

MATERIALS RESEARCH SOCIETY
SYMPOSIUM PROCEEDINGS VOLUME 1048

Bulk Metallic Glasses – 2007

November 26-30, 2007
Boston, Massachusetts, USA

Printed from e-media with permission by:

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

ISBN: 978-1-60560-843-3

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

Copyright (2008) by the Materials Research Society.
All rights reserved.

For permission requests, please contact the Materials Research Society at the address below.

Materials Research Society
Proceedings
506 Keystone Dr.
Warrendale, PA 15086
Phone: 724-779-3004 x 531
Fax: 724-779-4396
eproceedings@mrs.org

TABLE OF CONTENTS

Theory of Large-Scale Plastic Deformation in Amorphous Materials: A Progress Report	1
<i>J. S. Langer</i>	
Correlation Between Thermodynamic and Kinetic Properties of Glass-Forming Liquids	7
<i>O. N. Senkov, D. B. Miracle</i>	
Microscale Thermoplastic Forming of Bulk Metallic Glasses: Numerical Simulation and Experiments	16
<i>D. Henann, L. Anand</i>	
Point Defects, Recovery Kinetics and Ordering in Irradiated Bulk Metallic Glasses	21
<i>Y. Petrusenko, A. Bakai, V. Borysenko, D. Barankov, O. Astakhov, M. P. Macht</i>	
Nanometer-scale Structural Relaxation in Zr-based Bulk Metallic Glass	27
<i>J. Hwang, H. Cao, P. M. Voyles</i>	
Processing Map for Zr-based In-situ β Phase Composites	33
<i>S. Y. Lee, J. J. Z. Li, J. Y. Suh, W. K. Rhim, W. L. Johnson, E. Ustundag</i>	
Computational Generation of Disordered Structures of Al-12%Si. An ab initio Approach	44
<i>J. A. Diaz-Celaya, R. M. Valladares, A. A. Valladares</i>	
Fabrication of Pd_xNi_yP_{100-x-y} Metallic Glass Film by Electroless Alloy Plating and its Catalyst Activity	50
<i>Y. Imamura, M. Sone, A. Shibata, C. Ishiyama, Y. Higo</i>	
Molecular Dynamics Simulations of Glassforming Network Fluids	56
<i>K. Binder, J. Horbach, M. Hawlitzky</i>	
Fracture Toughness Study on Zr-based Bulk Metallic Glasses	65
<i>J. Y. Sun, M. L. Lind, C. P. Kim, R. D. Conner, W. L. Johnson</i>	
An Analysis of Thermophysical and Mechanical Properties of Glass-Forming Alloys	71
<i>L. Battezzati, D. Baldissin, M. Baricco, T. A. Baser, D. Firrao, P. Matteis, G. M. Mortarino</i>	
Change in Activation Volume for Plastic Deformation of Zr-based Bulk Metallic Glass following Annealing	78
<i>J. B. Puthoff, D. S. Stone, H. Cao, P. M. Voyles</i>	
Geometry-sensitive Plasticity of a Monolithic Bulk Metallic Glass	84
<i>W. F. Wu, Y. Li</i>	
Preparation of Zr-based Metallic Glass Wire for Biomedical Application	89
<i>T. Nagase, K. Kinoshita, Y. Umakoshi</i>	
Influence of Co Addition on Magnetic Properties and Glass Formation of Fe-based Amorphous Alloys	95
<i>R. Piccin, P. Tiberto, N. Lupu, H. Chiriac, M. Baricco</i>	
Free Volume Relaxation Process in Zr₅₀Cu₄₀Al₁₀ Bulk Metallic Glass Studied by Positron Annihilation Techniques	101
<i>A. Ishii, F. Hori, A. Iwase, Y. Yokoyama, T. J. Konno</i>	
Volume and Enthalpy Relaxation in Bulk Metallic Glasses	107
<i>O. Haruyama</i>	
Glass Formation Dependence on Casting Atmosphere in a Zr-Al-Ni-Cu-Pd Alloy System	111
<i>A. D. Setyawan, H. Kato, J. Saida, A. Inoue</i>	

Phase Stability of Crystalline and Amorphous Phases and Formation of Nanostructure in Zr-Pd and Zr-Pt Alloys Under Electron Irradiation	117
<i>T. Umakoshi, T. Nagase, T. Hosokawa</i>	
Stability of the Pd-Co-Ni-Cu-P Metallic Glasses	123
<i>D. Fukamaki, T. Takeuchi, M. Hasegawa, K. Soda, H. Sato, U. Mizutani</i>	
Structural Evaluation in $Zr_{15}Al_5Ni_{57}Y_{23}$ bulk Metallic Glass Under High Pressure	130
<i>G. Li, Y. Gao, T. Xu, Q. Jing, J. Liu, R. Liu</i>	
Experimental Observations of the Failure Mechanisms in a Bulk Metallic Glass Composite	136
<i>H. Wang, A. Bastawros, S. B. Biner</i>	
Author Index	