

## MANCEF Quarterly Newsletter

Second Quarter 2003, Vol. 1

April 1, 2003

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Roger Grace  
Roger Grace Associates [rgrace@mancef.org](mailto:rgrace@mancef.org)

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Carol Steele  
University of South Florida [csteele@mancef.org](mailto:csteele@mancef.org)

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David Tolfree  
Technopreneur Ltd [dtolfree@mancef.org](mailto:dtolfree@mancef.org)

#### VP Asia/Pacific

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IIRD - Victoria  
[jniall@mancef.org](mailto:jniall@mancef.org)

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Michigan Technological University [rwarrington@mancef.org](mailto:rwarrington@mancef.org)

#### Founding Past President

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University of New Mexico [swalsh@mancef.org](mailto:swalsh@mancef.org)

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[bhigdon@mancef.org](mailto:bhigdon@mancef.org)

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Bookham Technology [jwylde@mancef.org](mailto:jwylde@mancef.org)

#### Executive Director

### MESSAGE FROM THE PRESIDENT, ROGER GRACE

The last six months have been an exciting experience for me as the new President of MANCEF. I thank you all for the opportunity and pleasure of being the MANCEF President. A well deserved "Thank you" to Steve Walsh, a founding past president, for all of his tireless, continuing work and generous contributions to MANCEF's growth.

I would like to briefly highlight important activities MANCEF has undertaken since COMS 2002. We have started a project-driven approach to address the major activities necessary for MANCEF's expansion and continued success. COMS 2003 David Tolfree, Job Elders, Kees Eijkel, and Henne van Heeren are spearheading the COMS 2003 program due to be held in Amsterdam, The Netherlands between Sept. 8th -11th. If you are interested in serving on a COMS committee, please contact David Tolfree at [d.w.i.tolfree@dl.ac.uk](mailto:d.w.i.tolfree@dl.ac.uk). For additional information, please visit the COMS 2003 website at [www.mancef-coms2003.org](http://www.mancef-coms2003.org) or [www.mancef.org/coms2003.htm](http://www.mancef.org/coms2003.htm).

The deadline for abstract submission is May 1. COMS 2004 Carol Steele, VP North America, is heading a committee to promote, evaluate, and recommend the location of COMS 2004. To date, four locations are under consideration. Additional proposals are being solicited. If you can suggest additional North American candidate venues, please see [www.mancef.org/coms2004.htm](http://www.mancef.org/coms2004.htm) for contact information and details. COMS2004 Candidate proposals are due by June 2 and a decision is planned by July 22. INTERNATIONAL MICROSYSTEMS ROADMAP Steve Walsh, Job Elders, and many contributors representing five continents, worked tirelessly to create the 15 chapter, 600+ page International Microsystems roadmap. The marketing committee is initiating a major promotional effort and a customer satisfaction study to fine tune the next issue of the roadmap which is due to appear in mid-2004. Please see <http://www.mancef.org/roadmap.htm>. STRATEGIC PLANNING The Board held a strategic planning workshop in Naples, Florida on January 23-25, 2003. We decided to create a Strategic Plan to guide MANCEF over the next five years. We'd like your support to

Scott Bryant  
Intl. Tech. & Trade Ventures [sbryant@mancef.org](mailto:sbryant@mancef.org)

staff the strategic planning committees. Contact our [Executive Director](#) or [Bob Warrington](#) for more information. EXECUTIVE OFFICE Scott Bryant is the new Executive Director. Scott has assisted with the COMS conference series since 2000 in Santa Fe. He will be responsible for executing MANCEF's core mission and will work with the Executive Office team on day-to-day operations. MARKETING INITIATIVES Our primary marketing goal is to brand MANCEF as a global educational resource for the micro and nanotechnology communities. We plan to:

- Create strategic affiliations with important organizations
- Participate in and sponsor technical conferences worldwide
- Highlight sponsored events and activities on our website, [www.mancef.org](http://www.mancef.org).

MANCEF has been pursuing many varied activities through the dedication, generosity and hard work from its volunteers, especially the Executive Board. I encourage you to become more involved in the activities of the organization. Thank you again for your vote of confidence in selecting me as the President of this prestigious organization.

