme would be doctoral research scholars, Master's students, young faculty, scientists and researchers working in the field from the Asia Pacific region with atleast 5-10 international participants. The resource persons would be renowned experts, faculty, industry experts, clinicians and researchers working in the field since past several years.

The program would comprise of Invited talks, hands-on sessions, Mini-Symposium with presentation from participants and problem solving through minor projects to problems given by experts. Hand-on training sessions would be held during the STUTI event to provide further interaction and scientific discussions among participants and experts.

No registration fees for attending the program. Selected participants from India would be provided course material, free lodging and boarding as per DST and University norms.

### **Topics to be covered during DST-STUTI programme:-**

- Future of Wellness care in India
- Repetitive Transcranial Magnetic Stimulation
- Neurofeedback and Cognitive enhancement techniques
- Advances in Telemedicine and remote patient monitoring
- Brain computer Interface- trends and opportunities
- 3D Printing and its applications
- Entrepreneurship and Innovation
- Artificial Intelligence in Healthcare
- Augmented and Virtual Reality tools for Cognitive enhancement
- Modern Interventional tools to overcome Neurodevelopment disorders
- Advancements in technology and education 4.0 related to the theme.
- Symptomatic management of human health
- Applications of SEM, TEM in Biomaterials and Nanoparticles
- Research Ethics and Plagiarism

## **Learning outcome of DST-STUTI 2022:-**

- Enumerate the effects of advancements in healthcare technology research and its benefits to the young researchers and rehabilitation specialists working in the field.
- Develop interest for the Symptomatic management of human health.
- Motivate young researchers to explore new ideas and their applications in the field of healthcare and patient well-being.
- Sharing of new tools and skill development techniques related to the broader Workshop theme.
- Development of mutual cross linkages and collaborations among participants especially in the field of neuroscience and neurodevelopmental brain health gaps.
- Bridge the gap and create awareness among such population and their guardians regarding the cognitive impairment conditions and how they could be treated in efficient manner.
- Enhance knowledge on neurodevelopmental disorders, global developmental disorders such as cerebral palsy, Parkinson, autism spectrum disorders.
- Device development process and technology transfer from laboratory to market
- Increase awareness among policy makers and people working in the field of healthcare technology and interface with different government agencies.
- Learning on Entrepreneurship, Innovation and Start-ups in line with Government of India policies

## **List of Resource persons:**

1. Prof. Suhel Pervez, Jamia Hamdard University, Delhi
2. Prof. Prakash Babu, University of Hyderabad
3. Prof. B. Panda, ICSSR-NERC, NEHU, Shillong
4. Prof. Sarvana Babu, JSS Academy of Higher Education, Mysore
5. Dr. Anwita Mudiraj, University of Hyderabad
6. Dr. Timir Tripathi, IGNOU, Kohima
7. Mr. Kaushik Maity, Go 3D Printing, Kolkatta
8. Dr. Mukesh Jain, CV Laser Pty Ltd., Australia
9. Ms. D. Myrboh, SAIF, NEHU
10. Dr. Suman Dhaka, IIT, Jodhpur
11. Mr. Rick C., Turbit, Shillong
12. Dr. Suman Dhaka, IIT, Jodhpur
13. Mr. Vipin Tyagi, Inmito Pvt Ltd., Delhi
14. Dr. Ranjit Sil, NEHU, Shillong
15. Mr. Shayamal Mandal, NEHU, Shillong

**Last date for submission of applications: 30<sup>th</sup> December, 2022**

Registration link: [https://docs.google.com/forms/d/1CszxIACKw6Wa\\_vXs-h3yRlf8JMefSBRGk\\_sZi\\_gGnis/edit](https://docs.google.com/forms/d/1CszxIACKw6Wa_vXs-h3yRlf8JMefSBRGk_sZi_gGnis/edit)

**For Further details, please contact COORDINATOR:**

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North Eastern Hill University  
Shillong-793022, Meghalaya  
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## **EVENT ORGANIZERS**



Prof. P.S. Shukla  
PATRON-IN-CHIEF  
Vice Chancellor, NEHU, Shillong, Meghalaya



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PATRON  
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DST-STUTI Coordinator  
Jamia Hamdard, Delhi



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Prof. Prakash Babu, Secretary General, SNCI



Dr. Rajpal Singh, Secretary, SNCI



Dr. Punit Gautam, Joint Coordinator,  
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NEHU, Shillong, Meghalaya



Dr. Dinesh Bhatia, Coordinator,  
Department of Biomedical Engineering,  
NEHU, Shillong, Meghalaya



