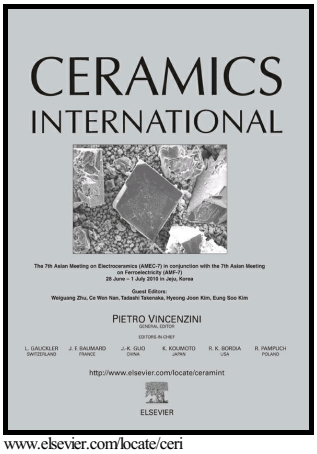

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PII: S0272-8842(18)31524-4
DOI: https://doi.org/10.1016/j.ceramint.2018.06.095
Reference: CERI18539

To appear in: *Ceramics International*

Received date: 29 May 2018
Revised date: 8 June 2018
Accepted date: 11 June 2018

Cite this article as: J.V. Rau, I. Antoniac, M. Filipescu, C. Cotrut, M. Fosca, L.C. Nistor, R. Birjega and M. Dinescu, Hydroxyapatite coatings on Mg-Ca alloy prepared by Pulsed Laser Deposition: properties and corrosion resistance in Simulated Body Fluid, *Ceramics International,* https://doi.org/10.1016/j.ceramint.2018.06.095

Hydroxyapatite coatings on Mg-Ca alloy prepared by Pulsed Laser Deposition: properties and corrosion resistance in Simulated Body Fluid

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ABSTRACT

Magnesium (Mg) alloys are very promising biocompatible materials for biodegradable biomedical implants, however, the main problem in using them is their fast degradation in the conditions of human body. In this work, we coated Mg-Ca (calcium) alloy substrate with hydroxyapatite (HA) to improve its resistance to corrosion and to control the *in vitro* degradation. Pulsed Laser Deposition technique was applied to deposit HA coatings. Their properties were investigated by X-ray diffraction (XRD), atomic force microscopy, scanning electron microscopy, high resolution transmission electron microscopy, Vickers microhardness, and Tafel plot