



MINISTRY OF DEVELOPMENT OF
NORTH EASTERN REGION



Prime Minister's
Development Initiative
for North East Region
(PM-DevINE)

Visit of Shri K. Moses Chalai, IAS, Secretary, Department
of Public Enterprises with CMDs at 3DPCoE, Guwahati



Discussions On Virtual Surgery Planning At Cachar Cancer Hospital and Research Centre, Silchar, Assam



3DP CoE Provides Models, Guides & Implant to CCHRC for Mandible Surgery

BARAK VALLEY'S SURGICAL LEAP: DIGITAL TWIN MEETS ONCOLOGY



In a groundbreaking first for Barak Valley, AMTRON's 3D Printing Centre of Excellence (3DP CoE) joined hands with Cachar Cancer Hospital & Research Centre (CCHRC) to assist in a complex, mandibular cancer surgery using the power of Digital Twin for pre-surgery planning and deployment of 3D personalised mandibular surgery assisted by 3D Printed Surgical Jigs/Guides. The AI based software and digital tools has enabled the surgeons to plan and rehearse the surgery in advance which implies enhanced precision, reduced operating time, reduced use of anaesthesia and minimised risks. This marks the first ever deployment of Industry 4.0 technology in the medical sector in Barak Valley, setting a new benchmark for innovation in regional healthcare. This has been possible due to Ministry of Development of North Eastern Region, Government of India PM DevINE Project under which AMTRON was selected to commission the project of Digital Design and 3D Printing Centre of Excellence in the Electronic Manufacturing Cluster (EMC) in collaboration with other Government Agencies at Tech City, Dibrugarh (Assam).

Hospital officials and the engineering team from AMTRON emphasised that the successful cases not only benefited the individual patient but signals a shift toward smarter, safer surgical care addressing the affordability, accessibility and quality of care to patients in the remote part of North East using the power of Industry 4.0 enabling breaking of other difficulties. By integrating advanced 3D printing into oncology workflows, this initiative paves the way for expanding such applications into orthopaedics, neurosurgery and reconstructive procedures. Stakeholders hope this model will catalyse broader adoption, making surgeries more efficient and outcomes more predictable across the state.

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Digital Twin And 3D Printing Assistance In Sternum Implant For Cachar Cancer Hospital

Segmentation Based on CT data for Sternum And Rib Portion



CT Scan Data



CT Scan Convert 3d Model



Modelling of Infected Area

The Implant is Prepared Using the Sternum and Rib



Sternum top surface Use To design the Implant



Complete Designing sternum implant

3D metal Printing After the Sternum Implant design

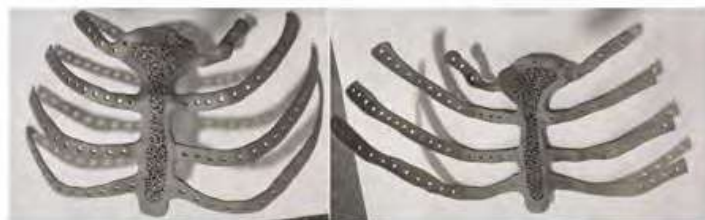


Sternum 3d Implant



After the 3d metal Printing Implant

After Post Processing the Final 3D metal Printing Sternum Implant



Sternum 3d printed Implant





REVIEW OF INDUSTRY 4.0 PROJECTS BY CS, MANIPUR



NRL Team Visit at 3dpcoe, Tech City, Guwahati



Visit by officials of BPCL at 3DPCOE, Tech City, Guwahati



Visit by Officials of GRSEL at 3DPCOE, Tech City, Guwahati



Workshops

P.C.P.S. Girls Polytechnic Students at 3DPCoE, Guwahati



Faculty and Students of Assam Skill University at 3DPCoE, Guwahati

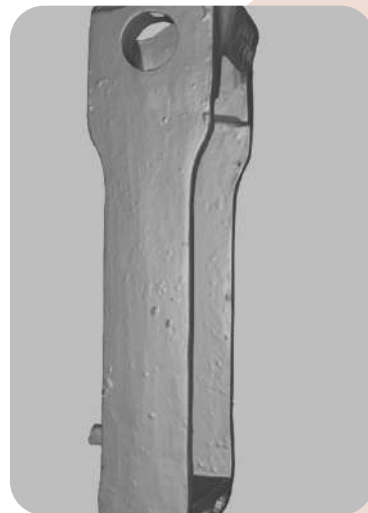


5 Days Training course on Digital Design and 3D Printing Technology at Assam University, Silchar





Demonstration for Railway Usecase



Demonstration for Mining Usecase



Demonstration for Refinery Usecase





3D Printing Spoke Visit by Dima Hassao Youth at
Assam University Silchar



Lab visit by Computer Science Department,
Assam University Silchar



Discussion on Digital Twin and 3D Printing Technology in pre-
surgery planning at Silchar Medical College

