



iNEMI

International Electronics Manufacturing Initiative

iNEMI 2011 Roadmap Overview

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SMTAI, San Diego, CA
October 6, 2009

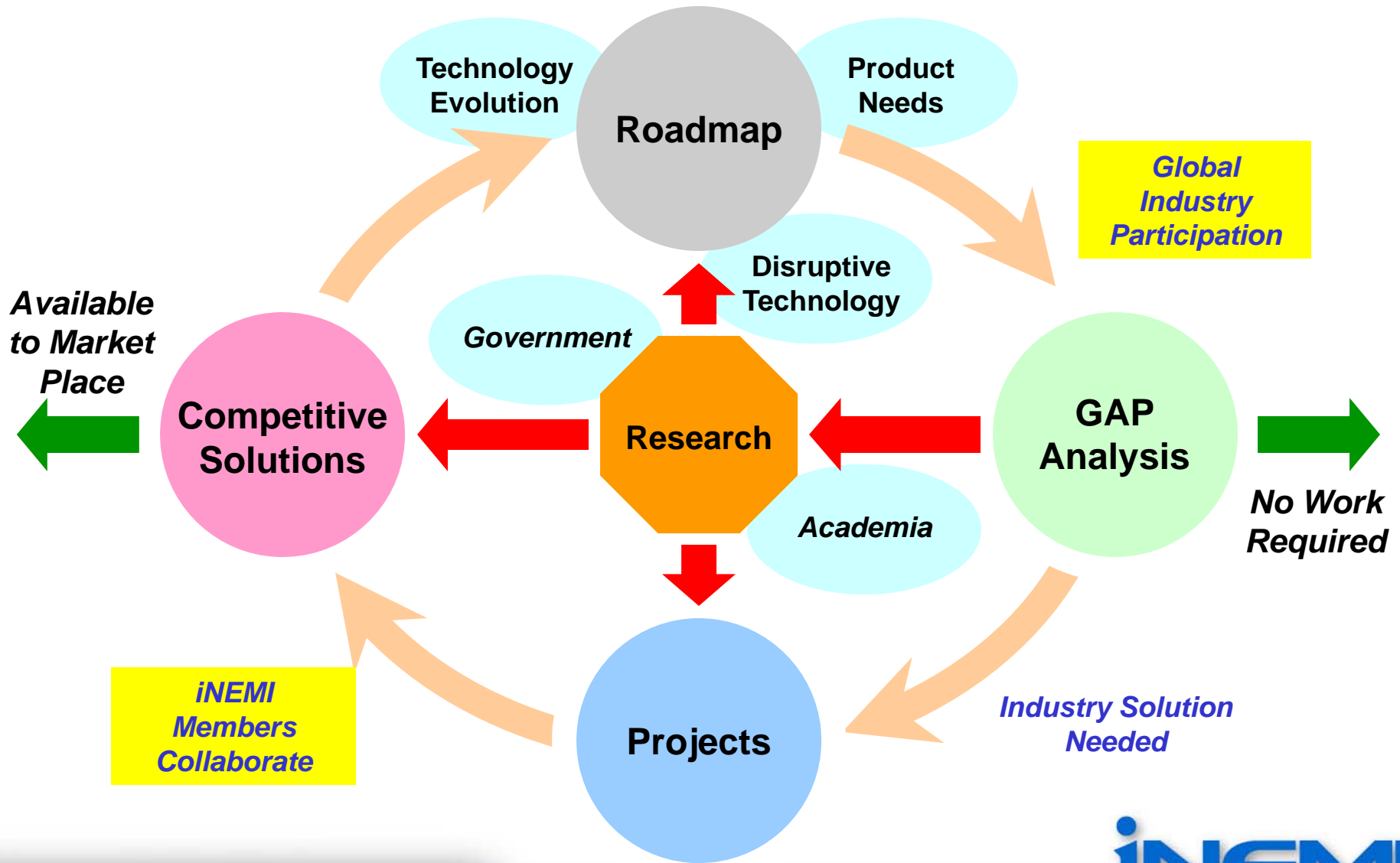
Advancing manufacturing technology

Some Definitions...

