11:15 AM 11.8
HARDNESS AND ABRASION RESISTANCE OF NANOCRYSTALLINE NICKEL ALLOYS NEAR THE HALF-PITCH BREAKDOWN REGIME. C.A. Schul and T.G. Nieh, Material Science and Technology Division, Lawrence Livermore National Laboratory.

11:30 AM 11.9
HYBRID NYLON-6/SILICA NANOCOMPOSITES WITH IMPROVED MECHANICAL PROPERTIES. M.J.L. Greiner, C.R. van Zyl, and H. Verweij, Faculty of Chemical Technology and MESA Research Institute, University of Twente, Enschede, THE NETHERLANDS.

SESSION 12: FRACTURE AND MECHANICAL PROPERTIES - II

Chairs: Lawrence Kubaczek and Hans-Eckhardt Schaefer
Monday Afternoon, December 2, 2002
Room 312 (Hynes)

1:30 PM #12.1
NANOSTRUCTURED MATERIALS AND THE SIZE DEPENDENCE OF PROPERTIES. Suhri Suresh, Massachusetts Institute of Technology, Dept of Materials Science and Engineering, Cambridge, MA.

2:00 PM #12.2
FATIGUE AND FATIGUE BEHAVIOR OF NANOSTRUCTURED NICKEL. T.A. Venkatesh and S. Suresh, Dept of Materials Science and Engineering, MIT, Cambridge, MA.

2:15 PM #12.3
MECHANICS OF NANOSTRUCTURES. Red Ruff, Northwestern University, Evanston, IL.

2:30 PM #12.4
THE DEPENDENCE OF INDENTATION CRACKING IN SILICON CARBIDE ON INDENTATION SPACING. R. Sreedhar-Nour, L. Tsukahara, and M. Mann, GE Global Research Center, Niskayuna, NY.

2:45 PM #12.5
INFLUENCE ON AN ELECTROCHEMICALLY GENERATED NANOTOPOGRAPHY ON WEAR, CORROSION, AND FATIGUE OF AUSTENITIC STAINLESS STEELS. Robin Blacher, Bin Tikhovski, Anna Rumiewicz, and Alfons Fischer, Werkstofftechnik, Universitat Essen, Essen, GERMANY.

3:00 PM BREAK

3:30 PM #12.6
PLASTICITY IN NANOMATERIALS. Amiya K. Mukherjee, University of California, Dept of Chemical Engineering & Materials Science, Davis, CA.

4:00 PM #12.7
IN-SITU OBSERVATIONS OF THE DEFORMATION OF ELECTRODEPOSITED NANOCRYSTALLINE NICKEL. K.S. Kumar, Brown University, Division of Engineering, Providence, RI. M.F. Chisholm, J.A. Hurley, Oak Ridge National Laboratory, Oak Ridge, TN; and S. Suresh, Massachusetts Institute of Technology, Dept of Materials Science and Engineering, Cambridge, MA.

4:15 PM #12.8
MICROSTRUCTURE AND MECHANICAL PROPERTIES OF COPPER-304 STAINLESS STEEL MULTILAYERS. X. Zhang, A. Misra, H. Kung, J.D. Embury, and M. Nastasi, Materials Science and Technology Division, Los Alamos National Laboratory, Los Alamos, NM.

4:30 PM #12.9

SESSION 13: POSTER SESSION

Monday Evening, December 2, 2002
8:00 PM
Exhibition Hall D (Hynes)

B.1
PROPERTIES OF HIGH-STRENGTH NANOCRYSTALLINE FeCo

B. 2 SYNTHESIS OF TITANIA COATED ALUMINA PARTICLES BY A HYBRID SOL-GEL METHOD. A. Schmidt, Goshen College, Dept of Chemistry, Goshen, IN; S.B. Majumder, P.S. Delal, and R.S. Kumar, Univ. of Puerto Rico, Dept of Physics, San Juan, PR; and D.C. Agrawal, Indian Institute of Technology, Materials Science Program, Kanpur, INDIA.

B. 3 WAVE INDUCED NANOSTRUCTURES. A. ten Bosch, CNRS, Laboratoire de Physique de la Matiere Condensee, Nice, FRANCE; E. Delahaye, CEMEF, Ecole des Mines de Paris; and Sophin Antipolis, FRANCE.

B. 4 HYDROGEN STABILIZATION OF [111] NANODIAMOND. Amanda Barraud, Sabby Russo, Ian Stokel, Dept of Applied Physics, RMIT University, VIC, AUSTRALIA; and Nigel Marks, Dept of Applied Physics, School of Physics, University of Sydney, NSW, AUSTRALIA.

B. 5 PREDICTING THE MORPHOLOGY AND MECHANICAL PROPERTIES OF DH/BLOCK/NANO-ROD COMPOSITES. Zhenyu Shi, Gwain G. Buxton, and Anna C. Balaz, Chemical Engineering Department, University of Pittsburgh, Pittsburgh, PA.

B. 6 CONTROLLED MORPHOLOGY AND CHARACTERIZATION OF NANOPARTICLES AND CONDUCTING SINGLE CRYSTAL FILMS. Anna Godfrey, Norma Alcantar, Delphine Gourdon, and Jacob Israelievich, University of California, Dept of Chemical Engineering and Dept of Materials Science, Santa Barbara, CA.

B. 7 SYNTHESIS OF NANOCLAY/EPOXY COMPOSITES WITH A THREE-ROLLED MILL MACHINE. Anna Yarvin, Jondro L. Alot, and Ian M. Daniel, Center for Intelligent Processing of Composites, Northwestern University, Evanston, IL.

B. 8 THE GROWTH OF HOLLOW CARBON FIBRES USING A PURE COPPER CATALYST. Benjamin Farmer, Derek Holmes, Luc Vandeperre, Robert Stearn and William Clegg, University of Cambridge, Ceramics Laboratory, Department of Materials Science and Metallurgy, Cambridge, UNITED KINGDOM.

B. 9 STRUCTURAL CHARACTERISTICS OF ULTRATHIN SINGLE-WALL CARBON NANOTUBES. Changyong Xiong, Jinyi Lin, Department of Physics, National University of Singapore, SINGAPORE; Xiongwei Sun, Dachun Zhang, School of Electric and Electronic Engineering, Nanyang Technological University, Singapore, SINGAPORE; and Jikong Feng, Department of Chemistry, Jinan University, Changchun, P.R. CHINA.

B. 10 ELECTROSPINNING POLYSIYLENE FIBERS: THE EFFECT OF MOLECULAR WEIGHT ON SURFACE TEXTURE AND MORPHOLOGY. Cheryl L. Caster, Jean Stephens, Silke Megelkus, John F. Rubalt, University of Delaware, Dept of Materials Science and Engineering, Newk, DE; and Bruce Chase, Central Research and Development, Dupont, Wilmington, DE.

B. 11 PREPARATION OF NANO-SCALE NITRIDE METAL POWDER BY SELF-REGULATED REDUCTION VIA REACTIVE MICHELLES AS TEMPLET. Chien-Liang Lee, Chi-Chao Wan, National Tsing Hua Univ, Dept of Chemical Engineering, Hsinchu, TAIWAN.

