

Abstract Submitted
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Shock wave excited liquid micro-jets CLAUS-DIETER OHL, Physics of Fluids, University of Twente, Postbus 217, 7500 AE Enschede, DAAN MARTENS, AALDERT ZIJLSTRA, MICHEL VERSLUIS, DETLEF LOHSE, Physics of Fluids, University of Twente, Postbus 217, 7500 AE Enschede, The Netherlands, NICO DE JONG, Experimental Echocardiography, ErasmusMC, Postbus 1738, 3000 DR Rotterdam, The Netherlands — The meniscus of the gas-water interface in a thin hydrophilic capillary of 1mm and less has some similarities to a “shaped charge” used to penetrate armored vehicles. In this presentation we show high-speed recordings of the interface dynamics after the reflection from a shock wave: the interface flattens and shapes into a microscopic needle-like jet, which accelerates to velocities of 100m/s and more. Further the dependencies of the pressure amplitude, capillary diameter, and interface curvature on the jet velocity are presented.

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