

Journal of Materials Research

500 Pages of Articles Scheduled for November 1990 Issue (Vol. 5, No. 11)

Diamond Articles

(110)-Oriented Diamond Films Synthesized by Microwave Chemical-Vapor Deposition, by Koji Kobashi, Koza Nishimura, Koichi Miyata, Kazuo Kumagai, and Akimitsu Nakaue.

A Spectroscopic Study of Optical Centres in Diamond Grown by Microwave-Assisted Chemical Vapor Deposition, by A.T. Collins, M. Kamo, and Y. Sato.

Activity of Tungsten and Rhenium Filaments in CH₄/H₂ and C₂H₂/H₂ Mixtures: Importance for Diamond CVD, by M. Sommer and F.W. Smith.

Adhesion and Tribological Properties of Diamond Films on Various Substrates, by Cheng-Tzu Kuo, Tyan-Ywan Yen, Ting-Ho Huang, and S.E. Hsu.

Adsorption and Bonding of C₁H_x and C₂H_y on Unreconstructed Diamond(111). Dependence on Coverage and Coadsorbed Hydrogen, by S.P. Mehandru and Alfred B. Anderson.

Analytical and Mechanical Evaluation of Diamond Films on Silicon, by D.E. Peebles and L.E. Pope.

Chemical Structure and Physical Properties of Diamond-Like Amorphous Carbon Films Prepared by Magnetron Sputtering, by N.-H. Cho, K.M. Krishnan, D.K. Veirs, M.D. Rubin, C.B. Hopper, and B. Bhushan.

Comparative Fractography of Chemical Vapor and Combustion Deposited Diamond Films, by H.A. Hoff, A.A. Morrish, J.E. Butler, and B.B. Rath.

CVD Diamond Deposition Processes Investigation: CARS Diagnostics/Modeling, by Stephen O. Hay, Ward C. Roman, and Meredith B. Colket III.

Diamond Polytypes and Their Vibrational Spectra, by K.E. Spear, W.B. White, and A.W. Phelps.

Dislocations, Twins and Grain Boundaries in CVD Diamond Thin Films: Atomic Structure and Properties by J. Narayan.

Diamond-like Carbon Films Prepared by rf Substrate Biasing in an ECR Discharge, by W.J. Varhue and P.W. Pastel.

Electron Microscopic Characterization of Diamond Films Grown on Si by Bias-Controlled Chemical Vapor Deposition, by G.-H.M. Ma, Y.H. Lee, and J.T. Glass.

Growth of Diamond Films and Characterization by Raman, Scanning Electron Microscopy, and X-Ray Photoelectron

The November 1990 issue of *Journal of Materials Research* will contain nearly 500 pages of articles, making it the largest *JMR* issue published to date. A special section of more than 40 papers dealing with diamond and diamond-like materials makes up more than half of the issue—the result of an overwhelming response to a Call for Papers issued in February. The papers focus on the interdisciplinary aspects of research in this field, such as diamond and diamond-like materials synthesis, growth, characterization, and processing.

In addition to the papers dealing with diamond and diamond-like materials, many other articles on advanced materials will be included in the November 1990 issue of *JMR*. These articles deal with superconductors, metals, intermetallic alloys, ceramics, composites, and polymers.

Spectroscopy, by S.C. Sharma, M. Green, R.C. Hyer, C.A. Dark, T.D. Black, A.R. Chourasia, D.R. Chopra, and K.K. Mishra.

Growth of Textured Diamond Films on Si(100) by C₂H₂/O₂ Flame Method, by J. Hwang, K. Zhang, B.S. Kwak, A. Erbil, and Z.C. Feng.

High Growth Rate Diamond Synthesis in a Large Area Atmospheric Pressure Inductively Coupled Plasma, by M.A. Cappelli, T. Owano, and C.H. Kruger.

Hypothetical Superhard Carbon Metal, by M.A. Tamor and K.C. Hass.

Infrared Optical Properties of CVD Diamond Films, by X.H. Wang, L. Pilione, W. Zhu, W. Yarbrough, W. Drawl, and R. Messier.

