

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Critical Length and Heat of Fusion of Organic Compounds inside Nano Pores. SAMUEL AMANUEL, JASON TURNER, ALEXANDER CLAIN, CALEB NOVINS, Union College — We probed the first order phase transition of physically confined organic compounds inside nano pores using a Differential Scanning Calorimeter (DSC). Both melting and freezing temperatures of the physically confined systems decreased with the physical size of the materials and scaled linearly with the inverse of their size. While these are in agreement with the Gibbs-Thomson equation, contrary to the assumptions used in developing the equation, the apparent heat of fusion did not remain invariant with size. The apparent heat of fusion decreased as the physical size of the materials decreased. And there appears to be a critical length below which the decrease in the apparent heat of fusion is more pronounced. We have attempted to distinguish between the apparent (measured) and "true" heat of fusion and have demonstrated how the apparent heat of fusion can be altered through thermal history.

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Date submitted: 11 Nov 2016

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