

PHYSICAL MATHEMATICS SEMINAR

Electrokinetic Control of Interfacial Instabilities

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ABSTRACT:

This talk will describe three fundamental examples of interfacial dynamics – viscous fingering, deionization shock propagation, and dendritic electrodeposition – whose stability can be controlled by electrokinetic phenomena in charged porous media. The suppression of these notorious instabilities by electro-osmotic flow and surface conduction will be demonstrated both theoretically and experimentally. Potential applications include electrically enhanced oil recovery, water purification by shock electro dialysis, and energy storage with metal batteries.

TUESDAY, APRIL 24, 2018

2:30 PM – 3:30 PM

Building 2, Room 136

*Reception following in Building 2, Room 290
(Math Dept. Common Room)*

<http://math.mit.edu/seminars/pms/>