- **TWG - Technical Working Group**
 - Develops the roadmap technology chapters
 - Presently 21 groups
- **TIG - Technology Integration Group**
 - Develops technical/strategic Plan
 - Identifies project priorities:
 - Based on roadmap findings and gap analysis meetings
 - Acts as a Program Administrator for iNEMI projects
- **PEG – Product Emulator Group**
 - “Virtual Product”: future product attributes plus key cost and density drivers
 - Portable / Consumer
 - Office / Large Business Systems
 - Netcom Systems
 - Medical Products
 - Automotive
 - Aerospace & Defense



Methodology



2011 iNEMI Roadmap Goals

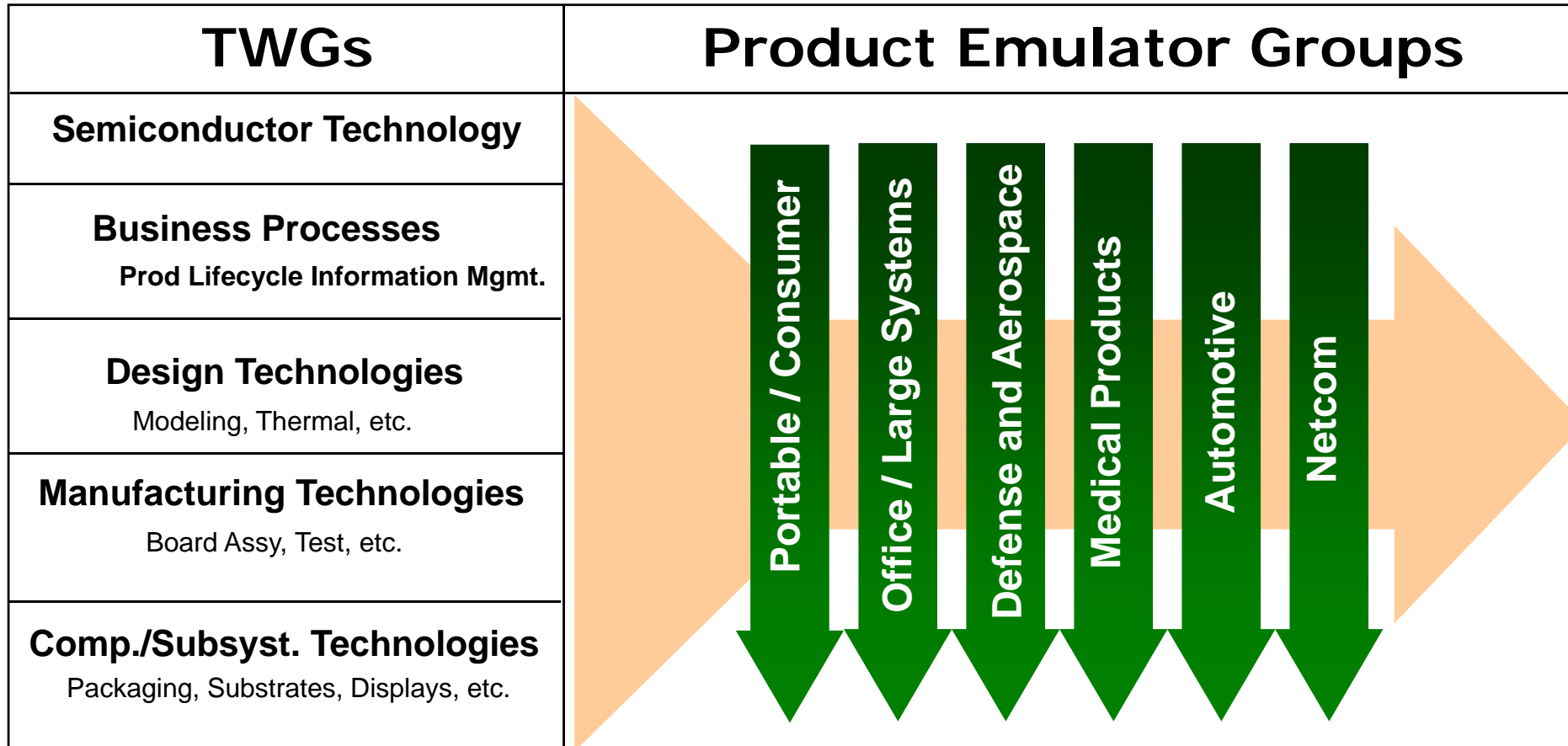
- **Maintain/expand strong linkages with other technology roadmaps/organizations**
- **Strengthen Product Emulator value:**
 - Utilize TWG Chair input on Key Attribute Spreadsheet formats prior to PEG kick-off
 - Leadership in place by SMTAI PEG kick-off meeting
 - Improve PEG Chapter availability for TWG use
- **Strengthen linkages with European and Asian organizations**
- **Expand emphasis on disruptive events (business and technical)**
- **Expand emphasis on **prioritizing** technical and market gaps and needs throughout roadmap**
- **Improve the “Executive Summaries” in individual chapters by highlighting the key points from the chapter**
- **Establish Aerospace / Defense PEG for 2011 cycle**
- **Transition TWG Chapter on Sensors to MEMS focus**
- **Move organic substrates to “Packaging” TWG to reduce confusion**
- **Restore TWG Chapter on Energy Storage & Conversion Systems**
- **Utilize Web based meeting option to increase roadmap meeting efficiency**

