MONDAY, 7 MAY 2001

8:30am – 12:00pm

TUTORIALS & WORKSHOPS

I. Life Cycle Assessment and Design for Environment: Useful Electronics Applications

- Harald Florin, PE Group
- Andrea Russell, Five Winds International

II. Transition to Lead-Free Solder in Electronics

- Karl J. Puttlitz, IBM Corporation
- Kathleen A. Stalter, IBM Corporation
- Mohammad Yunus, Texas Instruments
- Carol Handwerker, National Institute of Standards and Technology

III. International and Domestic Regulatory Product Requirements for the Electronic Sector

- Paul Hagen, Beveridge & Diamond, P.C.
- William F. Hoffman III, Motorola Advanced Technology Center
- Heather Bowman, Electronic Industries Alliance

12:00pm – 1:00pm

LUNCH FOR MONDAY SPEAKERS

1:15p.m. – 2:15p.m.

Plenary Speaker

Wayne S. Balta, Director, Corporate Environmental Affairs, IBM Corporation

2:30 p.m. - 4:30 p.m.

Session 1

DFE Methodology & Tools I

Chair: Duncan Noble, Five Winds International

Eco-Labelling and the Information Technology (IT) Industry
Ferdinand Hermann, Compaq Computer EMEA BV
Hans-Peter Urbach, Siemens AG
Hans Wendschlag, Hewlett Packard Sverige AB

Measuring Material Cycling in Industrial Systems
Reid Bailey, University of Dayton
Bert Bras, Georgia Institute of Technology
Janet Allen, Georgia Institute of Technology

Disassembly Complexity and Recyclability Analysis of New Designs from CAD File Data

Vishakar Mani, New Jersey Institute of Technology
Sanchoy Das, New Jersey Institute of Technology
Reggie Caudill, New Jersey Institute of Technology

Development of a CAD Integrated DFE Workbench Tool
Thomas Roche, Galway Mayo Institute of Technology
Elena Man, National University of Ireland
Jimmie Browne, National University of Ireland

2:30 p.m. - 4:30 p.m.

Session 2
Manufacturing Processes I
Chair: Surendra Gupta, Northeastern University

The Quest for Environmental and Productivity Improvements at the IBM Demanufacturing and Asset Recovery Center
Ed Grenchus, IBM Corporation
Robert Keene, IBM Corporation
Charles Nobs, IBM Corporation
Larry Yehle, IBM Corporation

Flexible Disassembly Tools
G. Seliger, Technical University Berlin
T. Keil, Technical University Berlin
U. Rebafka, Technical University Berlin
A. Stenzel, Technical University Berlin

Product Recovery Using a Disassembly Line: Challenges and Solution
Surendra M. Gupta, Northeastern University
Aşkıner Güngör, Pamukkale University

Cathode Ray Tube Manufacturing and Recycling: Analysis of Industry Survey
A. Monchamp, Electronic Industries Alliance
H. Evans, Electronic Industries Alliance
J. Nardone, Electronic Industries Alliance
S. Wood, Electronic Industries Alliance
E. Proch, Electronic Industries Alliance
T. Wagner, Electronic Industries Alliance

2:30 p.m. - 4:30 p.m.

Session 3
Corporate Strategies for Environmental Performance
Chair: Dani Tsuda, Apple

Product Environmental Care, a Praxis-Based System Uniting ISO 14001, ISO 14062, IPP, EEE and Ecolabel Elements

Ab Stevels, Delft University of Technology

Product and Process Life Cycle Inventories using SAP R/3
Antje Januschkowetz, Robert Bosch GmbH
Chris T. Hendrickson, Carnegie Mellon University

An IBM Methodology for Evaluating Emerging Requirements
Anne Brinkley, IBM Corporation
Mary Ann Christie, IBM Corporation
Mary Jacques, IBM Corporation
J. Ray Kirby, IBM Corporation
Tim Mann, IBM Corporation

Stakeholder Dialogues on Recycling Engineering Thermoplastics: A Collaborative Effort to Build a Recycling Infrastructure for Plastics from Electronics
Patricia S. Dillon, Gordon Institute at Tufts University