B. 12 USING GRAPHITE NANOFIBERS AND NANOTUBES AS CATALYST SUPPORT MEDIA. Chris Maccotta R. Terry, and K. Baker, Cyclic Materials Ltd., Holliston, MA.

B. 13 CHARACTERIZATION OF MECHANICAL DEFORMATION OF NANO SCALE VOLUMES. Christopher R. Perrey, William Mock, C. Barry Carter, and William W. Gerberich, Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, MN.

B. 14 INTERACTION OF CARBON NANOTUBES WITH LIQUID POLYMERS. D. Danilov, P. Kehlins, GM, Ajiyana, MSE Department and S. Nayak, Physics, Applied Physics and Astronomy Department, Renesselaer Polytechnic Institute, Troy, NY.

B. 15 METALLIZED OPTICAL FIBER PREPARED BY MAGNETRON SPUTTERING. D. Deligiazi and K.-Y. Wang, Intelcor, Georgetown, ON, CANADA.

B. 16 SYNTHESIS AND CHARACTERIZATION OF METAL-CERAMIC THIN FILM NANOCOMPOSITES WITH IMPROVED MECHANICAL PROPERTIES. D. Kumar, N. Sudhir, S. Yarmolenko, and J. Sankar, Center for Advanced Materials and Smart Structures Department of Mechanical Engineering, North Carolina A&T State University, Greensboro, NC; J. Narayan, A. Tiwari, H. Zhou and G. Duscher, Center for Advanced Materials and Smart Structures, Department of Materials Science and Engineering, North Carolina State University, Raleigh, NC; S.J. Pennycuick and A. Lupini, Solid State Division, Oak Ridge National Laboratory, Oak Ridge, TN.

B. 17 Abstract Withdrawn

B. 18 MULTISCALE MODELING OF NONLINEAR RESPONSES IN NACRE, A MODEL BIO-NANOCOMPOSITE. Dinesh R. Katti, Kishan K. Doshi, Shashikanth Man Pradhan, Anandharam Bune, North Dakota State University, Department of Civil Engineering, Fargo, ND; Hanson Feng, and Mehmet Sarikaya, University of Washington, Materials Science and Engineering, Seattle, WA.

B. 19 PLASMA DEPOSITION OF ULTRATHIN POLYMER FILMS ON CARBON NANOTUBES. Donghi Shy, Tony He, Mark Schulz, Wim van Ooij, and David Must, Department of Materials Science and Engineering, University of Cincinnati, Cincinnati, OH; Jie Lian and Lumin Wang, Department of Nuclear Engineering and Radiological Science, University of Michigan, Ann Arbor, MI.

B. 20 GROWTH AND APPLICATIONS OF CARBON NANOTUBES ON A TUNGSTEN SUBSTRATE. Erik Einarsson, Jian Jiang, Portland State Univ, Dept of Physics, Portland, OR; George Gill, Portland State Univ, Dept of Chemistry, Portland, OR; Jeremy Petro and Logan Love, Portland State Univ, Dept of Physics, Portland, OR.

B. 21 TAILORING THE SIZE DISTRIBUTION OF Al-Cu NANOCLUSTERS IN Al VIA HE IMPREGNATION. G. Felixmann, Dep. de Fisica, Estadistica e Matematica UNLJUI, Iju, RS, BRAZIL; P.P.P. Fichtner, Escuela de Ingenieria UFRGS, Porto Allegre, RS, BRAZIL; and P.C. Zavalloni, Instituto de Fisica, Porto Allegre, RS, BRAZIL.

B. 22 ARC PLASMA SYNTHESIS OF NANOCRUCIFIED FE POWDER. Gil-Geon Lee and Sung-Duck Kim, Pukyong National University, Div of Materials Science and Engineering, Busan, KOREA.

B. 23 SIZE REDUCTION OF CLAY PARTICLES IN NANO-METER DIMENSIONS. Gogonur Muni, Qinguo Fan, Samuel C. Ughedje, and Isabelle M. Eff, Dept of Textile Sciences, Univ of Massachusetts Dartmouth, North Dartmouth, MA.

B. 24 STRUCTURAL CERAMIC NANOCOMPOSITES SYNTHESIZED THROUGH IN SITU REACTIONS. Guo-Jun Zhang, Synergy Ceramics Laboratory, Fine Ceramics Research Association, Nagoya, JAPAN; Jin-Feng Yang, Synergy Materials Research Center, National Institute of Advanced Industrial Science and Technology, Nagoya, JAPAN; Motokito Ando, Synergy Ceramics Laboratory, Fine Ceramics Research Association, Nagoya, JAPAN; and Takashi Ohji, Synergy Materials Research Center, National Institute of Advanced Industrial Science and Technology, Nagoya, JAPAN.

B. 25 DISLOCATION EMISSION FROM NANOIZED GRAIN BOUNDARIES AT AN ATOMIC PICTURE. H. Von Stryggehoven, P.M. Derle, and A. Hansson, Paul Scherrer Inst, Villigen, SWITZERLAND.

B. 26 TENSILE PROPERTIES OF NANOCRYSTALLINE Ni A
SESSION 14: FRACTURE AND MECHANICAL PROPERTIES - III
Chair: Ganesh Skandan
Tuesday Morning, December 3, 2002
Room 312 (Hynes)

8:45 AM H.1
THE RELEVANCE OF RESIDUAL STRESS DISTRIBUTIONS IN NANOSTRUCTURED MATERIALS. Thomas Tsuchihashi, Igor Zakharov, LEO Tolman, Hongtao Piao, P. M. R. Smith, T. N. Rhonda, and D. J. Curtiss, Northwestern University, Evanston, IL.

9:00 AM H.2
HIGH-TENSILE DUCTILITY IN NANOSTRUCTURED MATERIALS. Yinmin Wang, Mengwei Chen, and Evan Ma, Department of Materials Science and Engineering, University of Michigan, Ann Arbor, MI.

9:15 AM H.3

9:30 AM H.4
PLASTIC DEFORMATION OF NANOCRYSTALLINE NICKEL AND NICKEL ALLOYS. Beresheet Efrati, Materials Science and Engineering Department, University of Florida, Gainesville, FL.

9:45 AM H.5
CHARACTERIZATION OF NANOPARTICLE FILMS AND STRUCTURES PRODUCED BY HYPERSONIC FLAMMA PARTICLE DEPOSITION. Christopher R. Perrey, Ryan Thompson, C. Barry Carter, Univ of Minnesota, Dept of Chemical Engineering and Materials Science, Minneapolis, MN.

10:00 AM BREAK

SESSION 15: POLYMER-BASED NANOSTRUCTURED MATERIALS
Chair: Trang Q. Pham
Tuesday Morning, December 3, 2002
Room 312 (Hynes)

10:30 AM L.1
A STRUCTURE-PROPERTY STUDY OF A NANOCOMPOSITE POLY(METHYL METHACRYLATE) BONE CEMENT. Mary Turell, Department of Orthopedic Surgery, Brigham & Women's Hospital, Harvard Medical School, Boston, MA.

