

Synthetic Design of Ce-Based Intermetallics

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Ce-based materials are at the focus of highly correlated systems as Ce^{3+} ($S=1/2$) is an ideal f-electron system to study the interplay of localized magnetic moments and conduction electrons. Our elucidation of crystal growth parameters of Ce-based intermetallics, led to the identification of a new intermetallic homologous series, $\text{A}_{n+1}\text{B}_n\text{X}_{3n+1}$ (A = lanthanides and actinides; B = transition metals; X = tetrrels; $n = 1 - 6$) built up of structural subunits such as AlB_2 , AuCu_3 , and BaNiSn_3 . The homologous series serves as a model system for studying the coupling between localized f-electrons and conduction electrons. Additionally, the stacking of heterostructural subunits is an exciting way to modify physical properties of related phases highlighting the importance of structural building blocks as a new avenue to study magnetism and topology. This talk will focus on the crystal growth and characterization of $\text{Ce}_{n+1}\text{Co}_n\text{Ge}_{3n+1}$.

WebEx Meeting Information

Meeting Number (access code): 199 045 0887

Meeting Password: JshVS4eJ*87

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