Program

Green Engineering: Defining the Principles

Sandestin Resort
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Sandestin, Florida, 32550
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May 18-22, 2003

Co-Sponsors: AIChE, ASME, and SAE

Conference Chairs

Martin Abraham
University of Toledo

William H. Sanders III
U.S. EPA

ENGINEERING CONFERENCES INTERNATIONAL, INC.
Successor Program to United Engineering Foundation Conferences
Six MetroTech Center -- Brooklyn, NY 11201
E: info@eci.poly.edu - www.engconfintl.org/3ap.html
Sunday, May 18, 2003

4:00 pm – 6:00 pm  Registration/Check-in

5:30 pm – 6:00 pm  Welcome Reception

6:00 pm – 7:30 pm  Dinner

7:30 pm – 7:45 pm  Introductions

7:45 pm – 8:30 pm  **Keynote Presentation**

IMPROVING THE ENVIRONMENT, VIA IMPROVED PRODUCTIVITY IN THE USE OF MATERIALS, ENERGY, AND CARBON

Dr. Arnulf Gruebler, International Institute for Applied Systems Analysis

8:30 pm – 9:30 pm  Reception
**Monday, May 19, 2003**

<table>
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<th>Time</th>
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<tr>
<td>7:30 am - 8:30 am</td>
<td>Breakfast</td>
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| 8:30 am - 9:15 am | **Session I - Drivers**  
                             KERMIT’S LAMENT: IT’S NOT EASY BEING GREEN  
                             P. Aarne Vesilind, R. L. Rooke Professor of Engineering, Bucknell University |
| 9:15 am - 10:00 am | ARE GREEN DESIGN AND ENGINEERING PRINCIPLES NEEDED?  
                             Walter W. Olson, University of Toledo |
| 10:00 am - 10:30 am | Coffee Break                                                              |
| 10:30 am - 11:15 am | ENVIRONMENTAL SUSTAINABILITY - WHY?  
                             Peter Melhus, Bay Area Alliance for Sustainable Development |
| 11:15 am - 12:00 pm | SUSTAINABLE DEVELOPMENT  
                             Henry J. Hatch, US Army Corps of Engineers (ret) |
| 12:00 noon | Introduction to focus group discussions                                |
| 12:15 - 1:30 pm | Lunch                                                                   |
| 1:30 pm - 4:00 pm | ad hoc sessions/free time for recreation                               |
| 4:30 pm - 5:30 pm | **Poster Session I** (with coffee)                                      |
| 5:30 pm | Panel Discussion  
                             Presentation of group reports |
| 6:00 pm - 7:15 pm | Dinner                                                                  |
| 7:15 pm - 7:45 pm | DRIVERS FOR ENVIRONMENTAL PERFORMANCE IN INDUSTRY  
                             Nele Zechel, Brandenburg University of Technology at Cottbus |
| 7:45 pm - 8:15 pm | A DISCUSSION OF THE FIRST PRINCIPLES FOR GREEN ENGINEERING  
                             Wally Peters, University of South Carolina |
| 8:15 pm - 8:45 pm | DRIVERS, INHIBITORS, PARADIGM SHIFTS, AND ENABLERS FOR SUSTAINABILITY OF THE BUILT ENVIRONMENT  
                             Jorge Vanegas, Georgia Institute of Technology |
| 8:45 pm | Social Hour                                                              |
**Tuesday, May 20, 2003**

7:30 am – 8:30 am     Breakfast

**Session II - Metrics and Tools**

8:30 am – 9:15 am     MUSE-ING ABOUT GREEN ENGINEERING  
                       Delcie Durham, National Science Foundation

9:15 am – 10:00 am    MEASURING GREEN MANUFACTURING PROGRESS  
                       Tim Gutowski, Massachusetts Institute of Technology

10:00 am – 10:30 am   Coffee Break

10:30 am – 11:15 am   COMPUTER-AIDED TOOLS FOR ENVIRONMENTALLY-CONSCIOUS CHEMICAL PROCESS ANALYSIS  
                       David R. Shonnard, Michigan Technological University