10:45 AM L.2
A THEORY OF SEBIMM TO OPTIMIZE THE MECHANICAL PROPERTIES OF THIN POLYMER FILMS. Christopher Harrison, Christopher M. Stafford, Almagir Karim, and Eric J. Amis, Polymers Division, National Institute of Standards and Technology, Gaithersburg, MD.

11:00 AM L.3
BIODEGRADABLE POLYESTER-LAYERED SILICATE NANOCOMPOSITES. Pradyut Maiti, Emmanuel P. Gennadios, Cornell University, Materials Science and Engineering, Ithaca, NY, and Carl A. Bant, Cornell University, Department of Food Science, Ithaca, NY.

11:15 AM L.4
DISPERSION CHARACTERIZATION OF METAL-OXIDE NANOPISTERS IN POLYMERIC COATINGS. Li-pian Sung, M. B. Baghsh-Abirani, Stephanie Scierka, Building Materials Division, NIST, Gaithersburg, MD, and Derek L. Ho, NIST Center for Neutron Research, Gaithersburg, MD.

11:30 AM L.5
EFFECTS OF DISPERSION, ALIGNMENT AND PERCENT LOAD ON PROPERTIES OF NANOPISTERS IN POLYCARBONATE. Elizabeth A. Wex, J. B. Wright, Michael Sennett, John Song, David Ziegler, U.S. Army Soldier and Biological Chemical Command, Natick Soldier Center, Natick, MA, Z. F. Ren, W. Z. Li, and J. G. Wen, Department of Physics, Boston College, Chestnut Hill, MA.

11:45 AM L.6

SESSION 16: NANOCOMPOSITES: SYNTHESIS AND PROPERTIES
Chair: Horst W. Hahn
Tuesday Afternoon, December 3, 2002
Room 312 (Hynes)

1:30 PM M.1
INFLUENCE OF FILLER-FILLER AND FILLER-MATRIX INTERACTIONS ON THE MECHANICAL BEHAVIOR OF POLYMER NANOPORECOMPOSITES. C. Daniel, E. Chabert, J.Y. Couilla, L. Chomet, GEMPP, USR 5310 INSA/CNRS,
11:15 AM 16.4
ON SYNTHESIS AND PROPERTIES OF NANOCOMPOSITES.
Thomas Taktakios, James D. Idol, Richard Remfry, Richard L.
Lehman, Thomas J. Nosker, Department of Ceramics and Materials
Engineering, Rutgers University, Piscataway, NJ; Ilhan A. Alay
Daniel M. Dubal, Department of Chemical Engineering, Princeton
University, Princeton, NJ; and Kenneth E. Van Ness, Department of
Physics and Engineering, Washington and Lee University, Lexington,
VA.

2:45 PM 16.6
PREPARATION AND CHARACTERIZATION OF ALUMINA
BASED TiN_x ANO COMPOSITES. Mats Carlsson, Mats Johnson
Magnus Nygren, Department of Inorganic Chemistry, Stockholm
University, Stockholm, SWEDEN; and Eric Larsson, Institute for
Surface Chemistry, Stockholm, SWEDEN.

3:00 PM BREAK

3:30 PM 16.7
REINFORCEMENT/MATRIX INTERFACE IN OXIDE
NANOCOMPOSITES FOR ENHANCED FRACTURE
TOUGHNESS. B.R. Okereke, R.W. Carpick, R.F. Cooper, W.J.
Dragan, and D.S. Stone, Program in Mechanics and Materials, NSF
Materials Research Science and Engineering Center for Nano-
structured Materials, University of Wisconsin-Madison, Madison, WI.

4:45 PM 16.12
EFFECT OF NANOPARTICLE POLYMER INTERFACE AND
MICROSTRUCTURAL CHARACTERISTICS ON THE
MECHANICAL BEHAVIOR OF A COMPOSITE. Rajesh Raghavan. Craig
Curet, Massachusetts Institute of Technology, Dept. of
Materials Science and Engineering, Cambridge, MA.
Institute of Machine Reliability, National Academy of Sciences, Minsk, BELARUS.

17.13 PROCEEDING OF SWNT/EPOXY STRUCTURAL NANOCOMPOSITES. Margaret Roylance, Thomas Tiano, Brigit Fay, Foster-Miller Inc., Watertown, MA, and Ken McElrath, CNL, Houston, TX.

17.14 THE EFFECT OF ADAMANTANE UNIT ON THE CHARACTERISTICS OF POLYMERS CONTAINING THIS UNIT. Masami Inoue, Hiroshi Yamazawa, ASET, Yokohama, Kanagawa, JAPAN; Taiji Ishizone and Hironori Tajima, Tokyo Institute of Technology, Tokyo, JAPAN.

17.15 FORMATION AND ENTRAINMENT OF NOBLE METAL CLUSTERS IN SILICA AEROGEL MONOLITHS BY GAMMA-RADIOLYSIS. Jared P. Hund, Massimo F. Bertino, University of Missouri-Rolla, Dept of Physics, Rolla, MO; Guohui Zhang, Chulka Sitomsis-Leventis, Nicholas Leventis, University of Missouri-Rolla, Dept of Chemistry, Rolla, MO; and Akira T. Tsuchihira, University of Missouri-Rolla, Dept of Nuclear Engineering, Rolla, MO.

17.16 SYNTHESIS OF ZEOLITE Y NANOCRYSTS FROM CLEAR SOLUTIONS. Yunnui Shen, Michael P. Manning, Juliusz Waszywoda, and Albert Sacco Jr., Center for Advanced Microgravity Materials Processing, Chemical Engineering Department, Northeastern University, Boston, MA.

17.17 IN SITU PREPARATION OF POLYMER-COATED AND FUNCTIONALIZED CERAMIC NANO PARTICLES. Michael Schlehen, SunTech GmbH & Co KG, Darmstadt, GERMANY; Horst Hahn, Institute of Material Science, Darmstadt University of Technology, GERMANY.

17.18 GRAIN BOUNDARY STRUCTURE IN NANOCRYSTALLINE MATERIALS. Boris Demyanov and Mikhail Starostenkov, Altai State Technical Univ, Dept of General Physics, Barnaul, RUSSIA.

17.19 YAG FIBER DERIVED FROM YAG NANOPOWDER/POLYMER PRECURSORS. Min Kim, Jose Azurdia, Julien Muechel, and Richard M. Laine, University of Michigan, Ann Arbor, MI.

17.20 MOLECULAR DYNAMICS SIMULATIONS OF NANOCOMPOSITES FORMED BY INTERMETALLIC DISPERSOIDS OF La2 and Ti ALUMINUM MATRIX. Min Namkung, Burt Winoifer, NASA Langley Research Center, Hampton, VA, and Sun Mok Pak, Kangwon National University, Department of Physics, Chuncheon, KOREA.

17.21 MULTIPLE SOURCE FABRICATION OF ELECTROSPUN FIBER MATS. Ming Wei, Nandita Viriyabanthorn, Julie Chen, Joyce Mend, and Churong Sung, University of Massachusetts-Lowell, Lowell, MA.

17.22 THEORETICAL STUDIES OF THE THERMAL CONDUCTIVITY OF Si NANO W IRES. Natalio Mingo, Liu Yang, Elcor Corporation, NASA-Ames Research Center, Moffett Field, CA; Deys Li and A. Majumdar, University of California at Berkeley, Dept. of Mechanical Engineering, Berkeley, CA.

