

Title: FDP on “Additive Manufacturing for Healthcare Innovations (AMHI–2026)”

Organized by: Department of Mechanical Engineering, HBTU Kanpur

Dates: 28–30 April 2026

Three-day Faculty Development Programme (FDP) on “*Additive Manufacturing for Healthcare Innovations (AMHI–2026)*”, organized by the Department of Mechanical Engineering, HBTU Kanpur, from 28th to 30th April 2026, was successfully conducted in hybrid mode. A total of 115 participants from different states, including faculty members, medical practitioners, research scholars, and students, actively participated in the programme. The FDP featured a series of expert sessions delivered by eminent academicians and professionals from both engineering and healthcare domains, significantly enriching the learning experience of the participants. The programme was conducted under the leadership of Prof. Vinay Pratap Singh, Chairman, Dean School of Engineering & HoD MED, HBTU Kanpur, with Prof. Jitendra Bhasker, Convenor and Professor, Department of Mechanical Engineering, HBTU Kanpur, and Dr. Saurabh Sangal, Coordinator and Assistant Professor, Department of Mechanical Engineering, HBTU Kanpur.

Prof. Jitendra Bhasker, Convenor and Professor, Department of Mechanical Engineering, HBTU Kanpur, initiated the technical sessions by highlighting the fundamentals and future scope of additive manufacturing. Distinguished expert lectures were also delivered by Prof. J. Ramkumar, Professor at Indian Institute of Technology Kanpur, Prof. Saumyendra Singh, Professor at King George's Medical University, and Dr. Subhadeep Roy, Assistant Professor at Birla Institute of Technology Mesra, who shared advanced insights on additive manufacturing applications in healthcare and regenerative medicine. Industry perspective was provided by Mr. J. Arul Regan, National Senior Manager–3D Applications at Monotech Systems Ltd, who discussed industrial practices and healthcare manufacturing workflows. In addition, clinical expertise was shared by Dr. Manish Vishnoi from Vishnoi Dental Hospital and Dr. Jebin Aron from Thangam Hospital, highlighting real-life applications such as dental prosthetics, maxillofacial reconstruction, and patient-specific implant design. A key highlight of the programme was the academic and clinical visit to Vishnoi Dental Hospital, where participants gained first-hand exposure to digital dentistry workflows, intraoral scanning, and the practical implementation of additive manufacturing in clinical settings. Additionally, a comprehensive hands-on session was conducted in the 3D Printing Laboratory of the Mechanical Engineering Department, where participants were trained in operating 3D printers, understanding slicing software, and developing prototypes from

digital models under expert guidance, These expert sessions, combined with interactive discussions and field exposure, provided participants with a comprehensive understanding of both theoretical concepts and real-world applications of additive manufacturing in healthcare.



03-Day FDP (April 28-30, 2026) on Additive Manufacturing for Healthcare Innovations

Organized in Hybrid Mode by Department of Mechanical Engineering, Harcourt Butler Technical University, Kanpur - 208002.

In collaboration with Vishnoi Dental and Hospital, Kanpur & Thangam Hospital, Kanpur.

INTRODUCTION
Additive Manufacturing commonly known as 3D Printing, is transforming healthcare through surgical planning and the creation of customized implants, prosthetics, surgical guides, drug delivery devices, tissue scaffolds, and anatomical models. By producing custom, patient-specific designs directly from digital files (DICOMs), it reduces production time, material waste, and manufacturing costs. The integration of additive manufacturing with biomedical engineering, advanced materials, and digital design is advancing personalized medicine and point-of-care solutions. The customized drug design and drug delivery is also a promising application of 3D Printing technology. In some cases, disease is diagnosed in fetus, and surgery planned for just before the baby takes place. So, back to back to high engineering research students and faculty in the relevant area for healthcare.

