



Micro and Nanotechnology
Commercialization
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MANCEF Quarterly Newsletter

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MESSAGE FROM THE PRESIDENT, ROGER GRACE

Happy Fall or Happy Spring depending upon where you live in the world. If you are a new member, I would like to welcome you to our organization and thank you for your support of COMS 2003. To our ongoing members, it is nice to have you with us and thank you for your support.

We recently held a successful Executive Board election. Congratulations to Kees Eijkel (Mesa +, The Netherlands), the new President Elect, who will take office in September 2004. Our other newly elected Executive Board members are Joe Brown (Suss Microtec, USA) and Job Elders (C2V, The Netherlands). I would like to thank Election Committee Chair David Tolfree and the election committee for a job well done.

Many MANCEF members have just returned from a hugely successful COMS 2003 in Amsterdam. The Sept. 8-11 event had over 260 attendees and over 100 speakers. I'd like to thank Henne Von Heeren, Job Elders, and Kees Eijkel along with their great staff in creating such a tremendous event for our attendees.

EVGroup, STS, Zyvex, and Sandia National Labs sponsored the COMS 2003 Awards, which was the highlight of the Monday evening gala dinner. MANCEF's Charter Members gave awards to contributors of the best conference papers. We also announced the next location for COMS 2004: Edmonton, Canada. Leigh Hill of NanoMEMS Edmonton and team gave us a presentation on the area, the city, and the conference center. We left COMS2003 really excited for COMS2004. Contact Carol Steele (csteele@marine.usf.edu) if you are interested in serving on any COMS2004 organizing committees.

Following the Amsterdam event, ten MANCEF speakers attended the "First MEMS in Mexico" Conference held in Puerto Vallarta co-sponsored by the U.S.-Mexico Foundation for Science. MANCEF

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members addressed the topic of international cooperation for Mexico's market entry into MEMS. Look for other upcoming Micro-Nano conferences are scheduled for Massachusetts, London, and Melbourne.

Over the past year, MANCEF has grown in stature and raised awareness in the industry. The many contributions from the Executive, General, and Advisory Boards have created a commanding position as the leading educational organization in the world for the commercialization of Micro and Nanotechnology. It is with the generous contributions of time and talent of all of the dedicated people and to you, our membership, that I am so grateful. I look forward to another challenging, and even more successful, coming twelve months.

Congratulations COMS Awardees!

[EV Group Erich Thallner Pioneer in Microsystems Technology Award:](#)
Johannes Herrnsdorf HLPlanar

[Zyvex Jim van Ehr Nanotechnology Commercialization Excellence Award:](#)
**Matthias Kautt & Peter Bley
Forschungszentrum Karlsruhe**

[Surface Technology Systems Microsystems Commercialization Award:](#)
Paul Atherton NanoVentures

[University of Twente & University of New Mexico Micro & Nano Commercialization Education Award:](#)
Kathryn Hanselmann Sandia National Laboratories

COMS2003 Summary

David Tolfree and Kees Eijkel

The Eighth MANCEF conference on the Commercialization of Micro and Nanosystems (COMS 2003) was held at the Grand Hotel Krasnapolsky in Amsterdam on 8-11 September 2003. 262 delegates attended, including 37 Exhibitors. Rein Bemer, the Dutch Government's Director General for Innovation, gave the opening welcome. Roger Grace, the President of MANCEF added his welcome to delegates and gave an historical background to the COMS series of conferences and the significant part they have played in furthering the commercialization of micro-nanotechnology.

The conference programme was designed to be consistent with MANCEF's objectives for COMS conferences, following the lessons learned from previous conferences. The conference was structured around three plenary sessions, followed by breakout sessions which allowed over 100 speakers to address 20 subject areas. Keynote speakers from the US, Dutch, and UK Governments and from leading companies in the micro-nano field led the first plenary session. Roel Pieper, former board member of Philips Electronics and CEO of Favonius Ventures addressed the changing paradigms in business today, reshaping the role of individuals and entrepreneurs. Paul Atherton of Nanoventures gave well-received conclusions to the

Sandia National Laboratories Policy & Programs for Government-University-Industry Partnership Award:

Peter Jonson Australian Institute for Commercialisation

session with a perspective on the MEMS/MST industry and the status of two public companies.

