

3D Printed Patient Specific Medical Implants technology transferred to the Industry

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New Delhi, Jan 17 (India Science Wire) : CSIR-Central Scientific Instruments Organisation (CSIR-CSIO) has transferred the knowhow of “3D Printed Patient Specific Medical Implants” to the industry. The requirement of such implants may arise due to trauma, diseases like cancer or fungal infection, revision surgeries etc.

Patient Specific Implant (PSI) are required when current commercially available implant for the site are either not available or doesn't fulfill the anatomical requirement. In those cases PSI are designed for one particular patient from the CT-Scan data and then manufactured using 3D printing technology in Titanium or other biocompatible materials. The technology has been developed by CSIR-CSIO.

PSI are also beneficial for joint salvaging surgeries e.g. when human joints are good but bone near joints area is infected or traumatized. CSIR-CSIO has developed the know-how & expertise of PSI development for load bearing & non-load bearing anatomical sites.

The PSI were developed at “Innovative Additive Research & Manufacturing (iARM) Lab” of the CSIR-CSIO. The lab is having all the facilities related to design, manufacturing and testing of standards as well as patient specific orthopaedic/maxillofacial implants, in addition to surgical models, surgical tools, custom-made prosthetics, tissues engineering, organ printing, etc.

Prof. R K Sinha, Director CSIR-CSIO said that to work in this direction, CSIR-CSIO has also established a state of the art lab namely “Innovative Additive Research & Manufacturing (iARM) Lab”, having all the facilities related to design, manufacturing and testing of standard as well as patient specific orthopaedic/maxillofacial implants. The implants developed in iARM Lab are successfully implanted in various patients at prestigious institutes.

Sh. Vijay Kumar Meena, Principal Scientist, CSIR-CSIO who has developed the knowhow of PSI said that he and his team are working on development of technologically advanced 3D printed implants in India. Patient Specific Implants are one of them. The patient specific implants developed in iARM Lab were successfully implanted to the patients at prestigious government and private institutes. The medical applications of 3D printing are continuously increasing day by day. Digital Healthcare from imaging based technologies (CT, MRI, and ultrasound) to medical implant and organs will sooner or later become a routine.

Dr. Surender Singh Saini, Head, Business Initiative Group said in this way CSIO contributing to the “Swasth Bharat” Mission of Govt. of India and by transferring the knowhow it is step towards the “Make-in-India” program. (India Science Wire)

Keywords : CSIR-CSIO, Patient Specific Implant, technology transfer