17.23 CONTROL OF THE MORPHOLOGY AND ORIENTATION OF ELECTROSPUN NANO-FIBERS. Naiun Banyan, Julie Chen, Sarmira Farhoodnagh, and Kari Stevens, University of Massachusetts, Department of Mechanical Engineering, Lowell, MA.

17.24 BURSTING AND SPITTING COLLOIDAL DROPLETS. Nicola Ting, Danielle Sanzone, Darren Link and Dave Weitz, DEAS, Department of Physics, Harvard University, Cambridge MA.

17.25 CONDENSATION OF CARBON VAPOUR IN THE MICROWAVE OVEN. Osman V. Khiritsin, Israel Nieto Lopez, Facultad de Ciencias Fisicas y Mathematicas, UCN; Jair A. Aguilar, Ubaldo Ortiz, and Moises Hinojosa Rivera, Facultad de Ingenieria Mecanica y Electrica.

17.26 THE STRUCTURE AND PROPERTIES INVESTIGATION OF THE IMMISIBLE POLYOLETHENE BLEND. J.S. Potemjnik and O.V. Prudnikova, Inst. of Biochemical Physics, Russian Academy of Sciences, Moscow, RUSSIA.


17.28 Abstract Withdrawn

17.29 Abstract Withdrawn

17.30 NON-OXIDATION OF ULTRATHIN FILMS OF SILICATE NANOPARTICLES AND POLYOLEFENES: DEPOSITION PARAMETERS AND MECHANICAL PROPERTIES. Rigoberto Advincula, Xiaowen Fan, Mickyong Park, and Bob Brooks, University of Houston, Department of Chemistry, Houston, TX; and Department of Chemistry, University of Alabama at Birmingham, Birmingham, AL.

17.31 CONSTRUCTION OF NANO-STEPED GLASS SURFACES BY USING VISCOS FLOW OF OXIDE GLASS FILMS DEPOSITED ON ULTRASMOOTH SAPPHIRE SURFACES. S. Akiba, S. Sato, A. Matsuoka, T. Yamamoto, and M. Yoshimoto, Tokyo Inst of Tech, Materials and Structures Laboratory, Yokohama, JAPAN.

SESSION 18: MODELING, SIMULATIONS, AND INTERFACES

Chairs: Chandna Shekar Pande and Sabina Suresh

Wednesday Morning, December 4, 2002
Room 312 (Hynes)

8:30 AM 18.1 ATOMISTIC INFORMED CONTINUUM MODEL OF POLYMER-BASED NANOCOMPOSITES. Chetan Pieu, Alireza Savastani, and Murat Ocukal, Rensselaer Polytechnic Institute, Dept of Mechanical Engineering, Troy, NY.

8:45 AM 18.2 COMPUTER SIMULATION OF DISLOCATION PROPAGATION AND INTERACTION IN NANOSTRUCTURED METALLIC MULTILAYERS. Peter M. Anderson and Quisen Li, Ohio State University, Dept. of Materials Science and Engineering, Columbus, OH.

9:00 AM 18.3 CONTINUUM MECHANICS-DISCRETE DEFECT MODELING AND BUBBLE RAFT SIMULATION OF CRACKED SPECIMEN RESPONSE IN NANO SCALE GEOMETRIES. M.J. Sturr, W.J. Dragan, Univ of Wisconsin-Madison, Dept of Engineering Physics, Mechanics and Materials Program, Madison, WI; D.S. Stone, Univ of Wisconsin-Madison, Materials Science and Engineering, Mechanics and Materials Program, Madison, WI; and M. Lopez Garcia, Univ of Puerto Rico-Mayaguez, Dept of Chemical Engineering, Mayaguez, PR.

9:15 AM 18.4 COOPERATIVE PROCESSES DURING PLASTIC DEFORMATION: A MOLECULAR DYNAMICS SIMULATION. A. Haensch, H. Van Swygenhoven, and P.M. Darke, Paul Scherrer Inst, Villigen, SWITZERLAND.

9:30 AM 18.5 DEFORMATION MECHANISM FOR THE CROSSOVER IN HALL-PETCH BEHAVIOR IN NANOCRYSTALLINE MATERIALS BY MOLECULAR-DYNAMICS SIMULATION. Veselin Yarinsky, Dieter Wolf, Simon R. Phillpot, Materials Science Division, Argonne National Laboratory, Argonne, IL; Amiya K. Mukherjee, Department of Chemical Engineering and Materials Science, University of California, Davis, CA; and Herbert Gleiter, Institut fur Nanotechnologie, Forschungszentrum Karlsruhe, Karlsruhe, GERMANY.

9:45 AM 18.6 THE EFFECT OF LENGTH SCALE ON THE DEFORMATION BEHAVIOR OF METALLIC MULTILAYERS-PART II: MODELING. Peter M. Anderson, Ohio State University, Dept.
10:00 AM BREAK

10:30 AM B.7
EFFECTS OF TRIPLE JUNCTIONS ON DEFORMATION
BEHAVIOR OF NANOMATERIALS. Ilya Ovidko, Inst of Problems
of Mechanical Engineering RAS, St. Petersburg, RUSSIA.

10:45 AM B.8
GRAIN BOUNDARY DISSOLUTION IN NANOCRYSTALLINE
GOED. D.L. Medlin, D. Cohen, and G. Lucovsky, Thin Film and
Interface Science Dept., Sandia National Labs, Livermore, CA; S.M.
Folkes, Materials and Process Modeling Dept., Sandia National Labs,
Albuquerque, NM.

11:00 AM B.9
INTERFACE-CONTROLLED CREEP DEFORMATION IN
TWO-PHASE TAI WITH ULTRAFINE LAMELLAR MICRO-
STRUCTURES. Lake Heong, Lawrence Livermore National
Laboratory, Chemistry and Materials Science Directorate, Livermore,
CA.

11:15 AM B.10
ON THE SISK STRENGTH OF NANOSIZED GRAIN
BOUNDARIES. M. Samsar, P.M. Derlet, H. Von Swygenhoven, and
M. Victoria.

11:30 AM B.11
PARALLEL DISLOCATIONS OF DISLOCATIONS IN ULTRATHIN COPPER
FILMS. T. John Balk, Gerhard Dehm, and Eduard Arzt,
Max-Planck-Institut für Metallforschung, Stuttgart, GERMANY.

11:45 AM B.12
THE ROLE OF GRAIN DISSOCIATIONS IN NANOCRYSTALLINE
DEFORMATION. Kryswan Van Vlekh, Sedana Talakta, and Sabra
Suresh, Massachusetts Institute of Technology, Dept of Materials
Science and Engineering, Cambridge, MA.

SESSION 19: CHARACTERIZATION OF
NANOSTRUCTURED MATERIALS
Chair: Gian-Moog Chow
Wednesday Afternoon, December 4, 2002
Room 312 (Hynes)

1:30 PM B19.1
SUPERPLASTICITY OF NANOCRYSTALLINE MATERIALS.
Horst Hahn, and Karsten Ahe, Technische Universität Darmstadt,
Institute for Materials Science, Darmstadt, GERMANY.

