Ion Beam Synthesis and Processing of Advanced Materials
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CONTENTS

Preface .................................................................................................................................................. xiii

Materials Research Society Symposium Proceedings ........................................................................ iv

FUNDAMENTALS AND DEFECT KINETICS I

* Improving the Understanding of Ion-Beam-Induced Defect Formation and Evolution by Atomistic Computer Simulations ................................................................. O2.1
  Matthias Posselt

* Understanding Ion Beam Synthesis of Nanostructures: Modeling and Atomistic Simulations ................................................................. O2.3
  M. Strobel, K.-H. Heinig, and W. Möller

* Interactions of Point Defects and Impurities With Open Volume Defects in Silicon ........................ O2.4

FUNDAMENTALS AND DEFECT KINETICS II

Coordination Structure of Implanted Manganese Ions in Silica Glass ................................. O3.1
  Kohei Fukumi, Akiyoshi Chayhara, Hiroyuki Kageyama, Kohei Kadono, Naoyuki Kitamura, Hiroshi Mizoguchi, Yuji Horino, and Masaki Makihara

MATERIALS WITH NOVEL ELECTRICAL, OPTICAL, AND MAGNETIC PROPERTIES

* Ion Implanted Er and Tb in SiO₂ for Electroluminescence in MOS Diodes ......................................................... O4.1
  Ch. Buchal, S. Coffa, S. Wang, and R. Carius

Optical and Structural Changes of Fe Implanted Sapphire ........................................ O4.2

*Invited Paper
**MeV Ion Implantation Doping of Diamond** ................................................................. O4.3
S. Prawer, D.N. Jamieson, K.W. Nugent, R. Walker,
C. Uzan-Saguy, and R. Kalish

**Enhancement of Porosity and Surface Roughness of Cured Phenolic Resin by Ion Implantation** ................................................................. O4.8
R.L. Zimmerman, D. Ila, C.C. Smith, A.L. Evelyn,
D.B. Poker, and D.K. Hensley

**POSTER SESSION**

**Secondary Ion Mass Spectrometry With Gas Cluster Ion Beams** .......................... O5.1
Noritaki Toyoda, Jiro Matsuo, Takaaki Aoki, Shunichi Chiba,
Isao Yamada, David B. Fenner, and Richard Torti

**Simulations and Argon-Cluster-Ion Smoothing of Surfaces** ............................ O5.2
D.B. Fenner, D.W. Dean, V. DiFilippo, L.P. Allen,
J. Hautala, and P.B. Mirkarimi

**Atomistic Simulations of the Ostwald Ripening of Si Nanoparticles Ion Beam Synthesized in SiO₂** ................................................................. O5.7
C. Bonafós, M. Carrada, B. Colombeau, A. Altibelli,
G. Ben Assayag, B. Garrido, M. López, A. Perez-Rodriguez,
J.R. Morante, and A. Claverie

**Properties of Gallium Disorder and Gold Implants in GaN** ............................... O5.9
W. Jiang, W.J. Weber, S. Thevuthasan,
and V. Shutthanandan

**Dynamical X-ray Diffraction Analysis of Solid Phase Epitaxy Growth of Si₁₋ₓCₓ Heterostructures** ................................................................. O5.10
J. Rodriguez-Viejo and Zakia el-Felk

**Characterization of Thin Layers of Metal Clusters Embedded in Silica Glass Formed by High Dose Ion Implantation** ..................................... O5.11
P.S. Chung, S.P. Wong, W.Y. Cheung, N. Ke, W.K. Lee,
and C.W. Chan

**Nanoparticles of Metallic Cobalt and Nickel Prepared by Ion Implantation Into SiO₂** ........................................................................ O5.12
O. Cintora-González, C. Estournés, D. Muller,
M. Richard-Plouet, A. Traverse, J.L. Guille, and J.J. Grob

* Invited Paper
Modification of the Electronic Properties of a-Si\textsubscript{x}C\textsubscript{1-x}H by Fe\textsuperscript{+} Ion Implantation

T. Tsvetkova, S. Balabanov, B. Amov, Ch. Angelov, J. Zuk, D. Maczka, G.J. Adriaenssens, and K. Iakoubovskii

Gold Nanoclusters Formed by Ion-Implantation Into Bi\textsubscript{2}TeO\textsubscript{5}


Post Implantation Treatment of Silicon Carbide-Based Sensors for Hydrogen Detection Properties Enhancement


Chemical Effects In Ion Implantation Induced Quantum Well Intermixing

Todd W. Simpson, Paul G. Piva, and Ian V. Mitchell

Modification of Carbon Related Films With Energy Beams

Hiroshi Naramoto, Yonghua Xu, Kazumasa Narumi, Xiaodong Zhu, Jiri Vacik, Shunya Yamamoto, and Kiyoshi Miyashita

