597e Self-Assembly of Ordered Organic-Inorganic Materials

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Monte Carlo simulations were used to determine the equilibrium phase behavior of surfactant-hybrid organic-inorganic oxide-solvent systems. This systems have acquired importance because they make possible tuning the properties of ordered porous materials for specific applications. Modifiying the nature of the organic moeity in the hybrid organic-inorganic component can strongly modify the observed structures. For example, if the organic part that is bonded to the inorganic component is hydrophobic, the formation of ordered phases becomes more difficult. A comparison of the obtained structures, such as lamellar, hexagonal, and perforated lamellar, with different organic-inorganic precursos, will be presented.