R. Grace

## MANCEF PROMOTED EVENTS

May 28-29	Annual Iberoamerican Research and Development Summit	Albuquerque, NM, USA	<a href="http://www.irdsummit.org/">http://www.irdsummit.org/</a>
June 6	UK Nanotechnology Commercialization Infrastructure Workshop	Manchester, UK	<a href="mailto:d.w.l.tolfree@dl.ac.uk">d.w.l.tolfree@dl.ac.uk</a>
June 8-12	Transducers'03	Boston MA, USA	<a href="http://www.transducers03.org/">http://www.transducers03.org/</a>
June 15-17	HARMST 2003 Workshop	Monterey, CA, USA	<a href="http://www.ca.sandia.gov/HARMST2003/">www.ca.sandia.gov/HARMST2003/</a>
June 16-18	New England Nanotechnology Workshop	Boston, MA, USA	<a href="http://www.mancef.org/nanomanufacturing.htm">www.mancef.org/nanomanufacturing.htm</a>
July 14-18	SEMICON West	San Francisco, CA, USA	<a href="http://events.semi.org/semiconwest">events.semi.org/semiconwest</a>
July 20-23	The 2003 International Conference on MEMS, NANO, and Smart Systems	Banff, AB, Canada	<a href="http://www.icmens.org">www.icmens.org</a>
Sept 8-11	8th International Conference on the Commercialization of Micro and Nano Systems: COMS 2003	Amsterdam, The Netherlands	<a href="http://www.mancef.org/coms2003.htm">www.mancef.org/coms2003.htm</a>

## INTERNATIONAL MEMS/MST/TOP DOWN NANO ROADMAP

The fast growing "Small Tech" industry is an industry holding both promises and pitfalls for those firms supplying, manufacturing, funding, and using products made using the Small Tech technology base. This industry is in an early stage of rapid technological development, offering both opportunities for great profits and threats of failure for new and existing firms. Typical of a chaotic industry, there are dozens of new entrants every year. There are also numerous competing front-end and back-end technologies for every one of the many MEMS based products commercially available. Our roadmap separates front-end technologies into silicon-based IC like MEMS and non-IC like MEMS production. Manufacturers, however, almost always focus on a limited subset of the front-end manufacturing technologies available. The industry's growth is unmistakable; and where there is growth driven by new, early-stage technologies, there is opportunity.



## Who is this Document for?

Microsystems based technology is the second micro-manufacturing revolution and is poised to be every bit as universal as its cousin technology, semiconductors. The purpose of the International Microsystems Roadmap (IMR) is to assist in the understanding of an industry based on this revolutionary technology known alternatively as: Microsystems Technology (MST), MEMS (Micro Electro Mechanical Systems), Micro-Machining, or even Top-Down MicroNanotech. This document is designed for those seeking to understand the industry and where future growth and profit opportunities lie, as well as for those intending to develop their own commercialization roadmaps for their products in specific industry segments. To that end, the roadmap provides general trends in 15 specific areas essential to the commercialization process of MST/MEMS/Micromachining-based products. This roadmap in particular aims to:

- "Speed-up" the process of commercialization of products based on Microsystems technologies through the pre-competitive sharing of information between the firms and contributors involved in this road mapping process.
- Assist decision makers and their staff members to understand the industry, its technology, markets, and potential for future growth.
- Guide both technologists, investors, marketing professionals, and entrepreneurs in conceptualizing the reality of the technology and its potential applications, thereby providing value to the entire stakeholder community, operating in relation to this technology.

## How to Order

Internet: <http://www.mancef.org/roadmap.htm>

Phone: +1-619-232-9499

**COMS2003**  
8<sup>th</sup> International Conference on the Commercialization of Micro and Nano Systems: COMS 2003  
September 8 - 11, 2003  
Amsterdam, The Netherlands, The Grand Hotel Krasnapolsky

Sponsored by:  
**MANCEF**  
[www.mancef.org](http://www.mancef.org)  
Micro and Nano Systems Commercialization Roadmap Foundation

Organized by:  
MESA+, C2V and OnStream

COMS2003 fosters the commercialization of micro- and nanotechnologies, addressing

COMS2003 fosters the commercialization of micro- and nanotechnologies, addressing commercialization issues unique to these emerging and disruptive technologies. The conference is expected to draw over 300 international leaders in the field of Micro- and Nanotechnology.



Oral presentations, panel discussions and invited talks will be given by prominent industry professionals. The capital formation workshop for organizations seeking funding is likely to be one of the highlights of the conference.

During the conference an exhibition of the latest commercial developments in the areas of products, services and equipment for micro- and nanotechnology are shown. The conference will be held in the heart of Amsterdam, the beautiful and lively capital of the Netherlands.