Synthesis of Continuous SmSi\textsubscript{2} Layers on Si by Samarium Ion Implantation Using a Metal Vapor Vacuum Arc Ion Source

X.Q. Cheng, H.N. Zhu, and B.X. Liu

ION BEAM INDUCED SLICING AND FOCUSED ION BEAM APPLICATIONS

* Optimization of the Ion-Cut Process in Si and SiC

O.W. Holland, D.K. Thomas, and R.B. Gregory

Ion Beam Slicing of Single Crystal Oxide Thin Films

S. Thevuthasan, V. Shuttanandan, W. Jiang, and W.J. Weber

Buried Oxide Precipitates in a Si Wafer Due to He Ion Implantation and High-Temperature Oxidation

Sadao Nakashima, Jyoji Nakata, Junzou Hayashi, and Kazuo Imai

Co-Implantation and the Role of Implant Damage in the Thermal Stability of Implanted Helium in Indium Phosphide

Todd W. Simpson and Ian V. Mitchell

*Invited Paper
Cu Gettering in Si Cavities Observed by Positron Annihilation
Doppler Broadening ........................................................................................................ O6.5
H. Schut, A. van Veen, and S.W.H. Eijt

Effects of Ga-Irradiation on Properties of Materials Processed by
a Focused Ion Beam (FIB) ................................................................................................ O6.6
H.D. Wanzenboeck, H. Langfischer, A. Lugstein,
E. Bertagnolli, U. Grabner, P. Pongratz, B. Basnar,
J. Smoliner, and E. Gornik

METASTABLE PHASES, PLASTIC FLOW, AND PATTERNING OF SURFACES

Spontaneous Formation of Nanometer-Scale Self-Organized Structures in Ag-Cu Alloys Under Irradiation ................................................................. O7.1
Raúl A. Enrique and Pascal Bellon

Spontaneous Crystalline Multilayer Formation in Ni Implanted Al at 100 K ......................................................................................................................... O7.2
Alexandre Cuenat, Aicha Hessler-Wyser, Max Döbeli,
and Rolf Gotthardt

SURFACE MODIFICATION, SUCH AS HARDNESS AND TEXTURE

* Ion Beam Assisted Texture Evolution During Thin Film Deposition of Metal Nitrides ............................................................................................................. O9.1
Bernd Stritzker, Jürgen W. Gerlach, Stephan Six,
and Bernd Rauschenbach

* Relating Nanostructures to Mechanical Properties in Ion-Implanted Materials ................................................................................................................. O9.3
David M. Follstaedt, James A. Knapp, Samuel M. Myers,
and Gary A. Petersen

Ar Cluster Ion Bombardment Effects on Semiconductor Surfaces .................................................. O9.4
Toshio Seki, Kazumichi Tsumura, Takaaki Aoki,
Jiro Matsuo, Gikan H. Takaoka, and Isao Yamada

Time-Resolved X-ray Scattering Study of Co Surface Evolution During Low-Energy Ion Irradiation ........................................................................... O9.5
O. Malis, J.M. Pomeroy, R.L. Headrick, and J.D. Brock

*Invited Paper
ION BEAM SYNTHESIS OF
NANOSTRUCTURES AND
THIN LAYERS I

Synthesis of Spatially Controlled Nanostructures by Ion Implantation in V-Grooves on (001) Si Surfaces
Torsten Müller, Karl-Heinz Heinig, Bernd Schmidt, Arndt Mücklich, and Wolfhard Möller

POSTER SESSION

Synthesis of B-C-N Thin Films by Ion-Beam-Assisted Deposition and Their Mechanical Properties
Akihito Matsumuro, Yoshimasa Kato, and Hidenobu Ohta

Deposition of Diamond-Like Carbon Films Using Plasma Based Ion Implantation With Bipolar Pulses
S. Miyagawa and Y. Miyagawa

Effect of Substrate Materials on Mechanical Properties and Microstructure of Carbon Nitride Films Prepared by Ion-Beam-Assisted Deposition
Hidenobu Ohta, Akihito Matsumuro, and Yutaka Takahashi

Studies on Titanium Nitride Coatings—Effect of Ion Bombardment
K. Deenamma Vargheese and G. Mohan Rao

Mechanical Properties of AlN Thin Films Prepared by Ion Beam Assisted Deposition
Shuichi Miyabe, Toshiyuki Okawa, Nobuaki Kitazawa, Yoshihisa Watanabe, and Yoshikazu Nakamura

Modeling for the Diamond-Like Carbon Film Synthesis by Plasma Based Ion Implantation
Yoshiko Miyagawa, Flyura Djurabekova, and Soji Miyagawa

Metal-Alloy Nanocluster Formation in Silica Glass by Sequential Ion Implantation

Effect of Iodine and Strontium Ion Implantation on the Microstructure of Cubic Zirconia
Sha Zhu, Lumin Wang, Shixin Wang, and Rodney C. Ewing
ION BEAM SYNTHESIS OF
NANOSTRUCTURES AND
THIN LAYERS II

* Nanophase Composites Produced by Ion Implantation:
  Properties, Problems, and Potential .................................................. O12.1/R7.1
  A. Meldrum, L.A. Boatner, C.W. White,
  and R.F. Haglund, Jr.

