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**On the stabilizing role of species diffusion in chemical enhanced oil recovery**[1] PRABIR DARIPA, CRAIG GIN, Texas A&M University — In this talk, the speaker will discuss a problem on the stability analysis related to the effect of species diffusion on stabilization of fingering in a Hele-Shaw model of chemical enhanced oil recovery. The formulation of the problem is motivated by a specific design principle of the immiscible interfaces in the hope that this will lead to significant stabilization of interfacial instabilities, there by improving oil recovery in the context of porous media flow. Testing the merits of this hypothesis poses some challenges which will be discussed along with some numerical results based on current formulation of this problem. Several open problems in this context will be discussed. This work is currently under progress.

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