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A position to conduct a Ph. D. on:

Electrophoretic Forming of Functionally Graded Materials and Coatings

Abstract : Among the different colloidal processing techniques, electrophoretic deposition is very promising because it is a fairly rapid, low cost process for the fabrication of ceramic coatings, monoliths, composites, laminates and functionally graded materials varying in thickness from a few nanometers to centimetres. Electrophoretic deposition (EPD) is a processing technique in which charged particles in a suspension are deposited on an electrode. The particles will move to the electrode in response to an applied electric field (electrophoresis), and under certain circumstances form a deposit on this electrode (electro-deposition).

The ceramic research group has gathered already a lot of experience with this processing technique (http://www.mtm.kuleuven.ac.be/Research/C2/EPD.htm) and the objective of this thesis is to broaden the scientific knowledge on EPD: The aim is to build a comprehensive understanding of the electrophoretic deposition process using a bottom-up approach. The ultimate aim is to be able to predict and control the microstructure of materials that are made by electrophoretic deposition.

In this project, a close collaboration will be established with the research group on Surface Engineering (http://www.mtm.kuleuven.ac.be/Research/SURF/index.html). This group works on a related processing technique namely the co-deposition of particles during electrolytic deposition of metal layers.

Profile : Burgerlijk Materiaalkundig of Burgerlijk Scheikundig Ingenieur, Bioingenieur, Master in Materials Science, Chemical Engineering or Materials Engineering; Master in Chemistry.

Interested ? Please send your CV and a letter of motivation to:

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