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Effect of Nanopore Confinement on the Thermal and Structural Properties of Heneicosan

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Highlights

- Phase transition temperature and enthalpy change of C_{21} in nanopores are depressed.
- Influence of the pore morphology on melting point depression is quantified.
- Influence of the interface interactions on melting point depression is not obvious.
- Degree of supercooling of C_{21} in the pores increases with decreasing pore size.
- A new R_{II} phase and mixed O_{21} and R_I phases are found in smaller nanopores.

ABSTRACT: The effect of nano-confinement on the phase transitions of heneicosane (n-$C_{21}H_{44}$, C_{21}) were investigated using differential scanning calorimetry (DSC) and