2009/11 Product Emulator Groups

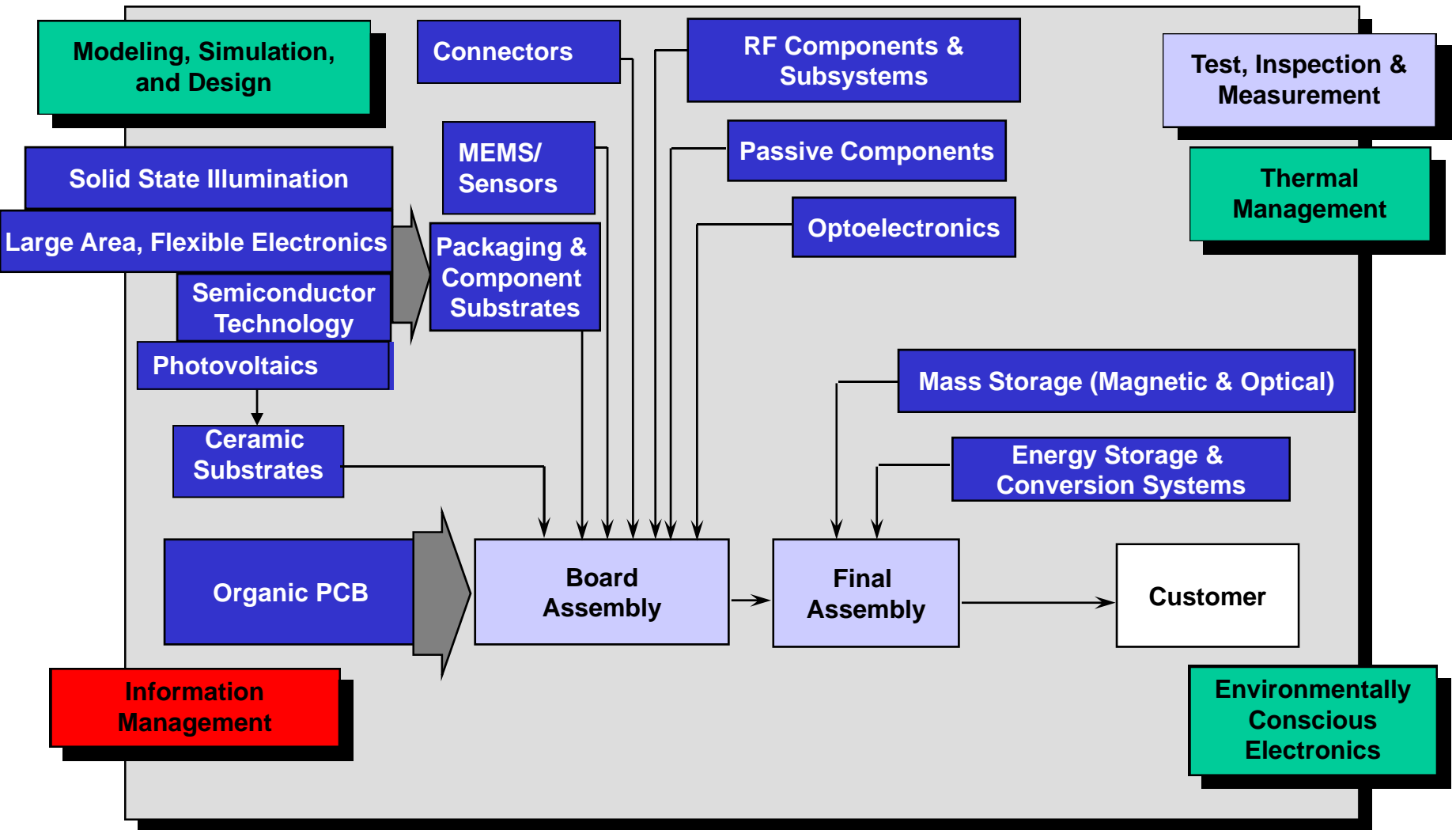
Product Emulator	Chair(s) 2009	Chair(s) 2011
Automotive Products	Jim Spall, Delphi	Jim Spall
Medical Products	Anthony Primavera, Boston Scientific	Anthony Primavera, Micro Systems Eng. Bill Burdick, GE Research
Consumer / Portable Products	Susan Noe, 3M	Shahrokh Shahidzadeh, Intel
Office/Large Business System Products	David Lober, Intel David Copeland, Sun	David Lober, Intel David Copeland, Sun
Network, Data, Telecom	John Duffy, Cisco	TBD
Aerospace/Defense	N/A	TBD Lockheed Martin

