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ON THE COVER
Obtaining ultimate functionalities in nanocomposites. Composites represent a class of materials that combine two or more constituents into a form suitable for technological applications. This issue of MRS Bulletin focuses on nanoscale composites, with an emphasis on approaches to the design and control of the functionalities of nanocomposite materials. On the cover in the background is a plan-view transmission electron microscope image of a vertically aligned nanocomposite LaFeO$_3$:CoFe$_2$O$_4$ (65:35 molar ratio) film with CoFe$_2$O$_4$ nanopillars embedded in a LaFeO$_3$ matrix. The schematic drawings show the most commonly investigated architectures of nanocomposites. (Top) 1–3-type nanocomposites with pillars or nanofibers aligned in a matrix. (Middle) 0–3-type nanocomposites with nanoparticles dispersed in a matrix. (Bottom) 2–2-type nanolaminates or heterostructured thin films or superlattices. Aiping Chen took the plan-view transmission electron microscope image, and Chris Sheehan drew the schematic drawings of the composites. See the technical theme that begins on page 719.
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