

## **IN SITU SYNCHROTRON RADIATION RESEARCH IN MATERIALS SCIENCE**

- 13** *In Situ* Synchrotron Radiation Research in Materials Science  
P.A. Montano and H. Oyanagi, Guest Editors
- 21** Real-Time X-Ray Scattering Studies of Surface Structure During Metalorganic Chemical Vapor Deposition of GaN  
G.B. Stephenson, J.A. Eastman, O. Auciello, A. Munkholm, C. Thompson, P.H. Fuoss, P. Fini, S.P. DenBaars, and J.S. Speck
- 26** *In Situ* X-Ray Diffraction and XAFS Studies of Expanded Fluid Selenium Using Synchrotron Radiation  
K. Tamura and M. Inui
- 32** *In Situ* EXAFS Study of the Photoexcited State and Defects in Chalcogenide Glasses  
A.V. Kolobov, H. Oyanagi, and K. Tanaka
- 36** Applications of Synchrotron Surface X-Ray Scattering Studies of Electrochemical Interfaces  
H. You and Z. Nagy

- 41** *In Situ* Magnetic-Circular-X-Ray-Dichroism Measurements: An Epitaxial Fe Wedge on Cu(100)  
M.E. Dávila, D. Arvanitis, J.H. Dunn, N. Mårtensson, P. Srivastava, F. Wilhelm, and K. Baberschke
- 46** Infrared Reflection Absorption Spectroscopy of Selective Etching and Decomposition Stimulated by Synchrotron Radiation  
T. Urisu

## **SPECIAL FEATURE**

- 50** John Bardeen and the BCS Theory of Superconductivity  
L. Hoddeson

## **MRS NEWS**

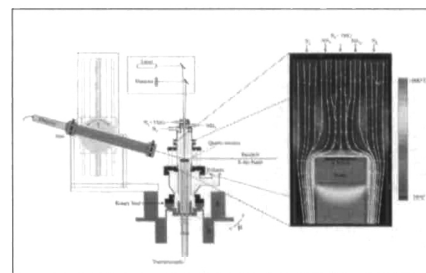
- 56** Gibala Leads Executive Committee in 1999
- 57** *MRS Bulletin* Volume Organizers Guide Technical Theme Topics for 1999
- 58** Bristowe, Grier, Ponce, and Williams to Chair 1999 MRS Fall Meeting

## **ABSTRACTS**

- 60** Abstracts for March 1999 *Journal of Materials Research*

## **DEPARTMENTS**

- 3** Letter from the President
- 3** Letters to the Editor
- 5** Research/Researchers
- 11** Washington News
- 12** Resources
- 40** Advertisers in This Issue
- 72** Calendar
- 75** Classified
- 80** Postterminaries



**ON THE COVER:** Schematic of a metal-organic chemical vapor deposition (MOCVD) chamber mounted on a z-axis diffractometer showing four angular motions:  $\mu$  and  $\theta$  control the incident beam grazing angle and azimuth;  $\gamma$  and  $\delta$  control the scattered beam grazing angle and azimuth. **Inset:** Typical flow patterns and temperatures in the GaN MOCVD chamber (calculations of R. Venkataramani and K.F. Jensen, unpublished). The reactants enter through concentric tubes at the top. The gallium source flow (trimethylgallium in  $N_2$ ) is surrounded by the nitrogen source flow ( $NH_3$  in  $N_2$ ) in the middle. The outer  $N_2$  flow is a window purge to reduce deposition on the quartz window. For more information, see the article beginning on page 21.

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