Roadmap Development

Product Sector Needs Vs. Technology Evolution



2011 Technology Working Groups (TWGs)



2011 TWG Leadership Status

Business Processes / Technologies	Chair(s)	Co-Chair(s)
Information Management	Eric Simmon, NIST	Jeff Pettinato, Intel
Design Technologies		
Modeling, Simulation & Design Tools	Yishao Lai, ASE	S.B. Park, Binghamton U.
Environmentally Conscious Electronics	Need Chair	
Thermal Management	Ravi Prasher, Intel	Azmat Malik, Consultant
Manufacturing Technologies		
Final Assembly	John Allen, Celestica	Reijo Tuokko, Tampere U.
Board Assembly	Dongkai Shangguan, Flextronics	Aaron Unterborn, Microsoft Ravi Bhatkal, Cookson
Test, Inspection & Measurement	Mike Reagin, Delphi	

2011 TWG Leadership (cont.)

Component / Subsystem Technologies	Chair(s)	Co-Chair(s)
Semiconductor Technology	Paolo Gargini, Intel	Alan K. Allan, Intel
Optoelectronics	Dick Otte, Promex	William Ring, WSR
Photovoltaics	Jim Handy, Objective-Analysis	Alain Harrus, Cross Link
Packaging & Component Substrates	Bill Bottoms, NanoNexus William Chen, ASE	
Passive Components	Philip Lessner, Kemet	
Connectors	John MacWilliams, Consultant	
RF Components	Ken Harvey, Advantest	Eric Strid, Cascade MicroTech
MEMS / Sensors	John McKillop, Tekton LLC	Raffaella Borzi, IMEC
Large Area, Flexible Electronics	Dan Gamota, Printovate	Jan Obrzut, NIST
Energy Storage & Conversion Systems	Need Chair	Need Co-chair
Interconnect Substrates (Ceramic)	Howard Imhof, Metalor	Ton Schless, Sibco
Interconnect PCB	John T. Fisher, IPC	Henry Utsunomiya, Consultant
Mass Data Storage	Roger F. Hoyt, Consultant	Tom Coughlin, Coughlin Associates
Solid State Illumination	Marc Chason, Consultant	