11:15 am – 12:00 noon    USING THE U.S. EPA’S TRACI FOR GREEN ENGINEERING  
                          Jane Bare, U.S. EPA

12:00 noon     Introduction to focus group discussions

12:15 – 1:30 pm    Lunch

1:30 pm – 4:30 pm     ad hoc sessions/free time for recreation

4:30 pm – 5:30 pm    Poster Session II (with coffee)

5:30 pm – 6:00 pm    Panel Discussion  
                       Presentation of group reports

6:00 pm – 7:15 pm    Dinner

7:15 pm – 7:45 pm    ENVIRONMENTALLY COMPATIBLE PRODUCT DESIGN: HOW IT WORKS WITH THE SIEMENS STANDARD SN 36350  
                       Ferdinand Quella, Siemens AG

7:45 pm – 8:15 pm    ECONOMIC, SAFETY, OPERATIONAL, HEALTH AND ENVIRONMENTAL PERFORMANCE ESTIMATION DURING CHEMICAL PROCESS SYNTHESIS  
                       Robert M. Counce, The University of Tennessee

8:15 pm – 8:45 pm    APPROACHES AND TOOLS FOR GREEN ENGINEERING  
                       Nhan Nguyen, U.S. EPA

8:45 pm    Social Hour
**Wednesday, May 21, 2003**

7:30 am – 8:30 am  Breakfast

**Session III – Connecting Process to Product**

8:30 am – 9:15 am  DESIGN THROUGH THE TWELVE PRINCIPLES OF GREEN ENGINEERING  
Paul Anastas, Office of Science and Technology Policy

9:15 am – 10:00 am  GREEN ENGINEERING TEACHINGS FROM INDUSTRIAL POLLUTION PREVENTION PROGRAMS  
Kenneth Mulholland, Kenneth Mulholland and Associates

10:00 am – 10:30 am  Coffee Break

10:30 am – 11:00 am  GREEN ENGINEERING: A CORPORATE RESPONSIBILITY  
Barry Marten, Siemens VDO

11:00 am – 11:30 am  LESSON LEARNED: INTEGRATING ENVIRONMENTAL ASPECTS INTO PRODUCT DESIGN AND DEVELOPMENT  
Konrad Saur, Five Winds International

11:30 am – 12:00 noon  INTEGRATING GREEN CHEMISTRY AND ENGINEERING INTO BUSINESS OPERATIONS  
Lauren G. Heine, Zero Waste Alliance

12:00 noon  **Introduction to focus group discussions**

12:15 PM – 1:30 pm  Lunch

1:30 pm – 5:00 pm  ad hoc sessions/free time for recreation

5:00 pm – 6:00 pm  **Panel Discussion**  
**Presentation of group reports**

6:00 pm – 7:00 pm  Dinner

7:00 pm – 7:30 pm  CHEMICAL REACTION ENGINEERING, THE ENVIRONMENT, POLLUTION PREVENTION AND SUSTAINABLE DEVELOPMENT  
Mike Dudukovic, Washington University

7:30 pm – 8:00 pm  ENVIRONMENTAL IMPACTS OF RESIDENTIAL GREEN BUILDING & CHALLENGES FOR ENGINEERS  
William Sanders, U.S. EPA

8:00 pm – 8:30 pm  CUSTOMER BEHAVIOR AND GREEN PRODUCTS  
Sibel Bulay Koyluoglu, Ford

9:00 pm  Social Hour
Thursday, May 22, 2003

7:30 am – 8:30 am  Breakfast

Session IV - Writing the Principles

8:30 am  PRESENTATION OF DRAFT PRINCIPLES
          Martin Abraham and Barb Karn

9:00 am  Breakout Sessions

10:00 am – 10:30 am  Coffee Break

10:30 am – 11:30 am  Panel Discussion
                      Presentation of group reports

11:30 am – 12:15 pm  WRAP-UP AND NEXT STEPS
                      Martin Abraham

12:15 pm – 1:30 pm  Lunch