eNewsletter - 008/ OCT 2025

MINISTRY OF DEVELOPMENT OF NORTH EASTERN REGION

AMTRON

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

Digital Design and 3D Printing Center of Excellence in the Electronic Manufacturing Cluster (EMC) in collaboration with other Government Agencies located at Tech City, Guwahati

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

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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

It's a groundbreaking first for Barak Valley. AMTRON's 3D Printing Centre of Excellence (3DPCoE) 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 printed implant for maxillofacial 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 minimized 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 Center of Excellence in the Electronic Manufacturing Cluster (EMC) in collaboration with other Government Agencies at Tech City, Guwahati (3dpcoe.in).

Hospital officials and the engineering team from AMTRON emphasize that the successful case not only benefited the individual patient but signals a shift towards smarter, safer surgical care addressing the affordability, accessibility and quality of care to patients in the remotest part of North East using the power of Industry 4.0 enabling breaking of cyber physical barrier. By integrating advanced 3D printing with 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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EasternChronicle

3D Tech revolutionizes cancer surgery at Cachar Cancer Hospital in Silchar


যুগশঙ্খ

থ্রিডি প্রযুক্তি ব্যবহার করে কাছাড় ক্যান্সার হাসপাতালে সফল জটিল অস্ত্রোপচার

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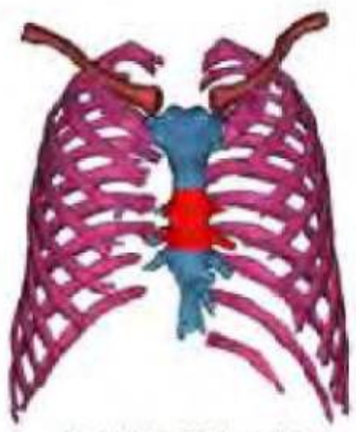
Digital Twin And 3D Printing Assistance In Sternum Implant For Cachar Cancer Hospital

Segmentation Based on CT data for Sternum And Rib Portion

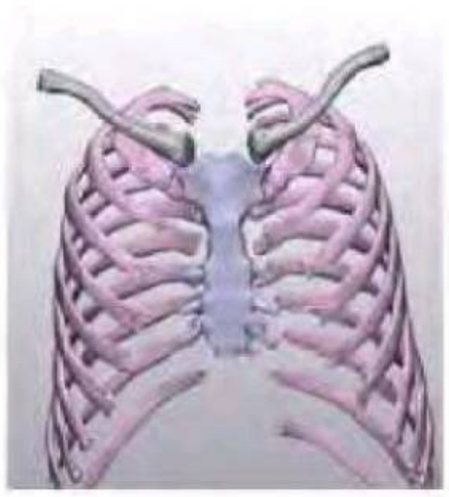
CT Scan Data

CT Scan Convert 3d Model

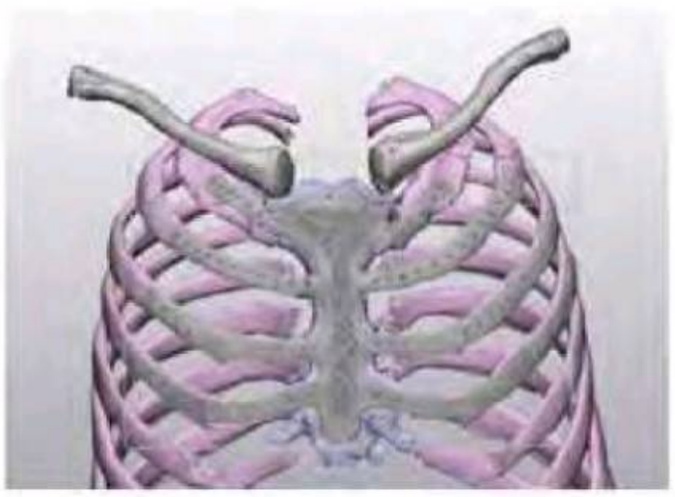


Modelling of Infected Area

The Implant is Prepared Using the Sternum and Rib



Sternum top surface Use To design the Implant



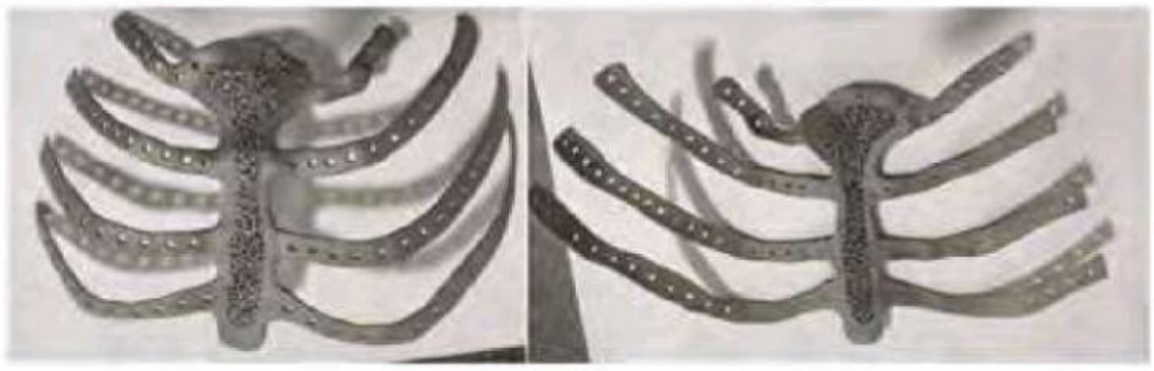
Complete Designing sternum implant

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

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REVIEW OF INDUSTRY 4.0 PROJECTS BY CS, MANIPUR

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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

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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



AMTRON · DIC Design Innovation Centre Panjab University · NORTH EASTERN COUNCIL SHILLONG · राष्ट्रीय प्रौद्योगिकी संस्थान, सिलचर NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR

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Demonstration for Railway Usecase

Demonstration for Mining Usecase

Demonstration for Refinary Usecase

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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