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**Stability of Liquid Bridges Subject to Shear-Induced Flow** ABDULLAH UGUZ, NICK ALVAREZ, RANGA NARAYANAN, University of Florida, Chemical Engineering Department — The volume of liquid held between two solid disks is called a liquid bridge. Liquid bridges have often been investigated for their importance in technological applications, particularly in the floating-zone method for crystal growth of semi-conductors. In this technique a molten zone, i.e., a liquid bridge is created between a polycrystalline feed rod and a monocrystalline seed rod. To control the escape of volatile constituents, encapsulants are added and the float zone is concentrically surrounded by an immiscible liquid. The thermocapillary convection in the presence of an encapsulant generates a shear flow and this shear flow has an effect on the bridge stability. Our interest lies in the stability of the zone in the presence of shear flow. In this study, the flow is created by moving the outer wall that surrounds the encapsulant. It is shown that a returning flow in both the encapsulating liquid and the bridge offers stability of a non-vertical bridge depending on the direction of shear.

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