Abstract Submitted
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Numerical simulations of miscible channel flow with chemical reactions[1] J.N. KUSUMA, KIRTI SAHU, Indian Institute of Technology, Hyderabad, OMAR MATAR, Imperial College London — We investigate the pressure-driven miscible displacement of one fluid by another in a horizontal channel in the presence of an exothermic chemical raction. We solve the continuity, Navier- Stokes, and energy conservation equations coupled to convective- diffusion equations of the reactant and product. The viscosity is assumed to depend on the volume fraction of the reactant and product as well as the temperature. The effects of relavent paramaters such as, Reynolds number, Peclet number, Damköhler number and the viscosity ratio of the reactant and product will be presented at the meeting.

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