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Synthesis and self-assembly of dielectric nanocubes

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Abstract

Dielectric nanomaterials are essential for future nanoelectronics, such as gate insulators, high-k capacitors, and resistive random access memories. Among them, dielectric nanocubes are of great interest as their distinct geometry would exhibit excellent dielectric properties with a narrow dispersion of capacitance. This is extremely important for the design of stable dielectric components for next generation nanoelectronics. In this work, we have developed effective approaches to prepare well-dispersed dielectric nanocubes and to assemble them into ordered thin films. Besides, the effect of interface among nanocubes on the electrical properties was examined.

Biography

Dr. Dewei Chu received his PhD in Materials Science and Engineering from Shanghai Institute of Ceramics, Chinese Academy of Sciences in 2008. He is currently an Australian Postdoc Fellow (APD) at the School of Material Science and Engineering, University of New South Wales, Australia. His research interests involve development of oxide thin films from solution chemistry as well as their applications in next generation nanoelectronics.