

## THERMAL AND MORPHOLOGICAL CHARACTERIZATION OF 3D PRINTED PLA SCAFFOLDS FOR BIOMEDICAL APPLICATIONS

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In the last years, porous scaffolds, based on polymers, such as poly-(lactic acid) (PLA), has been widely used for biomedical applications, such as medicaments transport, sutures and bone fixing, as it is a biodegradable material, which does not produce toxic products through the degradation process, and exhibits acceptable mechanical properties. This work presents a characterization of G, P, and D-type triply periodic minimal surfaces-based scaffolds, manufactured by fused deposition modelling, with different printing parameters and porosity values of 50, 60 and 70%. Thermal characterization was carried out by thermogravimetric analysis, differential thermal analysis and differential scanning calorimetry. Morphology was studied by scanning electron microscopy and micro axial computed tomography. The analyses showed a noticeable change in the crystallinity of the scaffolds that were printed in the temperature interval 210 to 220 °C.

**Keywords:** Scaffolds, Poly-(lactic acid), 3D printing

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