2:00 PM B19.2
STRUCTURE AND CHARACTERIZATION OF SOL-GLASS
AND AEROGEL MATERIALS AND OXIDATION PRODUCTS FROM
THE REACTION OF CH3NH2 AND CH33Si(OCH3)3. Thomas M.
Tilleyson and John G. Reynolds, University of California,
Lawrence Livermore National Laboratory, Livermore, CA.

2:15 PM B19.3
STRAIN AND TEXTURE IN EQUAL-CHANNEL ANGULAR
PRESSED ALUMINUM AND NICKEL. Sven C. Vogel, Irene J.
Beyerlein, Mark A. M. Broucke, Donald W. Brown, Carlos Tame, Los
Alamos National Laboratory, Los Alamos, NM; Bjorn Claussen, and
Erwin Ueßling, California Institute of Technology, Pasadena, CA.

2:30 PM B19.4
RED SHIFT TN OPTICAL ABSORPTION TAIL AND
SUPERPARAMAGNETISM OF GAMMA-Fe203 NANOPORENTS
IN A POLYMER MATRIX. John K. Vasilchenko, J.W. Otto, A.
Pothierot, and J.J. Eve, "Department of Physics, Villanova
University, Villanova, PA; "Joint Research Center for the European
Commission, Brussels, BELGIUM.

2:45 PM B19.5
NANOMECHANICAL CHARACTERIZATION ON ZINC AND TIN
OXIDES NANOBILTS. Minshan Zhao, Scott Moo, Univ of
Pittsburgh, Dept of Mechanical Engineering, Pittsburgh, PA; Fenting
Xu, John A. Barnard, Univ of Pittsburgh, Dept of Materials Science
& Engineering, Pittsburgh, PA; and ZhongLian Wang, School of Materials
Science & Engineering, George Institute of Technology, Atlanta, GA.

3:00 PM BREAK

3:30 PM B19.6
ANOMALOUS X-RAY SCATTERING FOR DETERMINATION OF
NANOSTRUCTURED ALLOY FORMATION AND SITE-SPECIFIC
CHEMISTRY OF BRAGG PEAK. C.M. Chow, Dept of Materials
Science, National University of Singapore, SINGAPORE.

4:00 PM B.7
INTERRELATIONSHIP BETWEEN ATOMIC SPECIES, BIAS
VOLTAGE, TEXTURE AND MICROSTRUCTURE OF
NANO-SCALE MULTILAYERED. D.B. Lewis, Q. Luo, Materials
Research Institute, Sheffield Hallam University, Sheffield, UNITED
KINGDOM; Z. Zhao, Department of Engineering Materials, The
University of Sheffield, Sheffield, UNITED KINGDOM; G. Nagai, P.
Hosseini, and W.D. Milne, Materials Research Institute,
Sheffield Hallam University, Sheffield, UNITED KINGDOM.

4:15 PM B.8
CHARACTERIZATION OF LARGE DEFORMATION FIELD IN
ULTRA-FINE GRAINED MACHINING CHIPS. Rene F. Keizer,
Trevin L. Brown, Srinivasa Swaminathan, W. Dale Compton and
Srinivasa Chandrasekar, Center for Materials Processing and
Technology, School of Industrial Engineering, Purdue University, West
Lafayette, IN.

4:30 PM B.9
ATOMIC-RESOLUTION Z-CONE STEM STUDY OF A
HIGH-STRENGTH NANOCRYSTALLINE Mg0.95Zn0.05Al.
Eiji Abe, National Institute for Materials Science, Tsukuba, JAPAN;
Y. Kawamura, Dept of Mechanical Engineering and Materials Science,
Kumamoto University, Kumamoto, JAPAN; A. Isobe, Institute for
Materials Research, Tohoku University, Sendai, JAPAN.

4:45 PM B.10
PLASTICITY OF EPITAXIAL Al THIN FILMS. Gerhard Dehm,
T. John Balk, Max-Planck-Institut für Metallforschung, Stuttgart,
GERMANY; and Beverly J. Insko, Department of Materials,
University of Oxford, UNITED KINGDOM.

SESSION 110: SYNTHESIS OF NANOSTRUCTURED
MATERIALS - I
Chair: Thomas Tkachikos
Thursday Morning, December 5, 2002
Room 312 (Hynes)

8:30 AM I10.1
A LOW-COST MANUFACTURING PROCESS FOR
NANO-STRUCTURED MATERIALS. Srinivasa Swaminathan,
Trevin L. Brown, Srinivasa Chandrasekar, W. Dale Compton,
Alexander H. King, and Kevin P. Tumble, School of Engineering,
Purdue University, West Lafayette, IN.

8:45 AM I10.2
A NOVEL FABRICATION METHOD TO GENERATE LARGE
AREA PERIODIC NANOSTRUCTURES. Woo Lee, Won-Chol Yoo,
Mi-Kyung Jin, and Jin-Kyu Lee, School of Chemistry and Molecular
Engineering, Seoul National University, Seoul, KOREA.

9:00 AM I10.3
FABRICATION OF FERROELECTRIC NANO-STRUCTURES. M.
Alexo, S. Bhattacharyya and U. Goswiek, Max Planck Institute of
Microstructure Physics, Halle, GERMANY.

9:15 AM I10.4
FORMATION, MECHANICAL AND ELECTRICAL PROPERTIES OF
Ni-BASED AMORPHOUS ALLOYS AND THEIR
NANOCRYSTALLINE STRUCTURE: Xiangcheng Sun, Center for
Materials for Information Technology, The University of Alabama,
Tuscaloosa, AL; Tiemian Zhao, Institute of Metal Research, Chinese
Academy of Science, Shenyang, PR. CHINA.

9:30 AM I10.5
GROWTH AND ANOMALOUS LOW-TEMPERATURE
ELECTRICAL CHARACTERISTICS OF NANO-STRUCTURED
NiAl FILMS. Ashokish Tiwari, A. Chag, H. Wang, and J. Narayana,
Department of Materials Science & Engineering, North Carolina State
University, Raleigh, NC.

9:45 AM I10.6
HIGH STRENGTH SILICON DIOXIDE AEROGELS. Benjamin L.
Lawson, Daofeng Zeng, North Carolina State University, Dept of
Mechanical and Aerospace Engineering, Raleigh, NC.

10:00 AM BREAK
SESSION I: SYNTHESIS OF NANOSTRUCTURED MATERIALS - I
Chair: Sadigh Saei and Gennadi Skodan
Thursday Afternoon, December 5, 2002
Room 312 (Hynes)

1:30 PM I11.1
SYNTHESIS AND CONSOLIDATION OF NANOPARTICLES TO PREPARE NANO-COMPONENTS. S. Wang, R. M. S. China, S. C. Kuzy, E. Megen, S. Patil, and S. Sehl, AMPAC and MAAE, University of Central Florida, Orlando, FL.