The conference produced a stimulating environment for quality discussion and debate on the important issues in the MEMS industry. Through networking, delegates had the opportunity to meet and interact. Over the three and half days, many useful contacts were made and business relationships seeded.

There was a very positive feedback from delegates. Feedback forms were collected and are being analyzed. Equally important was the verbal comments and buzz. There were some very good suggestions for improvements, but genuine satisfaction carried the day. We'd like any additional comments from 2003 delegates to help MANCEF plan future conferences. These and others will be included in a more detailed report on the conference currently being compiled. An announcement was made at the conference dinner that COMS2004 will be located in Edmonton in Canada. This will mark the first ten years of the COMS conferences started in Banff in 1994, thus completing a decade of success.

Advertisement

Commercialization of Micro and Nano Systems (COMS) Conference Proceedings

COMS 2003 provides you with the resources to compete, to collaborate, to find customers, and to further your commercialization process. If you didn't make it to COMS 2003, you can get a hard copy of the proceedings. Compact disk versions will be available later in 2003.

MANCEF members pay no shipping & handling for proceedings.

[Order your copy of the COMS 2003 or COMS 2002 proceedings today \(.pdf\).](#)



MANCEF Captures Prestigious Beacon Award for COMS 2002 Promotional Efforts

In a recent ceremony hosted by the Business Marketing Association's Silicon Valley Chapter, MANCEF was awarded a first place (Gold Prize) in its annual Beacon Award competition for its entry describing the promotional program for COMS 2002. The award was received on behalf of MANCEF by Gene Burk (Dalsa) and a member of the MANCEF Advisory Board. The COMS 2002 Promotion Committee, chaired by Roger Grace (Roger Grace Associates), and the Michigan Economic Development Corporation (MEDC) were acknowledged for their efforts in planning, developing and executing an integrated marketing communications program to support participation in the most successful COMS 2002 program held in Ypsilanti Michigan in early September 2002.

The Beacon Awards are held annually and are considered one of the most prestigious regional award competitions sponsored by the International Business Marketing Association. The award competition is open to all business-to-business marketers worldwide. The awards acknowledge excellence in marketing communications in over 20 categories including print media advertising, annual reports, brochures, web sites, and public relations. MANCEF captured a first place award in the area of special events.

The MANCEF entry described the broad and multi-faceted program undertaken in the 12 month campaign developed and executed by the COMS 2002 Promotion Committee and MEDC, including communications elements of print media advertising donated to COMS 2002 by its many media sponsors, the creation of two ads, the creation, execution and mailing of a direct mail piece, website, and email blast newsletters spearheaded by Steve Walsh and his University of New Mexico students.

The award was based on the ability to successfully integrate all elements of a promotion campaign to meet or achieve the program objectives. Questionnaires submitted by the COMS attendees acknowledged the effectiveness of the integrated MARCOM program in influencing their decision to attend the COMS 2002.

Sincerest thanks to all of the MANCEF volunteers, who participated in the development and execution of the program, especially MEDC and Mahendra Ramsinghani, Tim Daman and Brent Case and their MEDC team for all of their efforts to make the COMS 2002 promotional campaign so successful. It was literally an award winning program!

Promoted Asian Events:

[Commercialisation of Small Technologies in the Asia Pacific](#)

The Australian Institute for Commercialisation and the Victorian Government's Commercialise 2003 Series will host a regional commercialization workshop on Monday December 8th in Melbourne, Australia. Keynote speakers are Sir Alec Broers, President, Royal Academy of Engineers, Emeritus Vice Chancellor of the University of Cambridge, UK, and Dr Jih Chang Yang, Executive Vice President, Industrial Technology Research Institute, Taiwan.

[International Conference on Intelligent Sensing and Information Processing 2004](#)

The International Neural Network Society and The Institute of Smart Materials, Structures, and Systems will

convene this cross-disciplinary event in Chennai, India between January 4-7, 2004 integrating Micro and Nano contributions to sensor, machine intelligence, biomimetic, and biomedical applications. See www.mancef.org/events.htm for more information on both of these events.

