



**2012 INTERNATIONAL WORKSHOP ON
ENVIRONMENT AND ALTERNATIVE ENERGY**
“Enabling Sustainable Space Exploration”
Greenbelt, Maryland - December 4 - 7, 2012

DRAFT AGENDA

Tuesday, December 4

Welcome and Opening Remarks: 9:00am - 10:30am

Woodrow Whitlow, Jr., Assoc. Administrator for Mission Support Directorate, NASA HQ
Paul Cannock, Head of Facility Management Department, ESA HQ
Christopher Scolese, Director, Goddard Space Flight Center, NASA

Panel Discussion: Potential Principles for Greening Space Systems

10:30am - 12:00pm

James Leatherwood, Director, Environmental Management division, NASA HQ
Nathalie Meusy, Head of ESA's Coordination Office on Sustainable Development, ESA
Klaus Hieronymi, Global Resource Efficiency Strategies, Hewlett-Packard

Quantification of Green Roofs' Contributions to Building and Community Performance:

1:00pm - 5:00pm

Tutorial of Green Roof Systems, Ed Snodgrass, Emory Knoll Farms
Design Variables Influencing the Utility of Green Roof in Water Resource Management, Charlie Miller, Roofmeadow
Environmental Impacts of Green Roofs - Why Context Matters, Dr. David Sailor, Portland State University
Green Roof Media Nutrient Testing, Nutrient Management, and Runoff Water Quality, Dr. Robert Berghage, Penn State University
Cooling with Variable Insulation Green Roofs: Experimental Series in a Hot and Dry Climate, Dr. Pablo La Roche, Department of Architecture Cal Poly Pomona/HMC Architects
Assessing the Year-Round Thermal Benefits of a Green Roof, Dr. Brad Bass, Environment Canada
Progress in Developing a Mechanistic Water Balance Model, to Predict Green Roof Performance and Efficiency, Dr. John Lea-Cox, University of Maryland
The Energy Balance Approach To Green Roof Hydrology: Pros, Cons and Instrumental Techniques, Stuart Gaffin, NASA GISS/Columbia University

Wednesday, December 5

Student Presentations: 9:00am - 4:30pm

Student Presentations and Poster Session on Related International and Domestic Research

Student Awards Ceremony and Reception: 4:30pm - 6:30pm

Thursday, December 6

Environmentally-Driven Changes to Aerospace Materials and Processes:

8:00am - 12:00pm

Impact of REACH Legislation on European Space Programs, Thomas Rohr, ESA
Hexavalent Chromium Free Coatings for Rocket and Spacecraft Applications, Matt Rothgeb, ITB
Active Corrosion Protection of Sol-Gel Coatings on AA2024-T3, Dr. Ana Cabral, ISQ
A Multifunctional Coating for Environmentally Friendly Corrosion Protection, Dr. Luz Calle, NASA
Lead Free Soldering as an Environmentally-Driven Technology, Eduardo Dias Lopes, ISQ
Development of NASA Plan for Testing Alternatives to AK-225 for Precision Cleaning & Cleanliness Verification, Christina Pina Arpin, NASA WSTF
Joint Service Solvent Substitution Working Group, Wayne Ziegler, US Army Research Laboratory
Selection of Nonflammable Solvent Alternatives for Cleaning Aerospace Oxygen Systems, Nikki Lowery/Mark Mitchell, Jacobs Technology/NASA MSFC

Facility Energy Supply Solutions for Critical Applications including Energy Security:

1:00pm - 5:00pm

Sustainability Base, NASA's Collaborative Support Facility, Rosalind Grymes, NASA AMES
High Density Thermal Energy Storage with Supercritical Fluids, Gani Ganapathi, NASA JPL
Challenges in the Integration of a Sodium Borohydride Hydrogen Reactor with a PEM Fuel Cell for a Stationary Application, Carmen Mireya Rangel, LNEG Fuel Cells and Hydrogen Unit
Trash to Supply Gas (TtSG): Converting Space Waste to a Commodity, Paul Hintze, NASA KSC
Building Integrated Photovoltaic Materials, Lynn Brown, Consulting Collaborative
Combined Heat & Power for New Data Center, Charles Lehnert, Toledo University
Seeking Security and Sustainability CLEWs Climate Land Energy and Water Strategies, Mark Howells, Professor, Royal Institute of Technology (KTH)
Cogeneration Systems for Powering and Cooling Data Centers: The Green Data Center at Syracuse University, Dustin Demetriou, Syracuse University

Friday, December 7

Use of Life Cycle Assessments (LCA) in Aerospace Applications:

8:00am - 12:00pm

Changes in Aerospace Electronics and the Impact on Life Cycle Considerations, Sony Mathew, CALCE
ESA's Experience on LCA for Environmental Impact Assessment of Space Systems, Tiago Soares, ESTEC
Kone's Innovative Concepts Regarding Eco-Efficiency Elevators and Use of Life Cycle Assessments, Kellie Lindquist, KONE
Using LCA to Analyze the Benefit of Green Propellants, Christyl Johnson, NASA GSFC
Life-Cycle Management for Space Systems: Principles, Policy and Practices, Mick Bilney, CARDNO TEC
Assessment of Lead-Free Solder Environmental Benefits when used in Electrical and Electronic Equipment, Eduardo Dias Lopes, ISQ
LCA of Selected NASA Ground Based Test Facilities, Cutter Sydnor, Virginia Tech
Reducing NASA Mission Risk through Green Engineering, Sean McGinnis, Virginia Tech