## PROGRAMME SCHEDULE (TENTATIVE)

TIME DAY	9:30-11:00 AM	11:00 AM to 11:30 AM	11:30 AM to 1 PM	1 PM to 2 PM	2PM to 3 PM	3PM to 3:30 PM	9:30-11:00 AM
06.02.2023 (Monday)	DST, STUTI 2023 Inauguration Programme	TEA/ COFFEE BREAK	<b>Prof. Suhel Pervez,</b> Jamia Hamdard University, Delhi Attention to Memory: Framing Cognitive Tools for Neurodevelopment of Young Minds	LUNCH	<b>Prof. Prasenjit Biswas,</b> NEHU, Shillong  Plasticity and Brain Regions: sn ethically based Algorithm	TEA/ COFFEE BREAK	<b>Dr. Sanjeev Nara,</b> BCBL, Spain-Plenary talk  Expectation Suppression across sensory modalities
07.02.2023 (Tuesday)	<b>Prof. Prakash Babu, University of Hyderabad – Keynote Talk</b> Cognitive enhancement techniques		<b>Industry Talk: Mr. Kaushik Maity</b>  3D printing and applications in healthcare  <b>Dr. R. Sil, NEHU, Shillong</b> Legal aspects in functioning of a healthcare system	LUNCH	<b>Prof. S. Kanagaraj,</b> IIT, Guwahati- Keynote Talk Analysis of Plantar Pressure Neuroethics and Cognition Distribution for aiding neuropathic foot disorder		<b>Dr. Masaraf Hussain</b> AIIMS Guwahati  Evaluation of the Child with development impairments
08.02.2023 (Wednesday)	<b>Prof. Bhaskar Borgohain,</b> NEIGHRIMS, Shillong  Cognitive Rehabilitation techniques  <b>Mr. S. Mandal,</b> NEHU, Shillong  Position Tracking System for Alzheimer’s Patients with Health Condition Monitoring		<b>Prof. A.B. Kunnumakkra,</b> IIT, Guwahati- Keynote talk  Nutraceuticals in the prevention and treatment of neurodevelopmental disorders: What we learnt thus far?		<b>Industry Talk: Dr. Sanjeev Kubakaddi,</b> ITIE Knowledge Solutions, Bangalore  <i>EEG and Cognitive Neuroscience</i>		<b>Hands-On Session I:</b> Inmito Meditech Pvt. Ltd. Deep Brain Stimulation Tools and techniques  6:30 -8 PM: Cultural Programme followed by DINNER
09.02.2023 (Thursday)	<b>Dr. Rajpal Singh Kashyap,</b> Director Research, CIIMS, Nagpur- Plenary Talk  Translational Research : Strategies for Bridging the Gap from Bench to Bedside		<b>Dr. Deepak Joshi,</b> IIT, Delhi Wearables and Artificial Intelligence for Neuromotor Disabilities: Diagnosis and Intervention  <b>Dr. Suman Dhaka-</b> IIT Jodhpur  Cognitive Enhancement with Non-invasive Brain Stimulation: Opportunities and Challenges		Visit to SAIF Centre, NEHU, Shillong  Applications of SEM, TEM in Biomaterials and Nanoparticles		Visit to SAIF Centre, NEHU, Shillong  Applications of SEM, TEM in Biomaterials and Nanoparticles
10.02.2023 (Friday)	<b>Prof. Moumita Mukherhee,</b> Adamas University, Kolkata  Terahertz thermography and imaging of brain tumour: A novel technique in Neuroscience		<b>Symposia and Presentation :</b> Presentation by Participants on chosen topic and evaluation by Experts with panel discussions		<b>Dr. Timir Tripathi,</b> <b>Director IGNOU, Kohima</b>  Research Ethics and Plagiarism		<b>Mr. Flo Obenhoffer, Prime Hub, Govt. of Meghalaya</b>  Innovation and Entrepreneurship opportunities
11.02.2023 (Saturday)	<b>Dr. Dinesh Bhatia,</b> <b>NEHU, Shillong</b>  R-TMS for children with disability		<b>Industry Lecture: Turbit Shillong</b>  Role of Virtual and Augmented Reality in cognition		<b>Prof. B. Panda,</b> <b>Director, ICSSR,</b> <b>NEHU, Shillong</b>  Economic and Social costs of Healthcare Innovation		DST-STUTI 2023 Valedictory Programme  *Feedback/comments by participants and Certificate Distribution
12.02.2023 (Sunday)		Departure of Participants, Speakers and other Invited dignitaries					

**APPLICATIONS INVITED**

**Registration Form for DST-STUTI Hands-on Training programme  
On**

**Innovations in Healthcare Technologies (Blended mode)**

**(Sponsored by Department of Science and Technology, Delhi)**

**6<sup>th</sup> to 12<sup>th</sup> February, 2023**

**Department of Biomedical Engineering, North Eastern Hill University, Shillong-793022,  
Meghalaya, India**

**Name:**

**Recent**

**Photograph**

**Date of Birth:**

**Qualifications:**

**Designation:**

**Teaching Experience in years:**

**Research Experience in years:**

**Department/Institute/University:**

**Mailing Address:**

**Mobile Number:**

**E Mail Address:**

**Mode of Attendance: Physical / Online (Tick one)**

The above information provided is true and to the best of my knowledge. If, selected, I agree to abide by the rules and regulations of the program and NEHU, Shillong, Meghalaya.

Signature of Candidate

## **Endorsement cum No Objection Certificate from the Head of the Department/ Institute**

(To be given on University/ Institute/ College Letter head)

### **This is to certify that:**

1. Dr. /Mr. / Ms. / Mrs. \_\_\_\_\_, is a bonafide student/employee of our University / Institute / College and will assume full responsibility for actively participating in DST-STUTI Hand-on Training programme entitled “*Innovations in Healthcare Technologies*” sponsored by Department of Science and Technology (DST), Delhi, scheduled from 6<sup>th</sup> to 12<sup>th</sup> February, 2023 at Department of Biomedical Engineering, North Eastern Hill University, Shillong-793022, Meghalaya, India.
2. The Applicant is a Full-time / part-time student/employee of our University/ Institute/ College and enrolled/working in .....Department w.e.f. ....
3. The candidate has secured \_\_\_\_\_ % / CGPA / CPI till date (if applicable).
4. The candidate is currently carrying out research/project as a part of his/her course curriculum and has completed the core courses of the program.
5. The University/ Institute/ College also endorses the conduct of the applicant to be of highest order who bears a good moral character.
6. The University/ Institute/ College has “No-Objection” for the candidate participation during the above said period.
7. The candidate, if selected for participation, shall be duly permitted to attend the workshop in physical/online mode and relieved by the Institute to join the Karyashala. The University/ Institute/ College would provide the necessary facilitation needed for this purpose.

Signature and Seal with name  
(Head of the Department/Institute)

Date:

Place: