

Abstract Submitted  
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**Forming a fine jet in inkjet printing** E.Q. LI, J.Y.H. FUH, Y.S. WONG, Department of Mechanical Engineering, National University of Singapore, S.T. THORODDSEN, King Abdullah University of Science and Technology, Thuwal, Saudi Arabia — The formation of fine jets during the piezoelectric drop-on-demand inkjet printing has been investigated using ultra-high-speed video imaging. The speed of the jet can exceed 80 m/s, which is much higher than the general drop velocity during inkjet printing. The diameters of the thinnest jets are of the order of a few microns. The generation of such fine jets has been studied over a wide range of viscosities, using 7 different concentrations of water-glycerin solutions. This jetting is associated with the collapse of an air-pocket which is sucked into the nozzle during the printing. This occurs for longer expansion times for the piezo-element. We have characterized the relationship between the speed of the fine-jet and other parameters like the diameter of the jet and the physical properties of the liquid.

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