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Specific Heat Capacity of Physically Confined Ethylene glycol in Nano Pores[1] SAMUEL AMANUEL, WILL LINTHICUM, Union College, Dept. of Phys. & Astro. — Sensible heat is a cheap and effective means of storing solar energy where energy storage density can be improved by enhancing the specific heat capacity of the heat transfer materials. Formulating composite materials of heat transfer fluids is a mechanism by which the bulk specific heat capacity can be altered and preferably increased. Traditionally, the specific heat capacity of composite material is evaluated from the weighed average of the individual specific heat capacities of the constituents. This, however, does not take into account the effect of interfacial atoms and molecules. The effect of interfacial atoms and molecules becomes increasingly significant when one of the constituents has dimensions in nano meters. In this study, we evaluate the role of interfacial molecules on the specific heat capacity of composite systems. In order to systematically control the interfacial molecules, we have measured the specific heat capacity of ethylene glycol when it is physically confined in nano pores.

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