

## **Technologies, materials and clinical application of 3D printing**

*Tuesday, 26 September 2023 15:25 (15 minutes)*

Since 2017 at IC - CNR started new research line to study the clinical use of image processing, reverse engineering and 3D printing for the introduction of innovative medical devices (MD) in pathways.

To this, an operative workshop for design and realization of personalized MD was designed and implemented. The first type of 3D printed MD was patient specific orthopaedic cast to be used for children requiring immobilisations. A second activity was devoted to the production of 3D models from NMR and CT images. The clinical value of the proposed devices has been verified.

Both activities have a twofold objective: (a) introduce new medical devices in the clinical pathways based on innovative techniques and (b) design production process compliant with the current European Medical Devices (MD) regulation (17/745) and on the basis of the up-to-date technical reference for 3D printing in medicine.

To this an operative workflow for the production of the personalized 3D printed medical devices has been produced.

Moreover, the project led to a specific spin off and to the launch of a Research Unit located both into the Santobono Pausilipon paediatric Hospital in Naples.

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**Session Classification:** Session