Isotopic Effects in a-C:(H/D) Films Deposited from Methane/Hydrogen Plasmas, by D. Boutard and W. Möller.

Laser Plasma Diamond, by F. Davanloo, E.M. Juengerman, D.R. Jander, T.J. Lee, and C.B. Collins.

Lineshape Analysis of the Raman Spectrum of Diamond Films Grown by Hot-Filament and Microwave-Plasma Chemical Vapor Deposition, by Lawrence H. Robins, Edward N. Farabaugh, and Albert Feldman.

Low Friction Coatings of Diamond-Like Carbon with Silicon Prepared by Plasma-Assisted Chemical Vapor Deposition, by K. Oguri and T. Arai.

Measurement of Crystalline Strain and Orientation in Diamond Films Grown by Chemical Vapor Deposition, by E.D. Specht, R.E. Clausing, and L. Heatherly.

Mechanism of Diamond Film Growth by Hot-Filament CVD: Carbon-13 Studies, by C. Judith Chu, Mark P. D'Evelyn, Robert H. Hauge, and John L. Margrave.

Methyl vs. Acetylene as Diamond Growth Species, by Stephen J. Harris and L. Robbin Martin.

Optical and Mechanical Properties of D.C. Sputtered Carbon Films, by M. Rubin, C.B. Hopper, N.-H. Cho, and B. Bhushan.

Optical and Tribological Properties of Heat Treated Diamond-like Carbon, by A. Grill, V. Patel, and B.S. Meyerson.

Oxidation of Diamond Films Synthesized by Hot Filament Assisted Chemical Vapor Deposition, by K. Tankala, T. DebRoy, and M. Alam.

Photoluminescence Studies of Polycrystalline Diamond Films, by J.A. Freitas JR., J.E. Butler, and U. Strom.

Possible Behavior of a Diamond(111) Surface in Methane/Hydrogen Systems, by Steven M. Valone, Mitchell Trkula, and Joseph R. Laia.

Rectification and Internal Photoemission in Metal/CVD Diamond and Metal/CVD Diamond/Silicon Structures, by S.A. Grot, S. Lee, G.Sh. Gildenblat, C.W. Hatfield, C.R. Wronski, A.R. Badzian, T. Badzian, and R. Messier.

Role of Microstructure on the Oxidation Behavior of Microwave Plasma Synthesized Diamond and Diamond-Like Carbon Films, by Rao R. Nimmagadda, A. Joshi, and W.L. Hsu.

Single-Phase Aluminum Nitride Films by dc-Magnetron Sputtering, by J.S. Morgan, W.A. Bryden, T.J. Kistenmacher, S.A. Ecelberger, and T.O. Poehler.

Structural Analysis of Hydrogenated Diamond-like Carbon Films from Electron Energy Loss Spectroscopy, by Yaxin Wang, Hsiung Chen, R.W. Hoffman, and John C. Angus.

Structure and Bonding Studies of the C:N Thin Films Produced by RF Sputtering Method, by C.J. Torng, J.M. Sivertsen, J.H. Judy, and C. Chang.

The Effect of Environment on the Tribological Properties of Polycrystalline Diamond Films, by M.N. Gardos and B.L. Soriano.

The Effect of Oxygen in Diamond Deposition by Microwave Plasma Enhanced Chemical Vapor Deposition, by Y. Liou, A. Inspektor, R. Weimer, D. Knight, and R. Messier.

The Effects of UV Laser Irradiation on the Filament-Assisted Deposition of Diamond, by F.G. Celii, H.H. Nelson, and P.E. Pehrsson.

The Nucleation and Morphology of Diamond Crystals and Films Synthesized by the Combustion Flame Technique, by K.V. Ravi, C.A. Koch, H.S. Hu, and A. Joshi.

Thermogravimetric Analysis of the Oxidation of CVD Diamond Films, by Curtis E. Johnson, Michael A.S. Hasting, and Wayne A. Weimer.