1:45 PM I11.2
SYNTHESIS OF HIGH ASPECT RATIO Ag/Pt NANO-STRUCTURES WITH THE DEPTH-LYSION MID. C.M. Doolin, M.F. Bertino, University of Missouri-Rolla, Department of Physics; F. Blum, University of Missouri-Rolla, Department of Chemistry; A. Tsukuba, University of Missouri-Rolla, Department of Nuclear Engineering; F. Fransden, University of Missouri-St. Louis, Department of Physics and Astronomy; D. Lahiri, D. D. A. B. Banker, University of Notre Dame, Physics Department; J. Terry, and S. C. Mattheopoulos, Illinois Institute of Technology, Biological, Chemical, and Physical Sciences.

2:00 PM I11.3

2:15 PM I11.4
DEFOMETAT-STRUCTURE RELATIONSHIPS OF CARBON NANOTUBES FILLED THERMOPLASTIC ELASTOMERS. Hilke Kraft, Chisa-Shan Wang, University of Dayton Research Institute, Dayton, OH; Richard A. Van, Ma D. Alexander, Nathan A. Ponce, Heather Bentley, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; Benjamin S. Hain, Igor Siv, Department of Chemistry, State University of New York at Stony Brook, Stony Brook, NY; and Dale W. Schow, Materials Science and Engineering Department, University of Cincinnati, Cincinnati, OH.

2:30 PM I11.5
FABRICATION AND CHARACTERIZATION OF WATER-BORN MULTIWALL NANO-TUBE NANOCOMPOSITE FILMS AND COATINGS. Max D. Alexander, Jr., Chia-Shan Wang, Heather J. Bentley, William C. K. and Helmar Koerner, Air Force Research Laboratory, Wright-Patterson AFB, OH.

10:30 AM I0.7
NANO-STRUCTURED BULK POLYCRYSTALLINE CERAMICS FABRICATED BY RAPID SOLIDIFICATION OF EUTECTIC MELTS. Masahiro Yasukawa, Shunji Araki, and Jose M. Cakkerino-Morino, Tokyo Institute of Technology, Center for Materials Design, Materials and Structural Laboratory, Yokohama, JAPAN.

10:45 AM I0.8
NOVEL ANA-STRUCTURED THIN FILMS. Igor Hazny, Joint Stork Company, “ALAMEN,” Minsk, BELARUS; Alexander Goyalalio, Institute of Physics, recently Hessel-Pokrass, Corvallis, OR; and Vidal C. Avind, MicroPowder Solutions, LLC, Longmont, CO.

11:00 AM I0.9
SYNTHESIS AND CHARACTERIZATION OF NOVEL VANADIUM OXIDE NANOTUBES AND NANOBIBERS. Samuel Latta, Peter Y. Zewah, and M. Stanley Whittingham, State University of New York at Binghamton, Institute for Materials Research and Dept of Chemistry, Binghamton, NY.

11:15 AM I0.10

11:30 AM I0.11
SILVER NANO-DISK SYNTHESIS, CHARACTERIZATION AND SELF-ASSEMBLY. Shai Chen, Zhiyong Fan, and David L. Carroll, Clemson Univ, School of Materials Science and Engineering, Clemson, SC.

11:45 AM I0.12

SESSION II: SYNTHESIS OF NANOSTRUCTURED MATERIALS - II
Chair: Sadigh Saei and Gennadi Skodan Thursday Afternoon, December 5, 2002
Room 312 (Hynes)

1:30 PM II1.1
SYNTHESIS AND CONSOLIDATION OF NANOPARTICLES TO PREPARE NANO-COMPONENTS. S. Wang, R. M. S. China, S. C. Kuzy, E. Megen, S. Patil, and S. Sehl, AMPAC and MAAE, University of Central Florida, Orlando, FL.

1:45 PM II1.2
SYNTHESIS OF HIGH ASPECT RATIO Ag/Pt NANO-STRUCTURES WITH THE DEPTH-LYSION MID. C.M. Doolin, M.F. Bertino, University of Missouri-Rolla, Department of Physics; F. Blum, University of Missouri-Rolla, Department of Chemistry; A. Tsukuba, University of Missouri-Rolla, Department of Nuclear Engineering; F. Fransden, University of Missouri-St. Louis, Department of Physics and Astronomy; D. Lahiri, D. D. A. B. Banker, University of Notre Dame, Physics Department; J. Terry, and S. C. Mattheopoulos, Illinois Institute of Technology, Biological, Chemical, and Physical Sciences.

2:00 PM II1.3

2:15 PM II1.4
DEFOMETAT-STRUCTURE RELATIONSHIPS OF CARBON NANOTUBES FILLED THERMOPLASTIC ELASTOMERS. Hilke Kraft, Chisa-Shan Wang, University of Dayton Research Institute, Dayton, OH; Richard A. Van, Ma D. Alexander, Nathan A. Ponce, Heather Bentley, Air Force Research Laboratory, Wright-Patterson Air Force Base, OH; Benjamin S. Hain, Igor Siv, Department of Chemistry, State University of New York at Stony Brook, Stony Brook, NY; and Dale W. Schow, Materials Science and Engineering Department, University of Cincinnati, Cincinnati, OH.

2:30 PM II1.5
FABRICATION AND CHARACTERIZATION OF WATER-BORN MULTIWALL NANO-TUBE NANOCOMPOSITE FILMS AND COATINGS. Max D. Alexander, Jr., Chia-Shan Wang, Heather J. Bentley, William C. K. and Helmar Koerner, Air Force Research Laboratory, Wright-Patterson AFB, OH.

2:45 PM II1.6
FLUORINATED SINGLE WALL NANOTUBE/POLYETHYLENE COMPOSITES FOR MULTIFUNCTIONAL RADIATION PROTECTION. M. Pupkathama, R. Wilkins, Center for Applied Radiation Research, Prairie View A&M University, Prairie View, TX; M. Schmitt, J. Albert, J. Vett, E. Vett, B. Barre, Department of Mechanical Engineering and Material Science, Rice University, Houston, TX; Fernando Rodrigues-Macias, Department of Chemistry, Rice University, Houston, TX; R. Vajta, C. Green, and C. Condon, Advanced Ceramics Research, Tuscon, AZ.

3:00 PM BREAK

3:30 PM II1.7
GROWTH OF CARBON NANOTUBES ON CATALYST NANOPARTICLES PREPARED BY Ni-ION IMPLANTATION INTO Si AND SiO2. A R. Abudab, M.B. Huang Department of Physics, University of Alabama; S. University of New York, Albany, NY; B. Q, Wei, R. Vajta, and P.M. Ajayan, Department of Materials Science and Engineering, Rensselaer Polytechnic Institute, Troy, NY.

3:45 PM II1.8
LARGE SCALE SYNTHESIS OF NANOTUBES AND NANOBIBERS BY ARC DISCHARGE IN LIQUIDS. Masayoshi Chokowara, Noriaki Sano, Hsuan Wang, Ioannis Aretzis, and Gehan Amin, Cambridge University, Engineering Dept, Cambridge, UNITED KINGDOM.

4:00 PM II1.9
MACROSCOPIC NEAT SINGLE WALL CARBON NANOTUBE FIBERS. Lars M. Ericson, Sivinjan Sameh, Joseph Su, Wen Huang, Han Fan, Rajesh Sastri, Virginio A. Davis, Nicholas Perri-Vazquez, Jason Longoria, Center Kirt, Matteo Pia, Robert H. Hauge, Richard E. Smalley, Center for NanoScience and Technology, Rice University, TX; Junjie Wu, and John E. Fischer, Materials Science & Engineering, University of Pennsylvania, PA.