Conference Summaries

From Banff, AB, Canada – James Wylde

The International Conference on MEMS, Nano, and Smart Systems (ICMENS) was held 20-23 Jul 2003 in the beautiful town of Banff, Alberta, Canada in the Canadian Rockies. Following AIRDS in Albuquerque, NM in May 2003, MANCEF continues its support of NAFTA countries by co-sponsoring the event with i-Core, Canada's National Institute for Nanotechnology, MicroNET, and the Canadian Aeronautics and Space Institute. The conference was organized jointly by the University of Alberta and the University of Calgary.

The conference attracted over 200 people from around the world and offered over 80 presentations by Micro and nanotechnology leaders. Yoseph Bar-Cohen, Hiro Akinago, Mark Johnson, and Henry Baltès delivered keynote addresses. Steve Walsh, Founding Past President of MANCEF, offered his thoughts on micro and nanotechnology roadmapping with his keynote address: Commercialization of Nano Technologies, a Fantastic Voyage.

The MANCEF supported session on micro and nano commercialization attracted four top-notch speakers:

- Keith Ritala from the Washington Technical Center gave his thoughts on the challenges met and overcome when successfully operating an open-access micro fabrication facility
- Jim Aberson from Colibrys SA gave an excellent presentation on his companies' unique post-fabrication techniques that have enabled the successful commercialization of telecom MEMS
- Xiaoyang Zhu gave an interesting presentation that described his successful commercialization of a university research project with MicroSurfaces Inc.
- Helge Luesenbrink from EV Group described how his company is making the leap to nano technology using the toolsets and methods available from their work on micro technology

The conference highlighted the position of Canada and the Province of Alberta as a leader in the successful commercialization of micro and nano technology with organizations such as Micralyne, the Canadian Microelectronics Corporation, and the newly formed National Institute for Nano Technology (NINT). MANCEF thanks everyone who stopped by the MANCEF booth. We look forward to seeing everyone again next year.

[COMS 2004 Information](#)

When: August 29 - September 2, 2004 Where: Edmonton, Canada This announcement is a [call for abstracts for the 9th International Conference on the Commercialization of Micro and Nano Systems](#): COMS 2004.

Abstract Submission Deadline: 23 April 2004 Author Notification: 07 May 2004

Sponsors

(As of 29 April 2004)

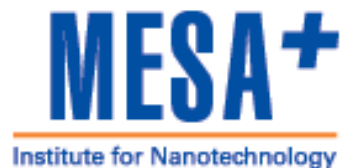
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Conference Summaries

From Ottawa, ON, Canada – James Wylde

MANCEF was proud to sponsor the 3rd Canadian Workshop on MEMS (CWMEMS) held 22 Aug 2003 at the historic Chateau Laurier Hotel in Ottawa, ON, Canada. The conference was held in conjunction with The Canadian Microelectronics Corporation (CMC) and sponsored by DALSA Semiconductor, Anritsu, NanoMEMS Edmonton, Coventor, BigBangWidth, EVG, Suss Microtec, Corning Intellisense, and ROI Engineering. The conference attracted over 100 people from the Canadian and international small tech communities and allowed over 50 students from the Canadian MEMS and nano community to showcase their work. MANCEF would like to congratulate Lisa Hunt, an MSc candidate in Dr. Ted Hubbard's group at Dalhousie University, for winning the BigBangWidth award for demonstrating the most novel and industrially relevant research results in MEMS and Microfluidics for her poster: Investigation of Micromachined Scratch Drive Actuators. The plenary featured four presentations on:

- Karen Kaler from the University of Calgary presented his groups work on micro and nano motion in fluidics using applied electric fields.
- Bob Sulouff from Analog Devices presented his thoughts on the successful commercialization of integrated MEMS accelerometers and gyros.
- Gabriel Rabiez from the University of Michigan summarized his groups activities on RF MEMS and advanced packaging techniques.
- Paul Hagelin from NanoGEAR described how a small start-up optical switch manufacturer worked to overcome the challenges in a telecom downturn.