For more information and registration, see:  
[www.mancef-coms2003.org](http://www.mancef-coms2003.org)  
[info@mancef-coms2003.org](mailto:info@mancef-coms2003.org)



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## [New England International Nanomanufacturing Workshop](#)

### **Breaking the Barriers to Nanomanufacturing to enable the Commercialization of Nanotechnology**

June 16-18, 2003

Northeastern University, Boston, MA

Organized by: Northeastern University, University of Massachusetts Lowell and the University of New Hampshire

Sponsored by: [Micro and Nanotechnology Commercialization Education Foundation](#) (MANCEF)

The Nanomanufacturing Research Institute at Northeastern University, University of Massachusetts Lowell and the University of New Hampshire will host the 1<sup>st</sup> International New England Nanomanufacturing Workshop on June 16-18 in Boston, MA. The Workshop will be held at Northeastern University Boston Campus. The event is expected to draw more than 100 engineers, research directors and scientists from industry and academia, equipment vendors and suppliers to address current and future challenges and advances in nanomanufacturing.

Nanomanufacturing is expected to be high-volume, high-rate, integrated assembly of nano-elements into commercial products. This involves controlling position, orientation, and interconnectivity of the nano-elements. Increases in worldwide investments over the past few years have propelled nanoscience research scientific breakthroughs to a new level. To ensure that these discoveries lead to commercially viable products, it is important to address fundamental scientific barriers to nanomanufacturing, in parallel with the ongoing nanoscience research. The goal of the workshop is to address moving from laboratory fabrication and prototyping, into industry-floor manufacturing. The workshop will address the following:

- What are the technical barriers to scale-up?
- What are the technical barriers to integrating nano-elements with micro- and macro-structures and devices?
- What past experiences (lessons learned) in scaling up processes (e.g., microelectronics, MEMs, pharmaceuticals, and materials) can be applied to nanomanufacturing?
- What is the best path for industry, academia and government labs to collaborate to overcome both technical and non-technical (e.g., IP, commercialization) barriers?

### **Preliminary Program**

**Monday, June 16, 2003:**

## Tutorial: Basics of Nanomanufacturing

This tutorial covers the basic issues and applications in nanomanufacturing and reviews current and future technologies that could be used to overcome nanomanufacturing barriers.

8:30-12:00	Control and Removal of Defects in Nanomanufacturing
12:00-1:00	Lunch
1:00-2:45	Self and Directed Assembly of nanowires and organic molecules
3:00-5:00	High Rate/High Volume Nanomanufacturing of Polymers

## Tuesday, June 17, 2003

8:30	Introduction to Nanomanufacturing - Dr. Doumanidis, NSF
9:00	Issues in Commercialization of micro and nanotechnology, Micro and nanotechnology Roadmap, MANCEF
9:30	Report on the conclusion of the NSF Nanomanufacturing Workshop
10:00-10:30	Break
10:30-12:00	Invited talks from industry highlighting commercial applications (Triton Systems, Zyvex Corporation, etc.)
12:00-1:00	Lunch
1:00-3:00	Session 1: Nanomanufacturing of nanoelectronics, sensors and devices
3:15-4:15	Panel: Nanomanufacturing Tools (Characterization, Assembly, etc.)
4:30-5:30	Panel: Investment in Nanomanufacturing (government and private investments)
5:30-7:30	Poster Session and reception

## Wednesday, June 18, 2003

8:30-12:00	Session 3: Nanomaterials (Nanocomposites and polymeric Materials)
12:00-1:00	Lunch
1:00-3:00	Session 4: Nanomanufacturing of Biomedical Applications
3:30-4:30	Panel: Reliability in Nanomanufacturing

## Workshop

The workshop will take place at Northeastern University Boston Campus, November 12-13, 2002.

## Tutorial

Micro & Nanoscale Defects in Micro & Nanofabrication, fundamentals of Self-assembly and high volume/high rate processing.

## Registration fees\*

	Early (before May 16, 2003)	Late (after May 16, 2003)
<b>Workshop**</b>	\$190.00	\$240.00
<b>Tutorial:</b>	\$599.00	\$699.00

Registration fee includes CD ROM proceedings, lunches and breaks for two days.

## More Information

Ahmed A. Busnaina W. L. Smith Professor and Director  
The Nanomanufacturing Research Institute and the  
NSF Center for Microcontamination Control  
Northeastern University 334 Snell Engineering, Boston,  
MA 02115 Tel (617) 373-2992, Fax: (617) 373-2921  
Email: [a.busnaina@neu.edu](mailto:a.busnaina@neu.edu)

Angela Sutkaitis Program Coordinator NSF Center for  
Microcontamination Control Northeastern University  
Boston, MA 02115 Tel: (617) 373-3294 Email: [a.sutkaitis@neu.edu](mailto:a.sutkaitis@neu.edu)

For complete information, please visit the [workshop website](#).

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