exceeding one micrometre. At low temperatures, each current–voltage characteristic was found to be insulating. This ratifies the optical data and is consistent with good sample quality.

Although the STM found that the electrical spectra are spatially homogeneous, it also revealed a form of inhomogeneity. Rønnow and collaborators[3] report that, as with the cubic manganites[5], atomic resolution was only achieved sporadically, which they attribute to the presence of a charge carrier trapped by the occasional defect in an otherwise clean surface. The interaction between the trapped carrier and its surroundings modifies the local electrical behaviour, which, the authors argue, permits the imaging. More generally in condensed matter physics, the interaction between a charge carrier and its local environment results in a composite particle called a polaron. These objects behave very differently from bare electrons and give rise to many of the properties seen in a wide range of materials systems — from silicon semiconductors to heavy fermion metals. Normally the existence of polarons is inferred rather indirectly. The present STM data could represent a fascinating real-space visualization of what is considered to be a very familiar object. To lend weight to their claim, Rønnow *et al.*[3] point out that the span of the region of interest is consistent with neutron and X-ray results.

The ratification of the optical data and the tantalizing glimpse of what might be a polaron are in fact related discoveries. This is because the vacuum between the STM tip and the sample dominates the measured resistance. Consequently, the STM provides a measurement of the out-of-plane conductivity alone. This permits the *c*-axis optical data to be confirmed, and reflects the ease with which one may remove a charge carrier bound as a polaron. One might argue that transferring a charge carrier into the metallic STM tip is different from transferring it between adjacent bilayers, but the activation energy of the zero-bias STM conductivity is very close to the activation energy associated with the high temperature ρ_c, suggesting that this complaint is invalid here.

The use of a local probe to study a layered manganite is an attractive development in manganite physics. A few standard quibbles could arise because both the optical and STM techniques necessarily probe surfaces. Moreover, the great strength of the STM as a local probe is also a minor weakness because it cannot sample large areas such as those used for typical bulk electrical contacts. One possible implication of the results discussed here could be a better understanding of spin-polarized tunnelling between complex crystalline components, for magnetic random access memory[9]. Whatever the future holds, let us note that although the proposed magnetic bricks permit the passage of a current in layered manganites, snails (Fig. 1) can rest easy because their ceramic bricks are rather better at preventing crack propagation.

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CORRIGENDUM

CARBON NANOTUBES: THE WEAKEST LINK

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In this News and Views article, it was incorrectly stated that Herrero-Jarillo *et al.*[1] were the first to report supercurrent through a single-walled carbon nanotube. In fact, the first such report was by Kasumov *et al.*[2] in 1999.

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