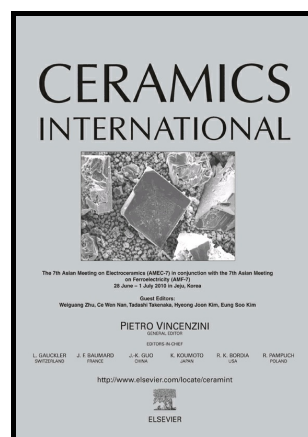


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**Physical, mechanical, and biological properties of electrophoretically
deposited lithium-doped calcium phosphates**

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Abstract

In the present work, the preparation of sintered lithium-doped tricalcium phosphates was studied, along with their physical, mechanical, and biological properties. Calcium phosphates were shaped via the use of electrophoretic deposition (EPD), using colloiddally milled dispersions of hydroxyapatite (HAp) particles. The dispersions were stabilised with monochloroacetic acid. Lithium was incorporated into the structure via an addition of lithium chloride, which also served to optimise the deposition process. The dispersions were milled colloiddally for periods of 0 to 48 hours. The colloiddal milling resulted in two effects: i) disintegration of the commercial HAp powder (10 μm) agglomerates, ii) unimodal distribution of the HAp particles (~ 170 nm). The fine particles of the milled HAp dispersions accelerated the deposition rate, and increased the mass of the deposit. The reduced size of the

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