SOLE SPONSOR
A Faculty Development Program in Additive Manufacturing enhances faculty expertise in emerging 3D-Printed/AM-based devices/skills/skills with integration of 3D Printing technology in their teaching and research. The outcome of this 3-day intensive learning workshop includes: understanding the capabilities of 3D printing, understanding the process and applications of additive manufacturing, a 3D-Printed 3D Printing technology has been established to support and strengthen the research with advanced fabrication capabilities.

HBTU KANPUR
Harcourt Butler Technical University (HBTU), Kanpur, is a more than 100-year-old technical institution that received University status in 2006 by the Government of Uttar Pradesh. It is the very first technical university in India to be awarded the NAAC Grade 'A+' accreditation, affirming its commitment to excellence in technical education, research, and innovation. Established with the vision of becoming a leading Residential University and Centre of Excellence, HBTU focuses on Research and Development, Incubation, and interdisciplinary programmes. Learning Engineering, Technology, Management Engineering, Basic and Applied Sciences, Humanities, Social Sciences, Management, and Architecture. The University actively promotes skill development and Startup ecosystem through Incubation Hub and HBTU-ITP, Founder-led start-up company.

MECHANICAL ENGINEERING DEPARTMENT
Established in 1954, the Department of Mechanical Engineering offers B.Tech. (Mechanical Engineering) B.Tech. (Mechanical Engineering) and Ph.D. programmes, with certified faculty, advanced laboratories, and strong research facilities. The department provides comprehensive undergraduate and postgraduate programs, along with proprietary testing and consultancy services to its students.

REMP Laboratory
REMP Laboratory is available in Mechanical Engineering Department with advanced computing facilities, 3D Scanner and various 3D Printing facilities. Researchers of this lab are actively engaged in medical innovation and masters' thesis. PhD. thesis with collaborative medical organization such as ICMR, Lucknow, SPMU Lucknow, Secunder, REMS lab has been identified as digital manufacturing centre for startups.

Vishnoi Dental Hospital
Vishnoi Dental & Hospital is situated very close to HBTU, Kanpur Campus, with fully equipped centre for fast tracked dental care such as single visit root canal, digital smile makeover, full mouth rehabilitation, orthodontic treatments and maxillofacial surgery. It has also fixed ortho, hair, and ENT treatment facilities. This hospital offers 3D imaging - CBCT, CAD/CAM and digital impression and laser dentistry.

Thangam Hospital, Kanpur
Thangam Hospital, Kanpur is a leader in advanced laboratory care, with 40+ years of excellence, 20,000+ cancer treatments, 2,000+ lung surgeries, and 1000+ robotic procedures. Its state-of-the-art PET-CT, proton, radiotherapy, laser, patient-focused, innovative and Smart Coding ensure world-class, comprehensive cancer care.

Keynote Experts
Prof. Jitendra Kumar Singh, Vishnoi Dental & Hospital, Kanpur
Dr. Manish Vats, Vishnoi Dental & Hospital, Kanpur
Dr. Deepak Kumar, Vishnoi Dental & Hospital, Kanpur
Dr. Sandeep Kumar, Vishnoi Dental & Hospital, Kanpur
Dr. Anand Kumar, Vishnoi Dental & Hospital, Kanpur
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Keynote Topics
Introduction to AM processes & 3D Printing, FDM, SLS, SLS, DMLS, Binder Jetting and Blasting
Digital 3D Modelling from CT Scan/ MRI - DICOM files
Digital Dentistry & Dental Hospital visit
3D Printing for maxillofacial Orthodontics, Regenerative medicines
Mechanical Intervention in Oncology
3D Printing for Orthopaedics
FDA Regulations & Supply Chain

Who should attend
UG / PG students of Mechanical, Biomedical, Chemical, and Materials Engineering
Faculty members seeking to integrate AM into teaching and research curricula
Healthcare professionals and clinicians
Industry professionals from medical devices, orthopaedics, dental, and pharmaceutical sectors

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