reaction." This result confirms the hypothesis that CeO_2 improves performance by removing the misfit strain between YSZ and Y-123.

The formation of several secondary phases was detected between CeO_2 and Y-123 indicating chemical reactions between the two layers. The formation of these phases is believed to have occurred after the deposition of the Y-123 because the biaxially textured structure of the Y-123 was not affected by the presence of a different phase below it. The reactions between these layers liberated material from the CeO_2 layer which diffused into the Y-123 layer as planar defects causing many gaps and cracks in this layer. These defects did not significantly affect the performance of the conductor used in this study but they may pose a problem for thicker layers of Y-123 or those deposited at higher temperatures.

GREGORY A. KHITROV

Development of Poly(ferrocenophane) Yields a Moldable Magnetic Ceramic Material

Researchers from the University of Toronto have reported in the February 25 issue of *Science* a step toward tunable, ceramic magnets. Mark J. MacLachlan and colleagues transformed iron-and-polymer molecules into a magnetic ceramic material, which was molded into various shapes. The key to the process is a technique for opening the rings in polymers. The group begins with monomers of silaferrocenophane (SFP). Subjecting the SFP to gentle heat produces poly(ferrocenylsilane), or PFS. Poured into molds of various shapes and subjected to more low heat, the molecules in this precursor material transform into a cross-linked network, which is loaded with trapped iron.

High doses of heat in a pyrolysis chamber sets the encapsulated iron free to seek other iron and form nanoclusters. Because larger clusters are more strongly magnetic, or ferromagnetic, the researchers can tune the material's magnetism by adjusting the temperature inside the pyrolysis chamber. Around 500°C, the structure transforms, and iron starts coming together. The size of the clusters grows in correlation with higher temperatures.

Molded into different shapes, such a material may be useful for high-density data storage, antistatic coatings for aircraft or spacecraft, among other applications, according to the research team. □

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Correction

In *MRS Bulletin*, March 2000 issue, page 45, an incorrect illustration ran in Figure 11c from the article "Science and Applications of Mixed Conductors for Lithium Batteries," by Michael M. Thackeray, John O. Thomas, and M. Stanley Whittingham. See the corrected full figure that follows.

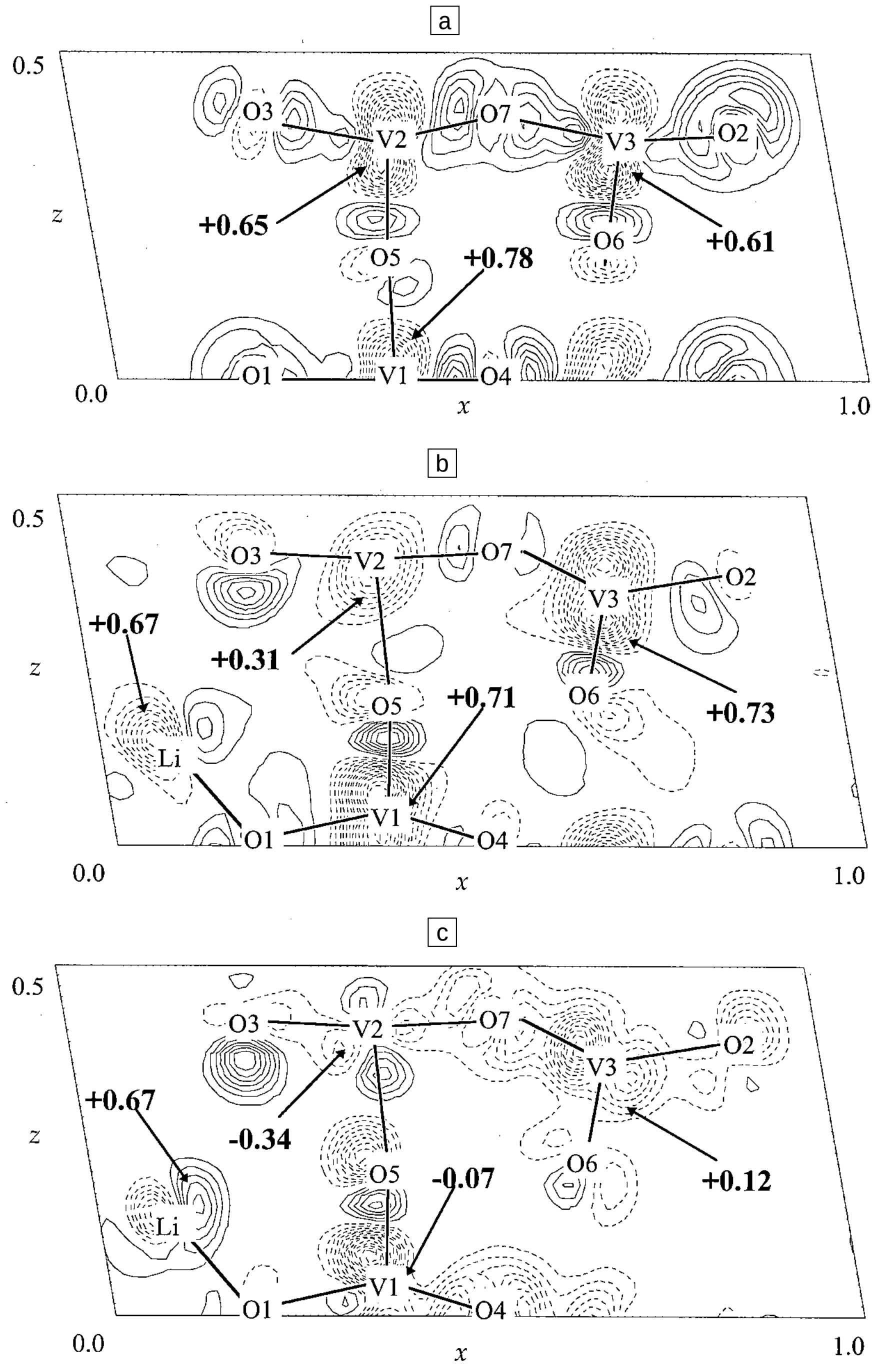

Figure 11. Deformation electron-density maps for (a) V_6O_{13} and (b) $Li_2V_6O_{13}$, and (c) the difference deformation electron-density map ("$Li_2V_6O_{13}$ -V_6O_{13}") in the a-c *plane of V_6O_{13}. Contour intervals plotted at 0.05 e/Å^3; negative regions are represented by solid lines; positive regions are represented by dashed lines; zero level removed.*

https://doi.org/10.1557/mrs2000.65 Published online by Cambridge University Press