ABSTRACT - POSTER

RAPIDOS - Towards the rapid manufacture of composite parts for biomedical applications

S. Hocquet[1], M. Lasgorceix[2], E. Meurice[2], A. Arslan[3]
[1] Belgian Ceramic Research Centre, 4 Avenue Gouverneur Cornez B-7000 Mons (BE)
[2] CERAMATHS-UPHF, 2 Campus Univ. de Maubeuge, Bld. Charles de Gaulle 59600 Maubeuge (FR)
[3] BIO INX, 66 Technologiepark-Zwijnaarde 9052 Zwijnaarde (BE)

RAPIDOS, the result of collaboration between the CRIBC (Belgian Ceramics Industry Research Centre, Mons, Wallonia), the CERAMATHS laboratory at the Université Polytechnique Hauts-de-France (Maubeuge, France) and BIO INX (Ghent, Oost Vlaanderen), aims to bring innovation to the biomedical field by 3D printing complex-shaped parts using a biocompatible photosensitive resin and a synthetic bioceramic powder. This cross-border initiative is part of the Interreg VI France-Wallonie-Vlaanderen programme, highlighting cooperation between France, Wallonia and Flanders to achieve the objective of reducing manufacturing time and costs.

The RAPIDOS project draws on the complementary skills of the three operators. The CRIBC, as lead partner, contributes its expertise in inorganic and non-metallic materials, as well as its mastery of additive manufacturing. The CERAMATHS laboratory complements this expertise by providing advanced skills in the synthesis of phosphocalcic powders, essential for the formulation of synthetic bioceramic materials. Finally, BIO INX contributes its know-how in the development of biocompatible photosensitive resins suitable for ceramic stereolithography.

The RAPIDOS project partnership aims to drastically reduce production times for customised parts for biomedical applications, with a target of manufacturing in less than 48 hours. This innovative approach paves the way for new possibilities in dental and orthopaedic surgery, enabling greater customisation of implants and prostheses for better adaptation to individual patient needs.

RAPIDOS is a project funded under INTERREG VI FWVL - https://www.interreg-fwvl.eu/fr

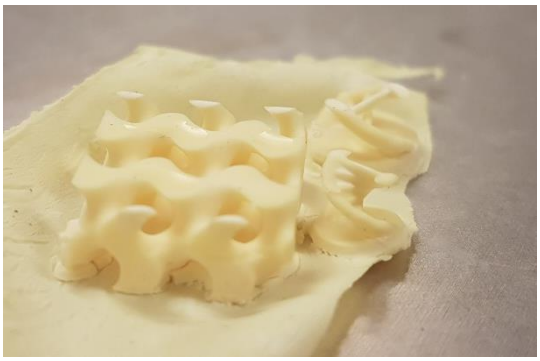

Figure: DLP printing of macroporous 'gyroid' parts from a photosensitive biocompatible resin incorporating hydroxyapatite