The panel discussion featured the plenary speakers as well as Peter Grutter from McGill University in Montréal and Luc Oullet from DALSA Semiconductor who discussed the Commercialization of MEMS and Nanotechnology Through Integration. Giving their thoughts and fielding questions from the audience, the salient conclusions of the panel include:

- Integration will be an important component of successful commercialization of small tech and is a mandatory component of nano-science.
- Integration, while important, is not necessary and the added costs of development must be recoverable with high volume, low cost, products in favour of hybrid integration and co-packaging multi chip modules.
- To make integration successful, it will be necessary to assemble cross disciplinary teams of mechanical engineers, electrical engineers, chemists, physicists, etc.
- Universities can foster this cross disciplinary activity but must be careful to maintain excellence in one candidate rather than dilute the value of an education.
- Standardization in design tools and fabrication processes will be important to enable commercialized,

integrated MEMS.

Please see the [CWMEMS website](#) for more information.

Highlight

Special Small Times Insert

Following up on the successful collaboration at SEMICON West, MANCEF and MIG partnered with Small Times magazine to offer a special "[MEMS: Meeting the Challenge](#) (.pdf)" insert to the September/October edition of Small Times magazine.

You can read the [Small Times online magazine](#) and order your subscription today.



Conference Summaries

From San Francisco/San Jose – Roger Grace and Scott Bryant

MANCEF President Roger Grace (Roger Grace Associates), MANCEF Executive Board Member Joe Brown (Suss Microtec), and Ellen McDevitt (MEMS Industry Group) co-chaired an all-day MEMS technical session during the annual SEMICON West show at San Francisco's Moscone Center on July 16. Over 75 attendees participated in the MEMS workshop from both the semiconductor, as well as the MEMS areas.

Nine industry acknowledged experts gave presentations on the theme "MEMS: Lessons Learned from the Semiconductor Industry". The theme was selected in order to aid companies, who are looking to diversify their semiconductor product portfolios and considering introducing MEMS products by comparing and contrasting the pathways and obstacles of these overlapping technologies. In addition to the presentations, a six-person panel discussion made up of equipment and industry supplier representatives shared their experiences on the topic. Twenty-four MEMS-specific exhibits ran simultaneously with the technical session in the MEMS Pavilion area, but almost 90 SEMICON West exhibitors listed themselves as working in the MEMS arena.

The MEMS session featured a powerhouse of speakers from leading materials, equipment and device companies. Speakers included Stan Myers, SEMI President, Al Pisano of UC Berkeley, and representatives from companies, who have significant businesses in both the semiconductor and MEMS industries including Motorola, IBM, Hewlett Packard, and Veeco. Especially memorable was the panel on "Lessons Learned" moderated by Roger Grace. Among the panelists were MANCEF Board members Andrew McQuarrie (Surface Technology Systems) and Peter Podesser (EV Group), who expressed views on entry strategies for MEMS markets ranging to the ongoing debate over standards setting and the tradeoffs to MEMS functional integration.

MANCEF members will be directed how to access these proceedings under a separate mailing.

Advertisement

International MEMS/MST/Top Down Nano Roadmap

What is Microsystems? How can we go from conceptualization to real products and profits? Where are the major markets for MEMS? Over 400 contributors from Asia, Australia, Europe, & North America give you the answers you need.

[Purchase the Micro-Nano Roadmap now](#)

MANCEF members receive a \$200 discount.



Conference Summaries

From Puerto Vallarta, Mexico – Scott Bryant and Roger Grace

Following successful events in Albuquerque, New Mexico and Juarez, Mexico earlier this summer, MANCEF has had the great pleasure to collaborate with the US-Mexico Foundation for Science to hold the First MEMS Meeting Mexico 2003 in [Puerto Vallarta, Mexico](#). The meeting follows on from the Annual Ibero American Research and Development Summit (Albuquerque, USA - May 2003) and the Bi-national Workshop on Microsystems Packaging Technology (Juarez, Mexico – July 2003). [Mr. Guillermo Fernandez](#), Executive Director of the US-Mexican Foundation for Science, [Dr. Jose Mireles](#) of the Autonomous University of Juarez, Dr. Frank Lewis of the University of Texas at Arlington, and Dr. Steven Walsh of the University of New Mexico were the key organizers of this very successful event.



