2011 ASM Annual Spring Symposium
Sustainability of Materials
Steinmetz Hall, GE Global Research Center, Niskayuna, NY

Wednesday, May 18<sup>th</sup>, 2011

7:30 - 8:15  Check-in/registration and coffee
8:15  - 8:25  Opening Remarks

Session I  Sustainable Manufacturing
Chairs:  Andrew Trimmer – GE Global Research
        Neil Johnson – GE Global Research
8:25  - 9:05  Nick Dewhurst  Boothroyd Dewhurst, Inc.
             DFMA: the Ultimate in Sustainability?
9:05 - 9:45  Prof. I.S Jawahir  University of Kentucky
             Sustainable Manufacturing; The Major Driving Force For Next Generation Products and Processes
             Conference Keynote Address:
9:45 - 10:15  Keynote Speaker: Paul Tonko  -US House Rep 21<sup>st</sup> District NY
10:15 - 10:35  Break
10:35 - 11:15  Ray Reagan  GSI Lasers
               The Laser as a Sustainable Resource for Manufacturing
11:15 - 11:55  Ed Balaschak  GE Transportation
               Machine Design for Sustainable Manufacturing
11:55 - 1:00  Lunch

Session II  Reduced Rare Earth Permanent Magnets
Chairs:  Frank Johnson – GE Global Research
        Christina Chen – GE Global Research
1:00 - 1:45  Jinfang Liu  Electron Energy Corporation
             Rare Earth Supply Chain and the Need to Develop Permanent Magnets with Less or No Rare Earth Elements
1:45 - 2:30  Gareth P. Hatch  Technology Metals Research, LLC
             Rare Earths: The Supply & Demand Challenge
2:30 - 2:50  Break
2:50 - 3:35  R. William McCallum  Ames Lab, DOE
             Non-Rare-Earth Permanent Magnets: From Band Structure, Genetic Algorithms, and Atom Probe to Traction Motors
3:35 - 4:20  J. Ping Liu  University of Texas Arlington
             From Nanoparticles to Nanocomposite Magnets --- A Pursuit for One Decade
4:45 - 5:45  Tour of GE Global Research
Wednesday evening, May 18th, 2011

Desmond Hotel and Conference Center
Albany, NY

6:00 - 7:00  Hors d’oeuvres and Cash Bar Reception (Desmond Hotel)
7:00 - 8:00  Symposium Dinner
8:00 - 9:00  Dinner Talk: David B. Spencer

wTe Corporation

Advances in Recycling and Resource Recovery

Directions to Desmond Hotel and Conference Center

Take the third right off the traffic circle after exiting GE Global Research onto River Road

Continue on River Road for ~ 2.5 miles

Turn left at the first stop sign onto Rosendale Rd

Continue on Rosendale around several turns for ~2.5 miles

Turn left onto Rt 7 (Troy Schenectady Rd) heading east for ~0.7 miles

Turn right onto Albany Shaker Road heading toward the Airport

Continue on Albany Shaker Road through five traffic lights for ~3.2 miles

The Desmond is on the right side just before you cross under I-87
Thursday, May 19th, 2011

7:30 - 8:30  Check-in and coffee

**Session III**  Life Cycle of Energy Generation and Storage Materials
Chairs: Mohamed Rahmane – GE Global Research
Don Lipkin – GE Global Research

8:30 - 9:15  Job Rijssenbeek  GE Global Research
*Advanced Characterization of Sodium Metal Halide Batteries*

9:15 - 10:00  Ron Wroczynski  GE Global Research
Comparative Life Cycle Assessment of Sodium-Metal Halide Batteries in a Non-mobile Application

10:00 -10:30  Break

10:30 - 11:15  Steven Duclos  GE Global Research
*Materioals Challenges in High-Efficiency CdTe Thin Film Photovoltaics*

11:15 - 12:00  Vasilis Fthenakis  Columbia Univ./ Brookhaven - DOE
*Sustainability of Very Large Deployment of Photovoltaics: Environmental Research*

12:00 - 12:50  Lunch

**Session IV**  Nuclear Materials Life Cycle
Chairs: Mike Hanson – Knolls Atomic Power Laboratory
Karl Schmidt – Knolls Atomic Power Laboratory

12:50 - 1:35  Melissa C. Teague  Idaho National Laboratory
*High Burn-up Oxide Fuel Challenges for Economic Fast Breeder Reactors*

1:35 - 2:20  Eugene Shwageraus  Department of Nuclear Science and Engineering, MIT
*Thorium Fuel Cycle Challenges*

2:20 - 2:35  Break

2:35 - 3:20  Robert Hargraves  Institute for Lifelong Education at Dartmouth
*Aim High! Thorium Energy Cheaper than from Coal*

3:20 - 4:05  Micah J. Hackett  TerraPower
*Materials Development for the Traveling Wave Reactor*

4:05 - 4:50  Dr. Dennis D. Keiser, Jr.  Idaho National Laboratory
*Materials Challenges for Low Enriched Fuel for High Flux Reactors*

4:50 - 5:00  Concluding Remarks