Ion Beam Enhanced Formation and Luminescence of Si Nanoclusters from e-SiO_x ................................................................. O12.3/R7.3
  Yohan Sun, Se-Young Seo, Jung H. Shin, T.G. Kim,
  C.N. Whang, and J.H. Song

ION-SOLID INTERACTIONS FOR
OPTOELECTRONICS/PHOTONICS AND
MICROELECTRONIC MATERIALS

Synthesis of III-N_x-V_y Thin Films by N Ion Implantation .......................... O13.3/R8.3
  K.M. Yu, W. Walukiewicz, W. Shan, J. Wu, J.W. Beeman,
  J.W. Ager III, E.E. Haller, and M.C. Ridgway

Doping of GaN by Ion Implantation ......................................................... O13.4/R8.4
  Eduardo J. Alves, C. Liu, Maria F. da Silva, José C. Soares,
  Rosário Correia, and Teresa Monteiro

Correlation Between Structural and Optical Properties of Si Nanocrystals in SiO_2: Model for the Visible Light Emission ......................... O13.5/R8.5
  M. López, B. Garrido, O. González, C. García,
  A. Pérez-Rodríguez, J.R. Morante, C. Bonafos, M. Carrada,
  R.J. Rodríguez, and J. Montserrat

SEMICONDUCTORS AND
ELECTRONIC MATERIALS

A Damage Model for Disordered Structures in Ion Irradiated Silicon .................................................. O14.1/R9.1
  Ju-Yin Cheng and J. Murray Gibson

Determination of the Distribution of Ion Implantation Boron in Silicon .................................................. O14.3/R9.3
  Te-Sheng Wang, A.G. Cullis, E.J.H. Collart, A.J. Murrell,
  and M.A. Foad

*Invited Paper
Crystallization of Isolated Amorphous Zones in Semiconductor Materials

Eric P. Hollar, Ian M. Robertson, and Igor Jencic

Investigation of Irradiation Damage in Silicon Dioxide Polymorphs Using Cathodoluminescence Microanalysis

Marion A. Stevens-Kalceff

*Inverse Ostwald Ripening and Self-Organization of Nanoclusters Due to Ion Irradiation

K.-H. Heinig, B. Schmidt, M. Strobel, and H. Bernas

Impact of Boron and Gallium on Defects Production in Silicon

Aurangzeb Khan, Nethaji Dharmarasu, Masafumi Yamaguchi, Kenji Araki, Tuong K. Vu, Tatsuo Saga, Takao Abe, Osamu Annzawa, M. Imaizumi, and Sumio Matsuda

Post Annealing Studies of C60 Ion Implanted Thin Films

Nethaji Dharmarasu, Kannan L. Narayanan, Nabuaki Kojima, Yoshio Ohshita, and Masafumi Yamaguchi

Unusual Change in Columnar Defect Morphology in YBCO Upon Annealing

Y. Yan, M.A. Kirk, A. Petrean, and L. Paulius

Ion-Implantation Generated Nanovoids in Si and MgO Monitored by High Resolution Positron Beam Analysis

S.W.H. Eijt, C.V. Falub, A. van Veen, H. Schut, P.E. Mijnarends, M.A. van Huis, and A.V. Fedorov

Author Index

Subject Index
Symposium O, "Ion Beam Synthesis and Processing of Advanced Materials," was held November 27-29 at the 2000 MRS Fall Meeting in Boston, Massachusetts. 116 papers were presented in fourteen sessions including two poster sessions. The sessions were well attended and the discussions were lively.

The presentations during this three-day symposium emphasize the broad scientific and technological interest in ion-beam applications to synthesis and processing of advanced materials. A significant portion of the symposium addressed ion-beam processing and synthesis at the nano-scale, including work on nanocrystals, quantum dots, quantum wells, nanotubes, and self-organized structures, as well as heterostructures and other thin films. Attendees heard discussions on defect kinetics, growth, ion erosion, surface smoothing, texturing and pattern formation, cluster-beam assisted processing, processing and synthesis for mechanical properties, and ion slicing/smart cut processing. Materials ranged over metals, semiconductors, dielectrics, and organics. Materials modification from the nano-scale to the meso-scale to the macro-scale was discussed. Technological applications ranged over thin-film transistors, microelectronics, optical materials, high-temperature superconductors, sensors, diamond-like coatings, hard coatings, and magnetic recording media. Several papers discussed modeling and analysis of these processes using techniques including molecular dynamic simulations. Three joint sessions were held with Symposium R, "Microstructural Processes in Irradiated Materials."


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