Retraction

WE ARE WRITING AS COAUTHORS ON THE following manuscripts published in *Science*, which were, in part, the subject of an independent investigation conducted at the behest of Bell Laboratories, Lucent Technologies. The independent committee reviewed concerns related to the validity of data associated with the device measurements described in the papers.

1) J. H. Schön, S. Berg, Ch. Kloc, B. Batlogg, Ambipolar pentacene field-effect transistors and inverters, *Science* **287**, 1022 (2000).

2) J. H. Schön, Ch. Kloc, R. C. Haddon, B. Batlogg, A superconducting field-effect switch, *Science* **288**, 656 (2000).

3) J. H. Schön, Ch. Kloc, B. Batlogg, Fractional quantum Hall effect in organic molecular semiconductors, *Science* **288**, 2338 (2000).

4) J. H. Schön, Ch. Kloc, A. Dodabalapur, B. Batlogg, An organic solid state injection laser, *Science* **289**, 599 (2000).

5) J. H. Schön, A. Dodabalapur, Ch. Kloc, B. Batlogg, A light-emitting field-effect transistor, *Science* **290**, 963 (2000).

6) J. H. Schön, Ch. Kloc, H. Y. Hwang, B. Batlogg, Josephson junctions with tunable weak links, *Science* **292**, 252 (2001).

7) J. H. Schön, Ch. Kloc, B. Batlogg, High-temperature superconductivity in lattice-expanded C_{60}, *Science* **293**, 2432 (2001).

8) J. H. Schön, H. Meng, Z. Bao, Field-effect modulation of the conductance of single molecules, *Science* **294**, 2138 (2001).

As a result of the committee's findings, we feel obligated to the scientific community to issue a retraction of the above articles. We note that although these papers may contain some legitimate ideas and contributions, we think it best to make a complete retraction.

ZHENAN BAO,[1] BERTRAM BATLOGG,[2] STEFFEN BERG,[3] ANANTH DODABALAPUR,[4] ROBERT C. HADDON,[5] HAROLD HWANG,[1] CHRISTIAN KLOC,[1] HONG MENG,[6] J. HENDRIK SCHÖN[7]

[1]Bell Laboratories, Lucent Technologies, 600 Mountain Avenue, Murray Hill, NJ 07974, USA. [2]Solid State Physics Laboratory, Eidgenössische Technische Hochschule, CH-8093 Zurich, Switzerland. [3]Max-Planck-Institut für Polymerforschung, D-55021 Mainz, Germany. [4]Microelectronics Research Center, University of Texas, Austin, TX 78758, USA. [5]Department of Chemistry, University of California, Riverside, 900 University Avenue, Riverside, CA 92521–0403, USA. [6]Department of Chemistry and Biochemistry, University of California, Los Angeles, 607 Charles E. Young Drive East, Los Angeles, CA 90095–1569, USA. [7]Summit, NJ, USA.

Editor's Note: For more information on the investigation, please see the summary and full report of the committee, which are available at www.lucent.com/news_events/researchreview.html.

The Origin of a Most Contentious Rock

IN "METASOMATIC ORIGIN OF QUARTZ-pyroxene rock, Akilia, Greenland and implications for Earth's earliest life" (Reports, 24 May, p. 1448), C. M. Fedo and M. J. Whitehouse conclude that rocks previously interpreted as metamorphosed sedimentary banded iron formation (BIF) and thought to contain the oldest evidence of life are instead highly deformed and metasomatized ultramafic igneous rocks. This conclusion is based, in part, on a comparison of trace element characteristics in the banded quartz-pyroxene rocks and various mafic and ultramafic igneous rocks. Unfortunately, data for only one of the ten banded rocks analyzed are shown in all of their chemical discrimination diagrams (Fig. 3). Although this one sample (AK 38) is consistent with the hypothesis, data for the nine remaining samples are very different and reveal it to be a misleading "proxy for the entire quartz-pyroxene lithology" as stated. Indeed, ratios of Th/Sc, Cr/Th, Cr/Y, and TiO_2/P_2O_5 in the nine samples overlap those reported for the Isua BIF and are distinct from those in ultramafic rocks. It is unlikely that a combination of metasomatic gains and losses could have produced such a match. Given that the origin of banding in these rocks is equivocal and that some elemental data (rare earth element) are incompatible with either an ultramafic or BIF precursor, ratios of the least mobile trace elements would seem to be an appropriate means to constrain protolith identity. This being the case, the original BIF interpretation should be considered viable until more definitive evidence (perhaps oxygen isotopes) becomes available.

J. MICHAEL PALIN
Department of Geology, University of Otago, Post Office Box 56, Leith Street, Dunedin 9001, New Zealand. E-mail: michael.palin@stonebow.otago.ac.nz

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The rocks under discussion.

Response

OUR STUDY INTEGRATED (i) DETAILED structural observations, (ii) mineralogy, (iii) geochemistry, and (iv) regional geologic events for interpreting rocks that have been repeatedly deformed and metasomatized over approximately 2 billion years. Palin questions our proposed metasomatized ultramafic igneous origin for quartz-pyroxene rocks on Akilia solely on the basis of assessment of a few geochemical ratios that overlap the field of Isua banded iron formation (BIF) (see Fig. 3A), suggesting that they support previous claims (*1*, *2*) for a BIF protolith.

We are not surprised by the broad compositional range in Cr/Th versus Th/Sc or TiO_2 versus P_2O_5 for the quartz-pyroxene rocks and pyroxenite boudins, considering that metasomatic quartz (and likely carbonate) has diluted their original ultramafic composition by in excess of 90% in some samples. In addition to overlapping the field of