

Abstract Submitted
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Rod Climbing of Suspensions YOUJING GUO, XIAORONG WANG,
Chemical Engineering, Tongji University, Shanghai — We wish to report an unexpected effect observed for particle suspensions sucked to pass through a vertical pipe. Above a critical concentration, the suspension on the outside of the pipe may climb along the outside wall of the pipe and then display a surprising rod-climbing effect. Our study shows that the phenomenon is influenced mainly by the suspension composition, the pipe dimension and the suction speed. The effects of the pipe materials of different kinds are negligible. Increasing the suction force and the concentration increases the climbing height. Increasing the pipe diameter and wall thickness reduces the climbing effect. This behavior may be relevant to that the suspensions of the type described are all displaying markedly shear-thickening.

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