4:45 p.m. - 5:45 p.m.
ROUNDTABLE DISCUSSIONS

TUESDAY, 8 MAY 2001

8:30a.m. – 9:45a.m.
KEYNOTE ADDRESS
Jonathan G. Koomey, Staff Scientist, Lawrence Berkeley National Laboratory

10:00 a.m. - 12:00 p.m.
Session 4
DFE Assessment Methods
Chair: Hong-Chao Zhang, Texas Tech University

Ranking Ecodesign Priorities from Quantitative Uncertainty Assessment for End-of Life Scenarios
Casper Boks, Delft University of Technology
Ab Stevels, Delft University of Technology

Optimization of Inductive RFID Technology
Steve C.Q. Chen, Princeton University
Valerie Thomas, Princeton University

Calculating Environmentally Weighted Recyclability of Consumer Electronic Products using Different Environmental Assessment Models
Jaco Huisman, Delft University of Technology
Ab Stevels, Delft University of Technology

Andreas Middendorf, Fraunhofer IZM

Comparison of Major Environmental Performance Metrics and Their Application to Typical Electronic Products
Yanchun Luo, New Jersey Institute of Technology
Pornsarun Wirojanagud, New Jersey Institute of Technology
Reggie J. Caudill, New Jersey Institute of Technology

10:00 a.m. - 12:00 p.m.

Session 5
End of Life Strategies
Chair: Richard VanLandingham, Texas Instruments

Metrics for End-of-Life Strategies (ELSEIM)
Catherine M. Rose, Delft University of Technology
Ab Stevels, Delft University of Technology

End of Life Recycling through Free Enterprise
Douglas Smith, Sony Electronics Inc.
Mark Small, Sony Electronics Inc.

An Overview of IBM Product Takeback Programs: "Considerations for Commercial and Consumer Computer Returns"
Rhea Hale, IBM Corporation
J. Ray Kirby, IBM Corporation
Timothy Mann, IBM Corporation
Dewey Pitts, IBM Corporation

A Logistic Concept to Improve the Re-usability of Electric and Electronic Equipment
Reinhard Knoth, Austrian Society for Systems Engineering and Automation
Martina Hoffmann, Austrian Society for Systems Engineering and Automation
Bernd Kopacek, Austrian Society for Systems Engineering and Automation
Peter Kopacek, Austrian Society for Systems Engineering and Automation

10:00 a.m. - 12:00 p.m.

Session 6
Life Cycle Impact Assessment
Chair: David Dickinson, Lucent Technologies

Life-Cycle Environmental Impacts of CRT and LCD Desktop Monitors
Maria Leet Socolof, University of Tennessee
Jonathan G. Overly, University of Tennessee
Lori E. Kincaid, University of Tennessee
Rajive Dhingra, University of Tennessee
Dipti Singh, US Environmental Protection Agency
Katherine M. Hart, US Environmental Protection Agency

Life Cycle Assessment of an Integrated Circuit Product
Fulvio Taiariol, CSELT
Patrizia Fea, CSELT
Claudio Papuzza, CSELT
Raffaella Casalino, Politecnico di Torino
Enrico Galbiati, STMicroelectronics
Stefano Zappa, STMicroelectronics

Energy Consumption of Cellular Telephones
Ion V. Nicolaescu, Motorola Advanced Technology Center
William F. Hoffman, Motorola Advanced Technology Center

Life Cycle Profitability Analysis and LCA by Simulating Material and Money Flows
Takeshi Murayama, Hiroshima University
Shinya Hatakenaka, Hiroshima University
Norihiko Narutaki, Hiroshima University
Fuminori Oba, Hiroshima University

12:00 p.m. – 1:45 p.m.

LUNCHEON ADDRESS

Dr. Robert C. Pfahl, Jr., Director of International & Environmental Research & Development, Motorola Advanced Technology Center

2:00 p.m. – 3:30 p.m.