Left to Right: Roger Grace, X, X, Dr. Alejandro Gonzales Hernandez, X, Steve Walsh

Ten MANCEF members addressed over 80 Mexican scientists, engineers, university professors and economic development leaders on the topic of MEMS. The program of 28 speakers over the all day Friday and Saturday venue provided attendees with a condensed view on the worldwide MEMS market and Mexico's intention to find areas of opportunity to enter the MEMS marketplace. The keynote speaker was [Dr. Alejandro Gonzales Hernandez](#), General Director of Training and Innovation Technology of Mexico's Economic Ministry, who spoke to the Mexican government's commitment the process of engaging academic, private, and international resources to guide Mexico's entry in the MEMS market. Subsequent speakers spoke about the importance of packaging, plastics, biomedical applications, educational infrastructure, and cluster development as focus areas for Mexico's initiative.

International cooperation was a key theme of the event. Dr. Regan Stinnett of Sandia National Laboratories highlighted the vision of Microsystems as providing the foundation for a revolution in manufacturing over the coming century, an important partnering opportunity for the United States and Mexico. Discussions made it clear that the focused cooperation between the universities, research labs, businesses, and governments of

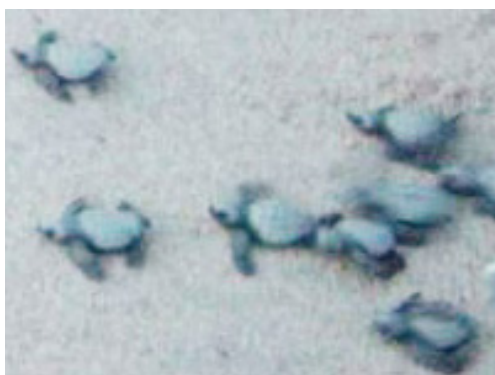
the states of Chihuahua, Nuevo Leon, Texas, and New Mexico have distinct potential to foster development of a MEMS cluster along the U.S.-Mexico border. MANCEF's speakers offered the concept of Mexico, Canada, and the United States leveraging the North American Free Trade Agreement to foster the emergence of Mexican MEMS businesses, as well as projecting the vision of building a Pan-American Micro-Nano Highway to supply the markets of the Americas. Currently, other emerging Micro-Nano efforts in the Americas are located in Costa Rica and Brazil.

It was gratifying that MANCEF could provide this level of support to the Mexican initiative. This is truly what makes MANCEF special...our ability to use and deploy the vast intellectual capital resident within our volunteers to support the communication and education of commercialization of Micro and Nanotechnology. MANCEF is looking forward to continuing its relationship with Mexican MEMS.

Mass Leatherback Turtle Release

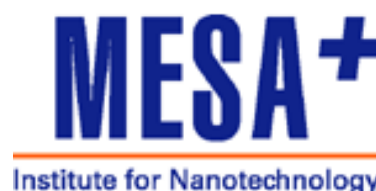
A unique and wonderful aspect of the Puerto Vallarta meeting was releasing day old leatherback turtles into the ocean waves to start their lives. The Hotel Camino Real is an active supporter of protection of turtle nesting sites and conservancy efforts along its shoreline. Photos courtesy of Dr. J.C. Chiao.

Click the photos to see larger versions:



Membership

MANCEF would like to thank and 'Welcome' our newest members, whether individual, corporate, academic, or government. For those renewing your membership, please see: www.mancef.org/members.htm.



MANCEF Members Only Special Benefit

SEMICON West MEMS Workshop Presentations Online

MANCEF members may access the conference presentations for the SEMICON West MEMS Workshop online. Members will be mailed a web address separately from the newsletter. Please be looking for it in your email shortly. This is a one time benefit of your paid membership; please do not transfer the proceedings to non-MANCEF members. All of the materials are copyrighted and should be used for personal use only. Copying or re-publication will require written permission from SEMI itself.

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