



International Electronics Manufacturing Initiative

**Environmentally
Preferred Electronic
Products for the Global
Market**



*Robert Pfahl
Recon '05
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Alleviating Pain · Restoring Health · Extending Life



BUSINESS WITHOUT BOUNDARIES



SANMINA-SCI



The Enterprise Mobility Company™



ELECTRONIC MATERIALS



Consultants, Government, Organizations & Universities



Développement
économique
et régional

Québec 

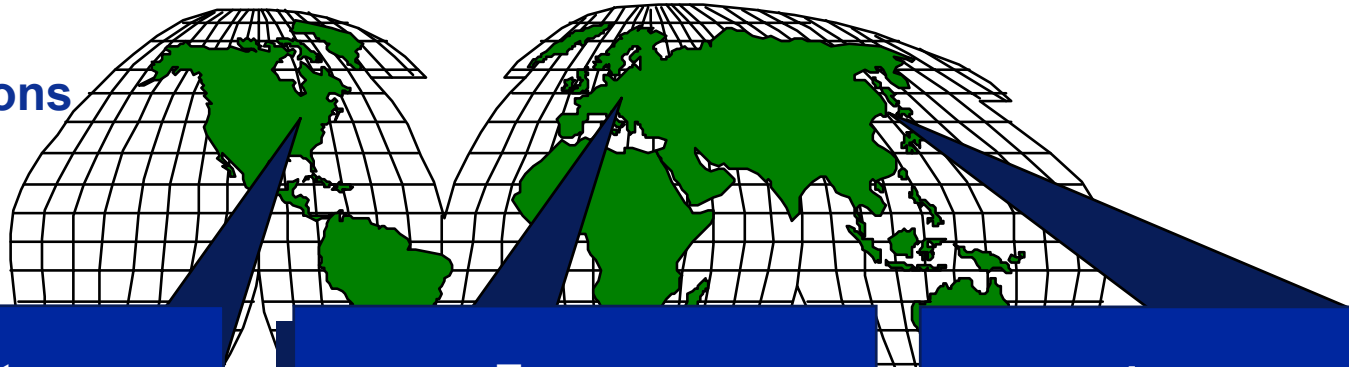
Virginia's Center for
Innovative Technology

- **Environmental Drivers and Attributes**
- **Proactive Activities in Industry**
- **Next Steps**

- **Societal Concerns**
 - **Sustainability**
 - **Global Warming**
 - **Pollution**
- **Societal Responses**
 - **Public Policy**
 - **Consumer Action**
- **Regional Differences**

Regional Drivers

Global Solutions



United States

- Regulation Driven
- Factory Focus
- R&D: Manufacturing Focused
 - CFC Elimination
 - VOC Reduction

Europe

- Customer & Regulation Driven
- Product Focus
- R&D: Model Focused
 - Design for Environment
 - Life Cycle Analysis
 - Material Flow Analysis

Japan

- Government/Industry Driven
- Market Focus
- R&D: Product Focused
 - Hybrid Engines
 - Halogen Free Plastics
 - Pb-Free Products

- Are Highly Recyclable
- Use Non-Hazardous Materials
- Minimize Use of Energy
- Minimize Use of Matter



1983
First Portable
Cellular Phone
DynaTAC



1996
First Wearable
Cellular Phone
StarTAC®



1999

- **Reduced use of Materials of Concern**
 - **Lead (Pb)**
 - **Brominated Flame Retardants**
- **Energy Efficiency**
- **Exchange of Product Environmental Data**
- **End-of-Life: Increase Product Recyclability**

Motorola and Swisscom Present Environmentally Improved Mobile Phone Prototype

Press Release:

Motorola's Personal Communications Sector and Swisscom showcased the world's first ecologically improved mobile phone prototype at the 2000 Orbit/Comdex show in Switzerland.

The prototype, a Motorola V.2288, has the following features:

- WAP-enabled
- integrated FM radio
- lead-free solder
- bromine-free wiring board
- housing contains recycled plastic
- energy-efficient charger



This innovative prototype was developed by Motorola implementing findings from ecological research conducted by Swisscom and demonstrates Motorola's advanced technological capabilities.

- **WEEE Directive establishes recyclability requirements**
- **Potential Target Areas for Improvement**
 - **Design for disassembly**
 - **Eliminate contaminating materials-bismuth**
 - **Eliminate painted plastic housings or use metal**

- **Green Electronics**
 - **As we recover from implementing RoHS and WEEE, the electronics industry needs to develop a strategic vision of sustainable electronics**
 - **The 2007 iNEMI Roadmap will address this strategic vision**



Helping you connect with and strengthen your supply chain

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