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June 19–24, Maui, Hawaii, USA

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ISOPE-2011

Hyatt Regency Maui Hotel, Hawaii, USA, June 19–24

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Refereed papers from **51** countries in **149** technical general
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ISOPE, P.O. Box 189
Cupertino, CA 95015-0189, USA
Fax: +1-650-254-2038 : meetings@isopec.org; www.isopec.org

ISOPE-2011 Maui Conference

This 21st annual conference features **149 technical and opening general sessions, and 6 keynote presentations** with top experts from industry, academia and government. After **peer review of the manuscripts** selected from **1,350 abstracts**, some **750 papers** will be presented and discussed by researchers, engineers and managers from more than **51 countries**.

The conference proceedings of peer-reviewed papers in PDF files will be available in a set of 4 volumes on CD-ROM (**4,200 pp. est.**) — paginated within each volume — during the conference and later for worldwide post-conference mail order from ISOPE: **ISBN 978-1-880653-96-8; ISSN 1098-6189** and separately (deep) ocean mining symposium proceedings **ISBN 978-1-880653-95-1; ISSN 1946-0066**.

All indexed by Engineering Index (EI).

* Continue to next session.

To view the **full ISOPE-2011 Maui conference and symposia program**, click on www.isopec.org >meetings or www.isopec2011.org

ISOPE NANOTECHNOLOGY SYMPOSIUM

Monday **7. NANOMATERIALS I (V. 4)**
June 20 **10:30** Room 6

Chair: L Kabacoff, Office of Naval Research, USA
Co-Chair: E. Koray Akdogan, Rutgers University, USA

Introductory Remarks: Nanomaterials and Nanotechnology
L Kabacoff, Office of Naval Research and T Tsakalagos, Rutgers Univ, USA

The Nano-Scale Materials Revolution
LC Feldman, Rutgers Univ, USA

Recent Progress in Search for a Refinable Model of a Nanocrystal by Diffraction Methods
B Palosz, E Grzanka, S Stelmakh, Inst of High Pressure Physics UNIPRESS, Poland

Hall-Petch Relationship in Nanocrystalline Materials
CS Pande, Naval Research Lab, USA

New Possibilities of Graphene for Generation of Ultrashort Laser Pulses
ED Obraztsova, MG Rybin, PS Rsakov, II Kondrashov, VR Sorochenko, A.M. Prokhorov General Phys Inst, RAS, Russia

Electron-Irradiation-Induced Phase Change in Nanomaterials
JG Lee, Korea Inst of Materials Science, Korea; CL Chen, Osaka Univ, Japan; CJ Choi, Korea Inst of Materials Science, Korea; M Hiroto, Osaka Univ, Japan

Mechanical Behavior of Y₂O₃-MgO Nanocomposites under Equibiaxial State of Stress by Synchrotron EDXRD “Pseudo-plasticity at Room Temperature?”
T Tsakalagos, EK Akdogan, Rutgers Univ, USA

Fabrication of Submicrometer Spherical Particles of Metal and Ceramics by Pulsed Laser Melting of Nanoparticles in Liquid
N Koshizaki, Nanosystem Research Inst, AIST; Y Ishikawa, Kagawa Univ, Japan

Monday **17. NANOMATERIALS II (V. 4)**
June 20 **14:00** Room 6

Chair: R Ellis-Behnke, MIT, USA & Univ of Hong Kong, China
Co-Chair: LC Feldman, Rutgers Univ, USA

High Strain-rate Scratch Methods for the Nanoscale
AF Jankowski, Texas Tech Univ, USA

High Resolution Chemical and Mechanical Characterization of Nanocomposite Materials
ML Trudeau, L Rodrigue, R Veillette, Hydro-Quebec Research Inst, Canada

Reactivity Measurement with Electrochemical SPM
H Wolfschmidt, U Stimming, Tech Univ München, Germany

Metallic Nanoporous Solids for Device Applications
RN Viswanath, Indira Gandhi Centre for Atomic Energy, India

