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Breath Figure Templated Assembly of Ordered and Disordered Array of Holes in Polymer Films VIVEK SHARMA, School of Polymer, Textile and Fiber Engineering, SAI M. GOGINENI, MATIJA CRNE, School of Chemistry and Biochemistry, MOHAN SRINIVASARAO, School of Polymer, Textile and Fiber Engineering, School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA 30332 — Breath figures are patterns formed when water vapor from our breath condenses over a cold substrate. These patterns, which mimic the behavior of dew or chemical vapor deposition, comprise of drops with range of self-similar sizes, and form through coalescence assisted growth. Water drops that condense over evaporating polymer solutions can organize into close packed arrays, and template nicely ordered arrays of holes in polymer films. Using experiments and theory, we examine the role of various parameters that contribute to the formation of ordered assembly. We will present our findings about how the choice of polymer and polymer concentrations and air flow conditions influences the extent of order and the pore size.

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