

**PROGRAM FOR THE**  
**20<sup>TH</sup> ANNUAL CONFERENCE ON FOSSIL ENERGY MATERIALS**  
**HILTON-KNOXVILLE; 501 W CHURCH AVENUE (DOWNTOWN)**  
**KNOXVILLE, TENNESSEE**  
**JUNE 12-14, 2006**

**Monday, June 12<sup>th</sup>, 2006**

- 12.00 noon      Registration
- 1.00 pm          Welcome and Introductory Remarks  
Roddie Judkins, Oak Ridge National Laboratory
- 1.10 pm          Brief Update on DOE's Advanced Research Materials Program  
Robert Romanosky, U.S. Department of Energy, National Energy Technology  
Laboratory

**Session 1 – NEW ALLOYS**

- 1.25 pm          Introduction/Chair  
Roddie Judkins, Oak Ridge National Laboratory

**1a. High-Temperature 'Conventional' Wrought Alloys**

- 1.30 pm          Advanced Pressure Boundary Materials  
Mike Santella, Oak Ridge National Laboratory
- 2.05 pm          Fireside and Steamside Corrosion of Alloys for USC Plants  
Ken Natesan, Argonne National Laboratory
- 2.40 pm          Multiphase HT Alloys: Exploration of Laves-Strengthened Steels  
Mike Brady, Oak Ridge National Laboratory
- 3.15 pm          Break

**1b. Oxide Dispersion-Strengthened Alloys**

- 3.45 pm          Enabling the Practical Application of Oxide Dispersion-Strengthened Ferritic Steels  
Ian Wright, ORNL
- 4.20 pm          Control of Defects and Microstructure in ODS Alloys  
Andy Jones, University of Liverpool
- 4.55 pm          Optimization of ODS – $Fe_3Al$  and MA956 Alloy Heat Exchanger Tubes  
Bimal Kad, University of California at San Diego
- 5.30 pm          Adjourn

**Monday, June 12<sup>th</sup>, 2006**

6.00-7.30 p.m. Networking and Poster Session

## **BREAKTHROUGH CONCEPTS**

### **Session 2 – POSTERS**

1. Development of Ultra-High Temperature Molybdenum Borosilicides  
Joachim Schneibel, Oak Ridge National Laboratory, and Rob Ritchie, UC Berkeley
2. Optimizing Processing of Mo-Si-B Intermetallics Through Thermodynamic Assessment of the Mo-Si-B and Related Systems  
Matt Kramer, Ames Laboratory
3. Effects of Tungsten on the Microstructures of TiAl-Based Intermetallics  
Peter Liaw, University of Tennessee
4. Influence of Impurities on Ductility of Cr-Based Alloys and In-situ Mechanical Property Measurement  
Bruce Kang, West Virginia University
5. Microstructure and Properties of HVOF-Sprayed Ni-50Cr Coatings  
Richard Wright, Idaho National Engineering and Environmental Laboratory
6. New Processing Developments in Metallic Powders for Fossil Energy Applications  
Iver Anderson, Robert Terpstra, Ames Laboratory
7. Steam Turbine Materials and Corrosion  
Gordon Holcomb, U.S. Department of Energy, National Energy Technology Laboratory
8. Fireside Corrosion Probes: How Well Do They Work?  
Bernie Covino, U.S. Department of Energy, National Energy Technology Laboratory
9. In-Plant Corrosion Probe Tests  
Gregg Stanko, Foster Wheeler Development Corporation
10. Corrosion and Joining of ODS FeCrAl Alloys for Very High Temperature Heat Exchangers  
John Hurley, University of North Dakota, Energy and Environmental Research Center
11. Creep and Corrosion Testing of Aluminide Coatings on Martensitic Substrates  
S. Dryepondt, Oak Ridge National Laboratory

## **Tuesday, June 13<sup>th</sup>, 2006**

7.30 am Continental Breakfast

### **Session 3 – COATINGS & PROTECTION OF MATERIALS**

8.30 am Introduction/Chair  
Udaya Rao, U.S. Department of Energy, National Energy Technology Laboratory

#### **3a. Metallic Coatings for Structural Alloys**

8.40 am Aluminide Coatings for Power Generation Applications  
Ying Zhang, Tennessee Technology University

9.15 am High-Temperature Corrosion Resistance of Candidate FeAlCr Coatings in Low NO<sub>x</sub> Environments  
Joe Murphy, Lehigh University

9.50 am Concepts for Smart, Protective High-Temperature Coatings  
Peter Tortorelli, Oak Ridge National Laboratory

10.25 am Break

#### **3b. Ceramic/Composite Coatings**

10.55 am YSZ Thermal Barrier Coatings by MOCVD  
Ted Besmann, Oak Ridge National Laboratory

11.30 am Protection Systems: Corrosion-Resistant Coatings  
Beth Armstrong, Oak Ridge National Laboratory

12.05 pm Development of Nondestructive Evaluation Methods for Ceramic Coatings  
Bill Ellingson, Argonne National Laboratory

#### **Working Lunch**

12:40 pm Presentation by Roddie R. Judkins, Director, ORNL Fossil Energy Program

### **Session 4 – Functional Materials**

2.00 pm Introduction/Chair, Cindy Powell  
U.S. Department of Energy, National Energy Technology Laboratory

#### **4a. Ceramics & Refractories**

2.10 pm Low-Chrome/Chrome Free Refractories for Slagging Gasifiers  
James Bennett, Albany Research Center

2.45 pm Pilot Facility for the Production of Silicon Carbide Fibrils  
Richard Nixdorf, ReMaxCo Technologies, Inc.

3.20 pm Break

#### **4b. Activated Carbon Structures**

3.50 pm      Activated Carbon Composites for Air Separation  
Fred Baker, Oak Ridge National Laboratory

#### **4c. Inorganic Membranes & Structures**

4.25 pm      Gas Sensors for Fossil Energy Applications  
Tim Armstrong, Oak Ridge National Laboratory

5.00 pm      Adjourn

## **Wednesday, June 14<sup>th</sup>, 2006**

7.30 am Continental Breakfast

8.30 am Introduction/Chair  
Tim Armstrong, Oak Ridge National Laboratory

### **3extra. Metallic Coatings for Structural Alloys**

8.40 am Extended Alloy Lifetimes Through Improved Coating Performance and Composition Optimization  
Bruce Pint, Oak Ridge National Laboratory

### **Session 4 – FUNCTIONAL MATERIALS (CONTINUED)**

#### **4c. Inorganic Membranes & Structures (continued)**

9.15 am Development of Inorganic Membranes for Hydrogen Separation  
Brian Bischoff, Oak Ridge National Laboratory

9.50 am Metal Membranes for Hydrogen Separation  
Steve Paglieri, Los Alamos National Laboratory

10.25 am Break

11.00 am Brazing Technology for Gas Separation Membranes: Advances in Air Brazing  
Scott Weil, Pacific Northwest National Laboratory

11.35 am Closing Remarks  
Robert Romanosky  
U.S. Department of Energy, National Energy Technology Laboratory  
Roddie Judkins  
Oak Ridge National Laboratory

12.00 pm. Adjourn