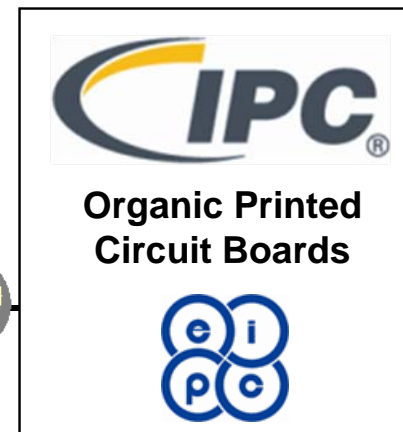
2011 Roadmap Schedule

- **3Q2009: Recruit Product Sector Champions, teams and refine data charts/Begin 2011 Roadmap Newsletter & send 2009 PEG chapters 8/1/09**
- **3/4Q09: Product Sector Champions Develop Emulators**
 - September 9, 2009 – Teleconference with P.E. Group Chairs
 - September 17, 2009 Web based meeting TWG/PEG Chairs (key attributes)
 - October 9, 2009 - Roadmap PEG Kick-off with PEG/TWG/TC at SMTAI
 - December 17, 2009 – Web based Teleconference with TC on PEG Emulator review
- **2009 “Word” chapter, format, Exec. Summary emailed to each TWG chair (Word) 1/4/2010**
- **Organizing Teleconference with TWG Chairs 1/11/2010:**
- **February , 2010 PEG Workshop/TWG Kick-off CA:**
 - Product Sector Tables Complete – PEG Chapter rough drafts written
 - Cross cut issues are initially addressed

2011 Roadmap Schedule - Continued

- April 9, 2010 TC/PEG/TWG face to face chapter status review meeting at APEX
- May 6, 2010 Telecon with TWG Chairs, Preliminary PEG Chapters Due
- May 2010 – Open Roadmap TWG Presentations in Las Vegas, NV (ECTC)
- June , 2010 European Roadmap Workshop – TBD
- June , 2010 – Asian Roadmap Workshop – TBD
- July 1, 2010 – TWG Drafts Due for TC Review
- August 4, 2010 – TC Face-to-Face Review with TWG Chairs at TBD
- **September 22, 2010 Final Chapters of Roadmap Due**
- October , 2010 Council of Members Briefing SMTAI
- October 31, 2010 – Edit, Prepare Appendix A-D, Executive Summary
- November 20, 2010 – Go To “Press”
- December 5, 2010 – Ship to Members
- April, 2011 – Industry presentation at APEX

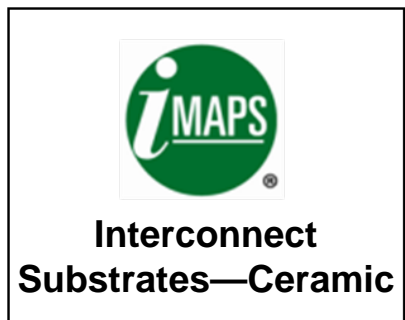
Ten Contributing Organizations



iNEMI / ITRS / MIG
Packaging TWG

iNEMI / MIG / ITRS
MEMS TWG

iNEMI / IPC / EIPC
Organic PWB TWG



iNEMI Information Management TWG

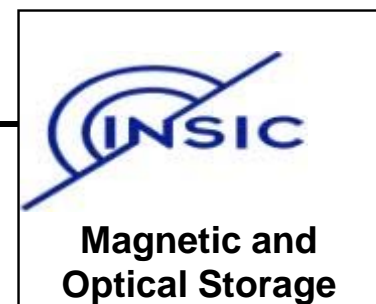


iNEMI Board Assembly TWG



iNEMI Optoelectronics TWG

iNEMI Mass Data Storage TWG



IEEE COMPONENTS, PACKAGING AND MANUFACTURING TECHNOLOGY SOCIETY



www.inemi.org

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