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Thin ^{4}He films on Nano-porous Diblock Copolymer Substrates[1]
JOHN CUMMINGS, Univ. of Mass. Amherst, MA, ROBERT HALLOCK, Univ. of Mass. Amherst, MA — In recent years diblock copolymer templates have been a focus of attention due to their potential uses in nano-scale systems. The ability to produce regular arrays of cylindrical pores has applications in areas such as the production of nanowires and magnetic storage. Porous polymer films made by doblock copolymer techniques provide an interesting substrate for helium. Previously studied porous geometries e.g. nuclepore, anopore, aerogel, vycor, and porous alumina have provided interesting insights into capillary condensation, the Kosterlitz-Thouless transition and hysteresis. Here we report on the study of thin superfluid ^{4}He films on diblock copolymer substrates by means of quartz crystal microbalance techniques.

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