

MEMS Education Workshop:

Working Lunch: Optical/RF MEMS

January 30, 2005 (Miami)

People

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Reza Ghodssi (Univ of Maryland)

Working Lunch Report: Priorities

1. Diffuse MEMS into regular curriculum while maintaining its scientific merit: toward becoming a “field”
2. Breaking the barriers between the disciplines
3. Regular undergraduate curriculum: “significant” to start the students early
4. Major in MEMS (or Microsystems): depending on the existing expertise within each department, focusing on different topics
5. Infrastructure is needed but does it work at each institution?!: hands on experience is invaluable
6. Depending on the nature of the curriculum, need the the right books: fundamentals and specific topics
7. Developing a new course will benefit from having multiple instructors: learn as you teach
8. Need for funding: \$\$ for design, fabrication and testing
9. System education: understanding the applications for the given MEMS pieces/modules
10. Internships must provide valuable experience: Industry vs. National Labs?

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Report: *Optical/RF MEMS Courses*

- Challenges
 - Encourage students to take your course
 - Inserting it in the existing curriculum by embedding it
 - Persistence and attention to details
 - Lowering the barriers i.e. RF MEMS part of electro-physics
 - To make a successful product: need a market
- Best Practices
 - Right background in RF and Optics
 - Introductory course for ALL students (faculty!)
 - Testing and instrumentation lab is a MUST
 - Historical evolution must be part of each course

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Working Lunch: Topics

- **All Tables *should* Discuss:**
 - Prioritize topics for an ideal MEMS curriculum (Top 10)
 - Generate list first (<5 to 10 min) and then sort list (<5 to 10 min)
- **All Tables *may* Discuss any of the following:**
 - List the Top 5 Challenges and Top 5 Best Practices for:
 1. Integrating MEMS into Engineering School Curricula (Saif)
 2. Integrating Hands-On Laboratories into Courses (J. Judy)
 3. Integrating Foundry Runs into Courses (Sheplak)
 4. Integrating MEMS Design Projects into Courses (Pruitt)
 5. Integrating CAD into Courses (Turner)
 6. BioMEMS / Microfluidics Courses (Voldman)
 7. Optical/RF MEMS Courses (Ghodssi)
 8. Student-Only Table selects any topic (Candler/Motta)

Topic of
emphasis
indicated by
moderator