Experimental study of the effect of surface-absorbed hydrophobic particles on the Landau-Levich law MALIKA OURIEMI, GEORGE HOMSY, University of California, Santa Barbara — We present an experimental study of the coating of liquids with particles absorbed on the interface under controlled conditions. The primary variables are the speed of withdrawal (the dimensionless capillary number), the physical properties of the liquid, and the particle surface concentration. Experiments realized with small hydrophobic particles show a thickening effect compared with Newtonian fluids on a smooth substrate and a different power of capillary number than the classical Landau-Levich law. We also observe a strong dependence of the film thickness on particles surface concentration. These experimental observations are consistent with the idea that capillary interactions between particles leads to additional forces acting on the fluid in a manner roughly analogous to Marangoni effects.