Department of Mathematics

University of Houston

Scientific Computing Seminar

Professor Malte A. Peter Institute of Mathematics University of Augsburg Germany

Modelling and simulation of chemical degradation mechanisms in porous media with evolving microstructure

Thursday, March 22, 2012 3:00 PM- 4:00 PM Room 646 PGH

Abstract:

A prototypical reaction-diffusion system in a porous medium is considered, whose microstructure undergoes an evolution with respect to time. Employing the method of homogenization in domains with evolving microstructure, the limit problems are obtained. Attention is also paid to the scaling of the material parameters with powers of the homogenization parameter arising from a nondimensionalization. For one class of applications, an efficient adaptive finite element approach for the resulting limit problem is presented.

This seminar is easily accessible to persons with disabilities. For more information or for assistance, please contact the Mathematics Department at 743-3500.