Flexural Behavior of Corroded RC Members with Patch Repair
Y Kato, Univ of Tokyo, Japan

Processing of Nanostructured c-BN and B₄C
J Doyle, HF Lee, JF Al-Sharab, AA Pelegri, BH Kear, Rutgers Univ; O Voronov, Diamon Materials; SD Tse, Rutgers Univ, USA

Phase-Equilibrium-Dominated Vapor-Liquid-Solid Growth Mechanism
Z Hu, Nanjing Univ, China

Monday **26. NANOMATERIALS III (V. 4)**
 June 20 **16:20** Room 6

Chair: HW Jin, Exxon-Mobil Research & Engineering Co, USA
Co-Chair: M Akinc, Iowa State Univ, USA

Extreme High Temperature Stability and Creep Resistance of a Silicon Nitride Nanocomposite
AK Mukherjee, Univ of California Davis, USA

Application of High-pressure High-temperature Technique to Synthesis of Nanocomposites
B Palosz, S Gierlotka, Inst of High Pressure Physics UNIPRESS, PAS, Poland

The Electrochemical Preparation and Advanced Performance of Composite Coating with Amorphous and Nano-Crystalline
DB Sun, HY Yu, XT Yuan, Univ of Sci & Tech, China

Flame Synthesis of Nanostructured Carbon
N Memon, J Al-Sharab, Y Jaluria, B Kear, M Chhowlla, SD Tse, Rutgers Univ, USA

Nanotechnology in Electrochemical Energy Conversion and Storage
H Wolfschmidt, U Stimming, Tech Univ München, Germany

High-Pressure and High-Temperature X-ray Diffraction Studies of Ceramic Nanocomposites
EK Akdoğan, I Savkilyildiz, B Berke, T Tsakalakos, Rutgers Univ, USA

Tuesday **36. NANOMATERIALS IV: (V. 4)**
 June 21 **08:00** Room 6

Chair: HW Jin, Exxon-Mobil Research & Engineering, USA
Co-Chair: R Ellis-Behnke, MIT, USA & Univ of Hong Kong, China

Bioinspired Synthesis of Nanocomposites Using Self-assembling Natural and Synthetic Polymers
M Akinc, XP Liu, YY Hu, Iowa State Univ; Y Yusufoglu, Argonne National Lab; K Schmidt-Rohr, S Mallapragada, Iowa State Univ, USA

How Can Smart Environments Outwit Cancer Cells?
RG Ellis-Behnke, MIT, USA; PMT Ling, SWH Cheung, DKC Tay, Univ of Hong Kong, China

Nanotechnology for Reducing Bacterial Functions
TJ Webster, Brown Univ, USA

Nanostructured Surfaces: Organising Atoms, Nanoparticles and Proteins to Create Functional Architectures
RE Palmer, Univ of Birmingham, UK

Probing Nanostructure in Functional Materials with Total Scattering
K Page, Los Alamos National Laboratory, USA

Novel Nanocrystalline TiO₂-Coatings with High Photocatalytic Activity for Environmental Technology
T Klassen, J-O Kliemann, H Gutzmann, F Gärtner, Helmut Schmidt Univ; D Bahnemann, Gottfried Wilhelm Leibniz Univ, Germany

Surface Reactions of Polycrystalline Y₂O₃ at High Pressure
S Deutsch, JF Al-Sharab, BH Kear, OA Voronov, SD Tse, Rutgers Univ, USA

Nano-crystals and Nano-crystallography: Ordinary Materials with Extraordinary Properties
BF Palosz, S Stelmakh, E Grzanka, S Gierlotka, Inst of High Pressure Physics UNIPRESS, PAS, Poland; WF Palosz, Brimrose Corp, USA

Zinc Oxide Based Nanomaterials as an Additive to Enhance the Properties of Polymer Nanocomposites
Z. Crnjak Orel, P Podbrscek, M Bitenc, National Inst of Chemistry, Slovenia