4:15 PM II1.10
MECHANICAL BEHAVIOR OF CERAMIC COATINGS REINFORCED WITH CARBON NANOTUBES. Zhennian Xin, Brian M., Shetlin, W. A., Curtis, J. Xu, and B. Chen, Division of Engineering, Brown University, Providence, RI; Laura Riester, Metallurgy and Ceramics Division, Oak Ridge National Lab, Oak Ridge, TN.

4:30 PM II1.11
MULTIFUNCTIONAL STRUCTURAL REINFORCEMENT FEATURING CARBON NANOTUBE FILMS. Eric A. Lass, Rensselaer Polytechnic Institute, Dept. of MSE, Troy, NY; Nikhil A. Korok, Rensselaer Polytechnic Institute, Dept. of Aerospace Engineering, Troy, NY; Bingbing Wei and Pulickel M. Ajayan, Rensselaer Polytechnic Institute, Dept. of MSE, Troy, NY.

SESSION II: POSTER SESSION
Thursday Evening, December 5, 2002
8:00 PM
Exhibition Hall D (Hynes)

I12.1
SIMULATION OF CARBON NANOTUBE PULL-OUT WHEN BONDED INTO A POLYMER MATRIX. S.J.V. Frankland, V.M. Harck, ICASE, NASA Langley Research Center, Hampton, VA.

I12.2
TRANSFERRED TO I10.9

I12.3
A STUDY OF HYDROGEN ADSORPTION IN PRETREATED NANOCARBON. Song Moon Lee, Japan Fine Ceramics Center, FCT Lab., Tsukuba, JAPAN; Satoshi Ohara, Kunio Uchida, and Motoo Yumura, Research Center for Advanced Carbon Materials, AIST Tsukuba Central 5, Tsukuba, JAPAN.

I12.4
AN APPROACH TO NANOGRADES THROUGH ANODIC OXIDATION OF SPUTTERED ALUMINUM ON GLASS SURFACE. Satoru Imoto, Song-US, Front, University, and Kenji Wada, National Institute for Materials Science, Advanced Metallurgy Laboratory, Tsukuba, Ibaraki, JAPAN.
112.5 ELECTROSTATIC PRODUCTION OF NANOFIBERS
[ELCTROSPINNING]: WHIPPING INSTABILITY AND THE FIBER DIAMETER. Sergey V. Fridrich1, Jian H. Yu2, Michael P. Brenner3, and Gregory C. Rutledge2,3; Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA; 1Division of Engineering and Applied Sciences, Harvard University, Cambridge, MA.

112.6 Abstract Withdrawn

112.7 DETECTION OF FREE VOLUME IN NANOCRYSTALLINE MATERIALS: EXPERIMENT-VERSUS-COMPUEST SIMULATIONS. Steven Van Peeegem, Danny Segers, Ghent University, Dept of Subatomic and Radiation Physics, Ghent, BELGIUM; Helena Van Swygenhoven, Florian Dalla Torre, PSI, GPA/ASQ, Villigen, SWITZERLAND; and Jan Kurfip, Charles University, Dept of Low Temperature Physics, Prague, CZECH REPUBLIC.

112.8 GROWTH OF CARBON NANOFIBERS ON ELECTROLESS Ni-P ALLOY CATALYST T.K. Tsai, W.L. Liu, S.H. Hsieh, and W.J. Chen, Dept of Materials Science and Engineering, National Taiwan University of Technology, Yunlin, TAIWAN.

112.9 MATERIAL PROPERTIES AND PROCESS COMPATIBILITY OF SPIN-ON NANO-FOAMED POLYBENZOXOLE FOR COPPER DAMASCENE PROCESS. Takashi Enoki, Kenzo Majima, Hideori Saito, and Akifumi Katsumura, Fundamental Research Laboratory, Research Department, Sumitomo Bkedite Co., Ltd., Kanagawa, JAPAN.

112.10 FERROMAGNETIC SHAPE MEMORY OF NANOSTRUCTURE Fe-Pd ALLOY. Teiko Okumura, Toshiaki Kubota, Yasuharu Furuya, Setsuo Kajiwara1 and Takahiko Ikukuchi1, Faculty of Science and Technology, Hirosaki University, Hirosaki, JAPAN. 2National Institute for Materials Science, Tsukuba, JAPAN.

112.11 BONE SHAPE NANOMATERIALS FOR NANOCOMPOSITES APPLICATION. Terry Xu and Rod Rauff, Department of Mechanical Engineering, Northwestern University, Evanston, IL.

112.12 NOVEL NANOSTRUCTURES FOR POTENTIAL INTEGRATION IN NANOCOMPOSITES. Terry Xu and Rod Rauff, Dept of Mechanical Engineering, Northwestern University, Evanston, IL.

112.13 NEGATIVE PHOTORESIST BASED ON AN ACRYLATED POLY(ARYLENE ETHER). Timothy P. Bender, Richard A. Hurt, Marko Salihovic, Paul F. Smid, Nancy Szumlak, Timothy Bulder, and Daniel Fouchet. Xerox Research Centre of Canada, Missisagua, Ontario, CANADA.

112.14 IMPACT MODIFICATION OF NANOCOMPOSITES WITH AN EPOXY MATRIX. K. Isik, U. Yilmazer, and Goksan Buyum, Department of Chemical Engineering, Middle East Technical University, Ankara, TURKEY.

112.15 NANOCOMPOSITES WITH EPOXY MATRIX. Cigdem Basaran, Utku Yilmazer, Goksan Buyum, Middle East Technical University, Dept of Chemical Engineering, Ankara, TURKEY.

112.16 RHEOLOGY & PHASE BEHAVIOR OF SINGLE WALL CARBON NANOTUBES IN STRONG ACIDS. V.A. Davis, L.E. Ericson, R. Spreenjan, R.K. Saini, C. Kittrell, W.E. Billups, R.H. Haage, R.E. Snalley, and M. Pasquale, Rice University, Houston, TX.

112.17 STOCHIOMETRY, CRYSTALLINITY, AND NANO-STRUCTURED MORPHOLOGY OF A FUNCTIONALLY GRADED APAITE ON TS-AV. J.D. Long, Ken Ostrikov, Shuyan Xu, Advanced Materials and Nanosstructures Laboratory, Natural Sciences, Nanyang Technological University, SINGAPORE; and Valeri Ligrishev, School of Electrical and Electronic Engineering, Nanyang Technological University, SINGAPORE.

112.18 HPRESSING OF ALUMINUM-BASED ALLOYS PRODUCED BY MECHANICAL ALLOYING. Vera Lédia Arraes, Kátia Regina Cardoso, IP&D, Universidade do Vale do Paraíba, São José dos Campos, BRAZIL; and Carlos Alberto Cairo, Centro Tecnológico da Aeronáutica, São José dos Campos, BRAZIL.

