Structural Sequence and Physical Properties of Rare-earth C60 Fullerides

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A variety of fullerides have been synthesized and extensively been studied in the past decade. However, the structure and physical properties of rare-earth doped C60 fullerides have not completely been understood. We have tried to prepare high quality samples of C60 with Yb and Sm to study their structural sequence and electronic states. In this presentation, we will report our recent understanding of the superconducting phase of these fullerides.