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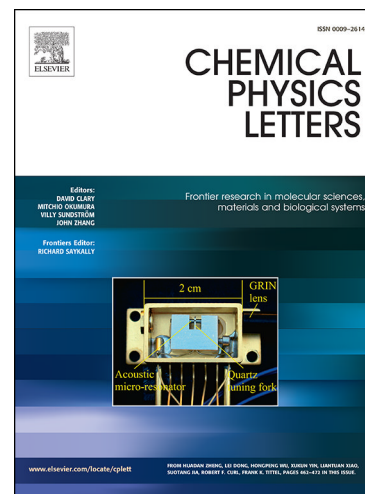
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Anion effects on amorphization and crystallization in room-temperature ionic liquids

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Anion effects on phase behaviors of 1-butyl-3-methylimidazolium ($[\text{C}_4\text{mim}]^+$) and 1-hexyl-3-methylimidazolium ($[\text{C}_6\text{mim}]^+$) based room-temperature ionic liquids (RTILs) were examined at low temperature (LT). By simultaneous X-ray diffraction and differential scanning calorimetry measurements, solid phases were determined at LT. Depending on the molecular interactions, amorphization, crystallization, and cold crystallization were clearly distinguished. In the solid phases, the anion effect differs significantly from the alkyl chain length effect of the 1-alkyl-3-methylimidazolium cations, $[\text{C}_n\text{mim}]^+$.

KEYWORDS: Room-temperature ionic liquids; Anion effect; Crossover behavior between ionic and organic nature; Nanoheterogeneity

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