112.19 INORGANIC-ORGANIC HYBRID MATERIALS: SAXS INVESTIGATIONS OF METAL-OXIDE NANOCRYSTALS IN AN ORGANIC POLYMER MATRIX. Viktoria Torma, Silvia Gross, Nicola Hasing, U. Schubert, Technische Universität Wien, Institut für Materialwissenschaften, Wien, AUSTRIA; Heinrich Peterlik, Universität Wien, Institut für Materialphysik, Wien, AUSTRIA; and Peter Fritsch-Eichert, Bundesanstalt für Materialkunde der Österreichischen Akademie der Wissenschaften & Montanuniversität Leoben, Leoben, AUSTRIA.

112.20 HOT SUPERPLASTIC FORGING OF BULK NANOCRYSTALLINE CERAMICS. Adwaita Chaudhuri, Chiraporn Aeutheltamkul and W. Roger Cram, Rutgers University, Department of Ceramic and Materials Engineering, Piscataway, NJ.

112.21 PREFERRED ORIENTATION IN FIBERS OF HIPCO SINGLE WALL CARBON NANOTUBES FROM DIFFUSE X-RAY SCATTERING. W. Zhou, K.I. Winny, J.E. Fischer, Department of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA; S. Ramesh, K.H. Saini, L.M. Ericson, V.A. Davis, and R.E. Smalley, Center for Nanoscale Science and Technology, Rice University, Houston, TX.

112.22 PREPARATION AND CHARACTERIZATION OF DOUBLE-WALL, FLATTENED MULTIWALL AND COAXIAL-CABLE-LIKE CARBON NANOTUBES. W.Z. Li, J.G. Wen, and Z.F. Ren, Boston College, Physics Department, Chestnut Hill, MA.

112.23 SYNTHESIS OF CARBON NANOTUBE WITH CONTROLLED NANOSTRUCTURE AND APPLICATION. Yacine Hul, Barry Farmer, Richard Vain, Air Force Research Laboratory, MLSP, Wright-Patterson AFB, OH; and Don Shiffer, AFRL/DE, Kirtland AFB, NM.

112.24 POLYMER-ATTACHED FUNCTIONAL INORGANIC-ORGANIC HYBRID NANOCOMPOSITE AEROGELS. Xipeng Liu, Mingjie Wang, and William M. Reihl, Department of Chemistry, Brown University, Providence, RI.

112.25 NANOSCALE MODIFICATION OF THE SURFACE OXIDE OF GALLIUM ANTIMONIDE (GaS) SUBSTRATES FOR DEVICE APPLICATIONS. Xinhong Li, Bongwoo Kang, Maria Osipina, Xin Liu, Changmo Sung, Center for Advanced Materials, University of Massachusetts, Lowell, MA; William Goodhue, Department of Physics and Applied Physics, Photonics Center, University of Massachusetts, Lowell, MA; Lisa P. Allen, Tan G. Tetelman, Epion Corporation, Billerica, MA; and David Blas, Air Force Research Laboratory/SNHC, Hanscom AFB, MA.

112.26 Abstract Withdrawn

112.27 Transferred to 14.2

112.28 NANOCOMPOSITE FIBERS. Prabir Patra, Yong Kim, Armand Lewis, and Steven Warner, University of Massachusetts, Dartmouth, Dept of Textile Sciences, North Dartmouth, MA.

112.29 SIMULATION OF MORPHOLOGY AND SURFACE VIBRATION IN COPPER AND GOLD NANOPARTICLES. Yoshiaki Kogure, Yukie Kuro, Tatsushii Nozaki and Masao Doyma, Teikyo University of Science & Technology, Ueno-ku, Yamanashi, JAPAN.

112.30 EFFECTS OF CLAY DISPERSAL MORPHOLOGY ON MELTS RHEOLOGY OF POLYSTYRENE/LAYERED-SILICATES COMPOSITES. Yuanming Zhang, Jin Zhu, Eric Anton Verpoest, Emmanuel P. Giannelis, and Ulrich B. Wiesner, Department of Materials Science and Engineering, Cornell University, Ithaca, NY.
11:231
COMPRESSIVE BEHAVIOR FOR SURFACE-NANOCRYSTALIZED ALUMINUM-ALLOY. Yaoguang Wei, Chen Zhu, and Shan Tang, LNM, Institute of Mechanics, Chinese Academy of Sciences, Beijing, CHINA.

11:232
SYNTHESIS OF Ag/Pd NANOPIRCLKIES BY CHEMICAL REDUCTION METHOD. Yu-Yu Lin, Huey-Ing Chen, Zhang-Yuan Wang, Yen-I Chou and Zong-Wei Shih, Department of Chemical Engineering, National Cheng Kung University, Tainan, TAIWAN; Chung-Shan Institute Science and Technology.

SESSION 113: SYNTHESIS OF NANOSTRUCTURED MATERIALS - III
Chairs: Hya Ovid'ko and Christopher C. Berndt
Friday Morning, December 6, 2002
Room 312 (Hynes)

8:30 AM *113.1
DEFORMATION MECHANISMS OF CRYOMILLED NANOSTRUCTURED AI ALLOYS. E.J. Lavernia, B. Q. Han, F.A. Mohamed, University of California, Irvine, Department of Chemical Engineering and Materials Science, Irvine, CA; Takao at University of California, Davis, School of Engineering, Davis, CA.

9:00 AM *113.2
NANOSTRUCTURE AND FORMATION MECHANISMS IN CRYOMILLED FCC METALS AND ALLOYS. Fei Zhou, Enrique J. Lavernia, University of California at Davis, Dept of Chemical Engineering and Materials Science, Davis, CA; Steven R. Nut, University of Southern California, Dept of Materials Science and Engineering, Los Angeles, CA.

9:30 AM 113.3
WEAR BEHAVIOR OF CcN BASED HARD PVD COATINGS DEPOSITED BY HIGH POWER PULSED MAGNETRON SPUTTERING AND COMBINED CATHODIC ARC/UNBALANCED MAGNETRON SPUTTERING TECHNIQUES. A.P. Eliaresian, P. Eh, Housepin, W.-D. Mein, Materials Research Institute, Sheffield Hallam University, Sheffield, UNITED KINGDOM; L. Holtman and U. Helmersson, Thin Film Physics Division, Department of Physics and Measurement Technology, Linköping University, Linköping, SWEDEN.

9:45 AM 113.4
PLASTIC RELAXATION MECHANISMS IN SYSTEMS WITH A TWIST-BONDED LAYER. Catherine Priester UMR CNRS 8520/Dépt ISEN, Villeneuve d'Ascq, FRANCE and Genevieve Grenet, LEGM UMR CNRS 5922, Ecole Centrale de Lyon, Ecully, FRANCE.

10:00 AM BREAK

10:30 AM *113.5
POLYMER NANOCOMPOSITES: MANUFACTURING, STRUCTURES, THERMAL AND MECHANICAL PROPERTIES. Parwan Hashin, and Derrick Dean, Department of Mechanical Engineering and Center for Advanced Materials, Tuskegee University, Tuskegee, AL.

11:00 AM - PANEL DISCUSSION
NANOMATERIALS AND NANOTECHNOLOGIES: A GLOBAL VIEW AND HOW TO ENHANCE INTERACTIONS AND APPLICATIONS.