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June 19–24, Maui, Hawaii, USA

The Twenty-first (2011) International  
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- 2nd Renewable Energy & Environment
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- 3rd Nanotechnology
- 3rd Frontier & Clean Energy Tech
- 9th High-Performance Materials
- 5th Strain-Based Design
- 9th (Deep) Ocean Mining (& Gas Hydrates)

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

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## 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).**

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\* Continue to next session.

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## ISOPE ARCTIC MATERIALS SYMPOSIUM

**48. ARCTIC MATERIALS I: Materials & Developments (V. 2)**  
**Tuesday June 21 10:30 Room 10**

**Chair:** OM Akselsen, SINTEF, Norway

**Contamination Resistant Phosphate Ceramic Cement for Arctic Applications**

N Limaye, SL Patil, PB Vohra, S Khataniar, G Chen, AY Dandekar, Univ of Alaska Fairbanks, USA

**Forgings for Low Temperature Applications - Influences of the Alloying Concept and Advanced Forging Procedures on Impact Strength and Fracture Toughness**

NT Welsch, D Bruch, Bruck Forgings, Germany; E Østby, SINTEF, Norway

**Arctic Composite Pressure Vessels**

TK DeLay, Cimarron Composites, USA

**Development of SMYS 345/420 MPa Steel Plates for Arctic Offshore Structures**

IS Suh, SH Kim, YH Park, WG Kim, JK Lee, CS Lee, POSCO, Korea

**Material Qualification for Arctic Applications**

AM Horn, Det Norske Veritas; M Hauge, Statoil, Norway

**Thermal Conductivity and Expansion of Carbon Fiber Reinforced Composites at Low Temperature**

WO Lee, SB Lee, JW Yi, MK Um, Korea Inst of Materials Science, Korea

**58. ARCTIC MATERIALS II: Steel & Weldments (V. 2)**  
**Tuesday June 21 14:00 Room 10**

**Chair:** HW Jin, Exxon-Mobil Research & Engineering Co, USA

**Co-Chair:** M Hauge, Statoil, Norway

**Application of Electron Backscatter Diffraction (EBSD) on Face Crystallographic Orientation Studies in Arctic Steels**

P Mohseni, JK Solberg, NTNU; OM Akselsen, NTNU/SINTEF; E Østby, SINTEF, Norway

**Comparison of Hybrid Laser-Arc Welding with Conventional MIG Welding for Arctic Application**

XB Ren, NTNU; SK Å, SINTEF; OM Akselsen, NTNU/SINTEF; B Nyhus, SINTEF, Norway

**Low Temperature Toughness in a SA Welding of 420 MPA Steel**

OM Akselsen, NTNU/SINTEF; E Østby, SINTEF; C Thaulow, NTNU, Norway

**Fracture Mechanics Testing of Weldments - Surface versus Through Thickness Notching**

C Thaulow, NTNU; HI Lange, S Åldstedt, E Østby, SINTEF;  
OM Akselsen, NTNU/SINTEF, Norway

**Investigation of New Nanomechanical Test Methods on Arctic Steels**

BRS Rogne, C Thaulow, NTNU, Norway

**Atomistic Simulations of Semi-infinite Cracks in Bcc Iron using an Analytic Bond-order Potential**

CH Ersland, C Thaulow, NTNU; E Østby, SINTEF, Norway

**68. ARCTIC MATERIALS III: Weldment & Coatings (V. 2)**  
Tuesday                  June 21                  16:20                  Room 10

**Chair:** C Thaulow, NTNU, Norway

**Co-Chair:** AM Horn, Det Norske Veritas, Norway,

**Fracture Toughness Scatter and Effect of Constraint in Weld Thermal Simulated HAZ Microstructures at -60°C**

E Østby, SINTEF; C Thaulow, NTNU; OM Akselsen, SINTEF, Norway

**Statistical Interpretation of Fracture Toughness Test Data for Qualification of Weldability and Integrity Assessment of Arctic Structures**

M Hauge, Statoil, Norway

**Selection of Coatings for Operations in the Arctic**

T Stein, I Fletcher, M Halliday, AkzoNobel Powder Coatings, UK

**Corrosion Protecting Coating Systems in Arctic Areas**

A Bjørgum, OØ Knudsen, A-K Kvernbråten, N-I Nilsen, SINTEF, Norway

