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Pore-scale study on reactive mixing of miscible solutions with viscous fingering in porous media

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Highlights

- Mixing process with viscous instability for a chemical system is simulated at pore scale.
- The chemical reaction at fluid front is described by a one-variable reversible model.
- The reaction-diffusion front is employed to balance the diffusion (smoothing) effect and the reaction (sharpening) effect.
- Reactive mixing process with different parameters demonstrated the reaction suppression on mixing.

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