Tribological Characteristics of Diamond-like Films Deposited with an Arc-Discharge Method, by J.-P. Hirvonen, R. Lappalainen, J. Koskinen, A. Anttila, T.R. Jervis, and M. Trkula.

Ultralow-Load Indentation Hardness and Modulus of Diamond Films Deposited by Hot-Filament-Assisted CVD, by C.P. Beetz Jr., C.V. Cooper, and T.A. Perry.

Wear Property and Structure of Nitrogen Implanted Glassy Carbon, by M. Iwaki, K. Takahashi, and A. Sekiguchi.

Articles

Application of Chemical Vapor Deposited Ytria for the Protection of Silicon Carbide Fibers in a SiC/Ni₃Al Composite, by D.J. Larkin, L.V. Interrante, and A. Bose.

Atomic Structure of a $\Sigma 21$ Grain Boundary, by William Krakow.

Effect of Grain Size on Superplastic Behavior of Al₂O₃/YTZ, by T.G. Nieh, J. Wadsworth.

Fabrication of Textured YBa₂Cu₃O_x Superconductor Using Directional Growth, by Kwangsoo No, Dae-Shik Chung, and Jae-Myung Kim.

Finite Temperature Structure and Thermodynamics of the Au $\Sigma 5(001)$ Twist Boundary, by R. Najafabadi, D.J. Srolovitz, and R. LeSar.

Fractal Analysis of Erosion Surfaces, by Sreeram Srinivasan, John C. Russ, and Ronald O. Scattergood.

Hydrothermal Crystallization Kinetics of M-ZrO₂ and t-ZrO₂, by Raymond P. Denkwicz Jr., Kevor S. TenHuisen, and James H. Adair.

Inviscid Melt Spinning: As Spun Crystalline Alumina Fibers, by Frederick T. Wallenberger, N.E. Weston, and S.A. Dunn.

Ion Beam Etching of Polytetrafluoroethylene, by L. Torrissi and G. Foti.

Microstructure of YBa₂Cu₃O_x Thin Films Deposited by Laser Evaporation, by O. Eibl and B. Roas.

Radiation-Induced Defects and Amorphization in Zircon, by W.J. Weber.

Synthesis and Characterization of Layered Bismuth Vanadates, by K.B.R. Varma, G.N. Subbanna, T.N. Guru Row, and C.N.R. Rao.

The Control of Gas Phase Kinetics to Maximize Densification during Chemical Vapor Infiltration, by Brian W. Sheldon.

The Formation of Single-Phase Equiatomic MnBi by Rapid Solidification, by X. Guo, A. Zaluska, Z. Altounian, and J.O. Strom-Olsen.

The Formation of Superconducting Phases in Bi(Pb)-Sr-Ca-Cu Oxide/Ag Microcomposites Produced by Oxidation of Metallic Precursor Alloys, by Wei Gao, R. Parrella, D.A. Rudman, J.B. Vander Sande, and Songcun Li.

Thermal Behavior of Radiation Damage Cascades Via the Binary Collision Approximation: Comparison with Molecular Dynamics Results, by M. Caro, A. Ardelea, and A. Caro.

For further information on any of these articles or to subscribe to *Journal of Materials Research*, please contact the Materials Research Society, 9800 McKnight Road, Pittsburgh, PA 15237; telephone (412) 367-3003; telefax (412) 367-4373.

Send manuscripts for consideration in JMR to any one of the following:

- Dr. Walter L. Brown, Editor-in-Chief, Journal of Materials Research, Materials Research Society, 9800 McKnight Road, Pittsburgh, PA 15237; telephone (412) 367-9111; fax (412) 367-4373.
- Dr. Werner Lutze, Kernforschungszentrum Karlsruhe, Postfach 3640, D-7500 Karlsruhe, West Germany; telephone 49-7247-824457; fax 49-7247-823927.
- Prof. Shigeyuki Sōmiya, Nishi Tokyo University, 3-7-19 Seijo, Setagaya, Tokyo 157, Japan; telephone 81-3-417-2866; fax 81-3-415-6619.