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Dynamics of the capillary penetration of a viscous liquid into corrugated walls FAUSTO SANCHEZ, FIME Universidad Autónoma de Nuevo León, ABRAHAM MEDINA, ESIME Azcapotzalco, IPN, FRANCISCO HIGUERA, ETSI Aeronauticos, UPM — In this work we present a theoretical study of the spontaneous capillary flow, of a viscous liquid, developed into the gap between a couple of parallel corrugated plates (corrugated Hele- Shaw cell). The periodical corrugation of the interior walls of the plates is assumed as a sine-like pattern, transverse to the flow direction. Such a configuration may generate periodical gaps with a structure where zones of maximum and minimum closing occur. This is a simple idealization of typical micro and nano fabricated gaps used to mould polymers by capillarity. By using the lubrication theory we found that a very peculiar temporal flow is developed which could be of interest to improve the knowledge of this type of moulding.

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