PANEL: Environmental Implications of E-commerce

Panel Members:

H. Scott Matthews	*Carnegie Mellon University*
Reggie Caudill	*New Jersey Institute of Technology*
Mark Greenleaf	*Ford Motor Company*

3:45 p.m. - 5:15 p.m.

Session 7

DFE Methodology & Tools II

Chair: Li Shu, University of Toronto

Life Cycle Inventory Analysis and Identification of Environmentally Significant Aspects in Semiconductor Manufacturing
Karsten Schischke, Technische Universität Berlin
Markus Stutz, Motorola GmbH
Jean-Paul Ruelle, Motorola SA
Hansjörg Griese, Fraunhofer-Institut für Zuverlässigkeit und Mikrointegration (IZM)
Herbert Reichl, Technische Universität Berlin

A System for Integrating Design for Environment (DFE) Criteria into the New Product Introduction Process
Tom L. Neal, Hewlett-Packard
Mark Heintz, Hewlett-Packard

A Semi-Quantitative Methodology of Environmentally Conscious Design for Electromechanical Products
Xueqing Qian, Texas Tech University
Yue Yu, I2 Technologies
Hong-chao Zhang, Texas Tech University

3:45 p.m. - 5:15 p.m.

Session 8

Advanced Electronic Technologies & Modeling

Chair: Demi Tomita, Sony Corporation

Remanufacturing - the Key Solution for Transforming „Downcycling" into „Upcycling" of Electronics
Rolf Steinhilper, University of Bayreuth
Martin Hieber, Fraunhofer Institute IPA

Fuzzy Reasoning Petri Nets for Demanufacturing Process Decision
Meimei Gao, New Jersey Institute of Technology
MengChu Zhou, New Jersey Institute of Technology

A Systematic Approach to Disassembly Line Design
Ying Tang, New Jersey Institute of Technology
MengChu Zhou, New Jersey Institute of Technology
Reggie Caudill, New Jersey Institute of Technology

3:45 p.m. - 5:15 p.m.

Session 9

Analysis of the Impacts of E-everything

Chair: Sanchoy Das, New Jersey Institute of Technology

Web-Based Tool for Estimating the Environmental Impacts of Telework
Erasmia Kitou, University of California at Berkeley
Eric Masanet, University of California at Berkeley
Arpad Horvath, University of California at Berkeley

Network-Based Optimization and Simulation of Sustainable E-Supply Chain Management
Yanchun Luo, New Jersey Institute of Technology
Pornsarun Wirojanagud, New Jersey Institute of Technology
Reggie J. Caudill, New Jersey Institute of Technology

The Net Effect: Environmental Implications of E-Commerce and Logistics

H. Scott Matthews, Carnegie Mellon University
Chris T. Hendrickson, Carnegie Mellon University
Denise Soh, Carnegie Mellon University

WEDNESDAY, 9 MAY 2001

8:00 a.m. - 9:30 a.m.

Session 10

DFE in Practice

Chair: David Ufford, Raytheon

Product Ecology at Intel

Todd A. Brady, Intel Corporation
Nancy L. Sumrall, Intel Corporation
Vivek Gupta, Intel Corporation
Allen M. Frishman, Intel Corporation

Accompanying the (re)design of Products with Environmental Assessment (DfE) on the Example of ADSM

N. Warburg, University of Stuttgart
C. Herrmann, University of Stuttgart
J.D. Chiodo, Brunel University

The Evolution of Design for Environment in Electronics Firms

James Fava, Five Winds International
Duncan Noble, Five Winds International
Andrea J. Russell, Five Winds International

8:00 a.m. - 9:30 a.m.

Session 11

Advancing Electronic Technologies & Modeling

Chair: John Lott, DuPont & Technologies

Implementing the WEEE Directive

Klaus Hieronymi, Hewlett-Packard Europe

Value Added Color Sorting of Recycled Plastic Flake from End-of-Life Electrical and Electronic Equipment

Brian L. Riise, MBA Polymers
L.E. Allen, MBA Polymers
Michael B. Biddle, MBA Polymers
Michael M. Fisher, American Plastics Council

Economic and Logistical Modeling for Regional Processing and Recovery of Engineering Thermoplastics
Cynthia F. Murphy, University of Texas at Austin
Patricia S. Dillon, Tufts University
Gregory E. Pitts, Ecolibrium

8:00 a.m. - 9:30 a.m.

