

Skutterudite compounds and the electron : phonon interaction

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Resumo

Skutterudite compounds are cage systems inside which a guest, or filler, atom performs relatively large excursions. In general, these excursions are described in terms of localized and isolated phonon modes, being called rattling modes. Extensions of this simplified scenario have been considered in recent theoretical works, and experimental evidence in this direction have been demonstrated. We shall give a fast review on the properties of these cage systems, emphasizing the role of the rattling modes in their physical properties. In this direction, we will discuss that these systems are real materials where the electron - localized phonon interaction may act as a new mechanism related to the many physical properties found in skutterudite compounds.