

MATERIALS RESEARCH SOCIETY
SYMPOSIUM PROCEEDINGS VOLUME 904

Mechanisms of Mechanical Deformation in Brittle Materials

November 28 – December 2, 2005
Boston, Massachusetts, USA

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571
www.proceedings.com

ISBN: 1-55899-859-4

Some format issues inherent in the e-media version may also appear in this print version.

CAMBRIDGE UNIVERSITY PRESS
Cambridge, New York, Melbourne, Madrid, Cape Town,
Singapore, São Paulo, Delhi, Tokyo, Mexico City

Cambridge University Press
32 Avenue of the Americas, New York, NY 10013-2473, USA

www.cambridge.org

Materials Research Society
506 Keystone Drive, Warrendale, PA 15086
<http://www.mrs.org>

©Materials Research Society 2028

This publication is in copyright. Subject to statutory exception
and to the provisions of relevant collective licensing agreements,
no reproduction of any part may take place without the written
permission of Cambridge University Press.

First published 2028

CODEN: MRSPDH

ISBN: 3/77: ; /: 7; /6

Cambridge University Press has no responsibility for the persistence or
accuracy of URLs for external or third-part Internet Web sites referred to
in this publication and does not guarantee that any content on such Web sites
is, or will remain, accurate or appropriate.

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

- 1 Insight Into the Deformation Mechanisms Under a Sharp Contact Loading in Glass by Atomic Force Microscopy**
ROUXEL, Tanguy
- 7 A Mother-Daughter Mechanism of Mode I Cracks: Supersonic Crack Motion Along Interfaces of Dissimilar Materials**
Buehler, Markus;Gao, Huajian
- 13 Unit Shearing Events in Plasticity of Amorphous Silicon**
Argon, Ali;Demkowicz, Michael
- 19 Fractal Dimension for Ceramic Fracture Surface**
Bielecki, Jerzy;Kotowski, Piotr
- 25 Indentation Crystallization and Phase Transformation of Amorphous Germanium**
Chaudhri, M.M.;Khayyat, M.M.;Le Bourhis, E.;Patriarche, G.
- 31 Rate Sensitivity and Size Effects in Plasma-Enhanced Chemical Vapor Deposited Silicon Oxide Films**
Cao, Zhiqiang;Zhang, Xin
- 37 The Role of Multiple Polytypes in Determining the Catastrophic Failure of Boron Carbide at High Shock Velocities**
Chhowalla, Manish;Fanchini, Giovanni;McCauley, James;Niesz, Dale
- 43 Deformation Mechanisms in Refractory Rare-Earth Phosphates**
Hay, Randall
- 48 Multi-Paradigm Multi-Scale Modeling of Dynamical Crack Propagation in Silicon Using the ReaxFF Reactive Force Field**
Buehler, Markus;Goddard III, William;van Duin, Adri
- 54 Preparation and Nanoindenting Mechanical Analyses of Porous SiO₂ Low-Dielectric-Constant Films**
Chang, Shou-Yi;Huang, Yi-Chung;Yang, Bo-Kang
- 60 Static Microindentation and Displacement-Sensitive Indentation Tests on Undoped GaAs**
Bradby, Jodie;Pirouz, Pirouz;Wang, Shanling;Zhang, Ming
- 66 Deviation of the Mechanical Response of Wall-Patterned (001) GaAs Surface: A Central-Plastic-Zone Criterion**
Le Bourhis, E.;Patriarche, G.