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Performance of additively manufactured ZnMg for biomedical implant applications

The newest research for alternatives to autologous bone grafts when treating bone defects leads to the development of bioresorbable materials. In this work, bioresorbable zinc-magnesium alloys are 3D-printed by Powder Bed Fusion of Metals using a Laser Beam (PBF-LB/M). The goal is to manufacture load-bearing implants (e. g. patient-specific scaffolds or cages) with suitable degradation properties and non-toxic byproducts, avoiding harm to the surrounding tissue. The mechanical properties of bulky and scaffold-like structures as well as their biocompatibility according to ISO 10993-5 are investigated.

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