

CRYOGENICS

from

Janis

The New Super Tran-B Continuous Flow CRYOSTAT

- Highest Efficiency
- Lowest Ultimate Temperature
- Simplest Operating Turnkey System



Applications in Superconducting Transitions, U.H.V., Device and Wafer Characterization studies. Also DLTS, X-ray, Mössbauer, FT-IR and Visible Spectroscopy.

JANIS RESEARCH CO., INC.

2 Jewel Drive, P.O. Box 696
Wilmington, MA 01887 U.S.A.

Tel: (617) 657-8750

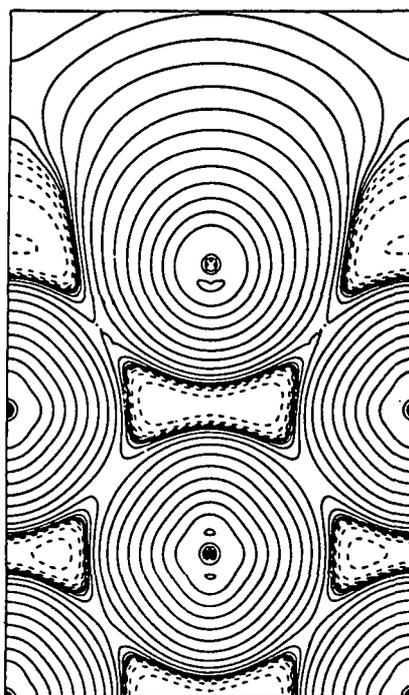
Fax: (617) 658-0349

Telex: 200079

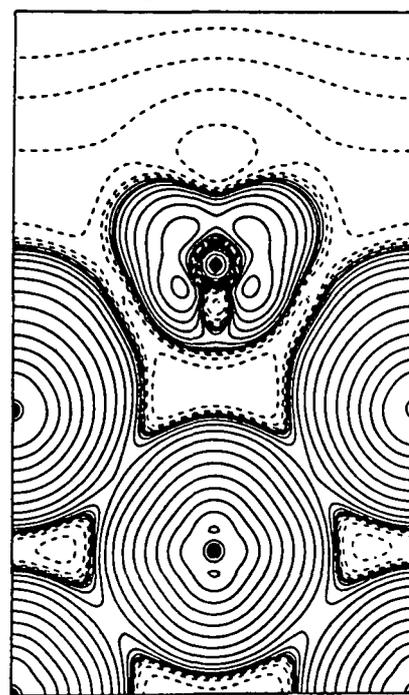
Editor's Choice

Figures appearing in the "EDITOR'S CHOICE" are those arising from materials research which strike the editor's fancy as being aesthetically appealing and eye-catching. No further criteria are applied and none should be assumed. When taken out of context, such figures often evoke images beyond and unrelated to the original meaning. Submissions of candidate figures are welcome and should include a complete source citation, a photocopy of the report in which it appears (or will appear), and a reproduction-quality original drawing or photograph of the figure in question.

Fe(001)



Ag/Fe(001)



Those of us with vivid imaginations or who are closet entomologists see the insect-like apparition. Of course the rest of us see contour plots of the positive (solid lines) and negative (dashed lines) spin density at the (001) surface of iron with (right) and without (left) a substituted silver atom replacing a top-layer iron atom. Using the full-potential linearized-augmented-plane-wave method, authors S. Ohnishi, M. Weinert, and A.J. Freeman (*Phys. Rev. B* **30** [1984] p. 36) show that the presence of the silver causes the spin density in the vacuum to switch from positive to negative. EDITOR'S CHOICE readers can find additional details in an article by the same authors plus C.L. Fu in *Hyperfine Interactions* **33** (1987) p. 53. The plane of atoms represented above is a (110) plane which is perpendicular to the (001) surface thus including the body-centered iron atom and giving the negative-spin-density-filled interstices their bow-tie shape.

Those who want the best in analytical microscopy choose the VG HB501...

Whether you are interested in catalysis or grain boundary segregation, concentration profiles in semiconductors or in polymers, the HB501 Field Emission Source Scanning Transmission Electron Microscope will give you the

highest quality chemical and structural information from the smallest possible volumes of material – limited only by the specimen itself.

And windowless EDX detectors can be used routinely because the vacuum is so good – but then, what else would you expect from VG?

...why not join them?



VG MICROSCOPES
analytical electron microscopy

A VG INSTRUMENTS GROUP COMPANY

VG Microscopes Limited, Imberhorne Lane, East Grinstead, West Sussex, RH19 1UB, ENGLAND. Tel. 0342 27211.
USA. VG Instruments Inc., Commerce Center, Cherry Hill Park, Beverly, Massachusetts 01923. Tel. (617) 777 8034.
WEST GERMANY. VG Instruments GmbH, Gustav-Nachtigal-Strasse 4, 6200, Wiesbaden. Tel. (6121) 713030.
FRANCE. VG Instruments, 3 Rue du Marechal de Lattre de Tassigny, 78150 Le Chesnay. Tel. (1) 3955 5120.
ITALY. VG Instruments Limited, Viale Dell'Assunta 101, 20063 Cernusco Sul Naviglio, Milano. Tel. (2) 924 8808.
THE NETHERLANDS. VG Instruments bv, PO Box 171, 1380 AD, Weesp. Tel. (2940) 80484.
CHINA. VG Instruments, Room 7059, Xi Yuan Hotel, Erligou, Xijiao, Beijing. Tel. 890721 Ext 759.
HONG KONG. VG Instruments Asia Limited, GPO Box 217, Hong Kong. Tel. (5) 8613651.
JAPAN. Marubun Corporation, 8-1 Nihombashi Odemmacho, Chuo-ku, Tokyo 103. Tel. (3) 639 9861.