Dedicated to Professor LAZǍR DRAGOŞ on his 75th birthday

Upscaling of Chemical Reactive Flows in Porous Media

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Abstract - The aim of this paper is to study the asymptotic behavior of the solution of a nonlinear problem arising in the modeling of chemical reactive flows through periodically perforated domains. The asymptotic behavior of the solution of such a problem is governed by a new elliptic boundary-value problem with an extra zero-order term that captures the effect of the chemical reactions.

Key words and phrases : upscaling, reactive flows, Langmuir kinetics.

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