Session 12
Closed Loop Supply Chain Management
Chair: MengChu Zhou, New Jersey Institute of Technology

Improving Environmental Performance Through Reverse Logistics at IBM
Ed Grenchus, IBM Corporation
Shirley Johnson, IBM Corporation
Dan McDonnell, IBM Corporation

The DBOM Standard: A Specification for Efficient Product Data Transfer Between Manufacturers and Demanufacturers
Sanchoy Das, New Jersey Institute of Technology
Sandeep Naik, New Jersey Institute of Technology

9:45 a.m. - 11:45 a.m.

Session 13
DFE Metrics & Implementation
Chair: Laurence Weinberg, Boeing

A Web-enabled Virtual Disassembly Manager (webVDM) for Electronic Products
Paul G. Ranky, New Jersey Institute of Technology
Reggie J. Caudill, New Jersey Institute of Technology
Sanchoy K. Das, New Jersey Institute of Technology
Apoorva Bhatia, New Jersey Institute of Technology
Satishkumar Chamyvelumani, New Jersey Institute of Technology

Assessing Product Design Alternatives with Respect to Environmental Performance and Sustainability: A Case Study for Circuit Pack Faceplates
J. Mosovsky, Agere Systems
J. Dispenza, Lucent Technologies
D. Dickinson, Lucent Technologies
J. Morabito, Lucent Technologies
R. Caudill, New Jersey Institute of Technology
N. Alli, New Jersey Institute of Technology

Supply Chain Management: From Strategy to Implementation
Steven B. Young, Five Winds International
Duncan Noble, Five Winds International
Andrea J. Russell, Five Winds International

How Can Experiences From Reuse Activities Influence the Development of DFE-Tools

M. Hoffmann, Austrian Society for Systems Engineering and Automation
R. Knoth, Austrian Society for Systems Engineering and Automation
B. Kopacek, Austrian Society for Systems Engineering and Automation
P. Kopacek, Austrian Society for Systems Engineering and Automation

9:45 a.m. - 11:45 a.m.

Session 14

Product Reuse & Recycling

Chair: Lee Goldberg, Chip Center

Method to Assess the Recyclability of Televisions from the Perspective of Consumer Organisations

Kim Janssen, TNO Industrial Technology
Ab Stevels, Delft University of Technology

Environmental Impact of a Telecommunication Service

Fulvio Taiariol, CSELT
Patrizia Fea, CSELT
Claudio Papuzza, CSELT
Alberto Ramella, Politecnico di Torino

Analysis of Remanufacturer Waste Streams for Electronic Products

J. Williams, University of Toronto
L.H. Shu, University of Toronto

Reliability of Lead Free Solder Joint by Using Chip Size Package

T. Hirano, Sony Corporation
K. Fukuda, Sony Corporation
K. Ito, Sony Corporation
T. Kiga, Sony Corporation
Y. Taniguchi, Sony Corporation

9:45 a.m. - 11:45 a.m.

Session 15

Environmental Analysis of Electronic Materials

Chair: J. Ray Kirby, IBM Corporation

Lead-Free Soldering - Toxicity, Energy and Resource Consumption

O. Deubzer, University of Tokyo
H. Hamano, University of Tokyo
T. Suga, University of Tokyo
H. Griese, Fraunhofer IZM

The Development of Lead-Free Printed Circuit Assembly Technology in Hewlett-Packard: Our Strategy and Experience
Gregory A. Henshall, Hewlett-Packard Co.
Lisa W. Lindsley, Hewlett-Packard Co.

Eco-Comparison Between Ceramic and Epoxy Based Populated PWBs
C. Herrmann, University of Stuttgart
J. Gediga, PE Product Engineering
N. Warburg, University of Stuttgart

Survey of Alternatives to Tin-Lead Solder and Brominated Flame Retardants
Cynthia F. Murphy, University of Texas at Austin
Gregory E. Pitts, Ecolibrium