

Welcome Back

*NCMC-9: Combinatorial
Methods for Nanostructured
Materials*



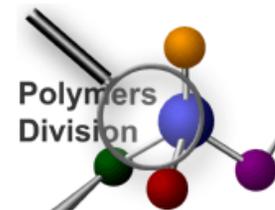
NIST Combinatorial Methods Center

NIST Gaithersburg, MD

April 24-25, 2006

NIST

National Institute of Standards and Technology
Technology Administration, U.S. Department of Commerce



NCMC-9 Program



NIST Combinatorial Methods Center

Tuesday, April 25, 2006 – Morning

8:30 am Reconvene
Continental Breakfast

Interactions and Update

9:00 am Michael Fasolka, NCMC
Welcome Back

9:10 am Steve Fletcher and Jawwad Darr, InsightFaraday, UK
High Throughput Nanomaterials Discovery - a UK perspective

9:45 am Daniel Cutbirth, Nscript Inc.
Novel Deposition System for Combinatorial Libraries

10:20 am Refreshment Break

10:40 am Celesta Fong, CSIRO, Australia
CSIRO Overview and NCMC Interaction

10:55 am Christopher Stafford, NCMC
NIST Gradient Flow Coater

11:15 am Michael Fasolka, NCMC
High throughput preparation of specimens for TEM

11:30 am Chang Xu, NCMC
Combinatorial Surfaces of Grafted Polymers

11:45 am Brian Berry, Polymers Division
Orientation in Nanostructured Thin Films

12:00 pm Michael J. Fasolka
Wrap Up

12:20 pm Lunch (NIST cafeteria, Bldg. 101)

NCMC Tours and Demonstrations

1:45 pm Convene in NCMC Labs – Building 224, Rm. B204
See Lab Tours Handout for Schedule

3:30 pm Adjourn – See you at NCMC-10! (October 5-6, 2006)

NCMC Interactions

Invited Presentations

NCMC Member Partner:

Steve Fletcher and Jawwad Darr,
InsightFaraday, UK

*HT Nanomaterials Discovery - UK
perspective*

Small Business Innovation Research (SBIR) Technology Report:

Daniel Cutbirth, Nscript Inc.

New combi library deposition system

NCMC Collaborator:

Celesta Fong, CSIRO*, Australia

CSIRO overview and NCMC Interaction

*Commonwealth Scientific and Industrial Research
Organisation

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NIST Presentations

*Combi methods for thin
nanomaterials*

Christopher Stafford, NCMC
NCMC Gradient Flow Coater

Mike Fasolka, NCMC
HT preparation of TEM specimens

Chang Xu, NCMC
Combi Surfaces of Grafted Polymers

Brian Berry, Polymers Division
*Orientation in Nanostructured Thin
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Wrap Up / Discussion Redux

- *Summary of discussion session points.*
- *Opportunity for additional feedback:*
 - *On yesterday's discussion*
 - *On today's presentations*
 - *On NCMC-9*

NCMC-9 Program



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NCMC Facilities Demonstrations

- Open House Format
- See Handout for a Map of Stations

Ask Our Experts

FLOOR PLAN KEY

1. Preparing gradient films with our flow coater Mike Fasolka (B207)
2. Preparing surface energy and chemistry gradients Mai Juthongpipit (B207)
3. Microchannel confined surface initiated polymerization (μSIP) and controlled radical polymerization Chang Xu and Tao Wu (B209)
4. Rapid prototyping of fluid devices for polymer formulations João Cabral (B209)
5. Microfluidic suspension polymerizations, Raman and fluorescence spectroscopies, Tony Bar and Zuzanna Cygan (B215)
6. C&HT Rheology Jal Pathak (B215)
7. C&HT peel tests Patty McGuigan (B217)
8. Strain Induced Elastic Buckling Instability for Mechanical Measurements (SIEBIMM) Shu Guo (B217)
9. C&HT Probe Tack apparatus with image acquisition Seung-ho Moon (B217)
10. Multi-lens Contact Adhesion Tests (MCAT1&2) Chris Stafford (B217)
11. C&HT scattering methods Alex Norman and Wenhua Zhang (A212)
12. Library liquid dispenser and MALDI Michelle Byrd (A208)

COMBI Facilities

Combi Office (B204)

NCMC Publications Update



Instrument Specifications Document

- *Extensive Update:* Flow Coater (coming soon)

Publications in NCMC-9 Program Handout

NCMC Methods for Nanomaterials

- Gradients of Statistical Copolymers Brushes (*Advanced Materials, Proof*)
- Solvent Response of Block Copolymer Brushes (*Macromolecules, Proof*)
- Patterned Polymer Brushes (*PMSE Preprint*)
- Microfluidic static light scattering (*Colloid and Interface Science*)
- Gradient Flow Coater (*Review of Scientific Instruments*)

NCMC Mechanics Methods

- Modulus of Soft Polymer Networks (*Macromolecules, Accepted Proof*)
- Combi Methods for Epoxy Underfill Materials (*MRS Combi Symposium Proceedings, Accepted Proof*)
- HT Peel Testing (*Adhesives and Sealants Industry Magazine*)

Fall 2005 MRS Proceedings Book

- *Combinatorial Methods and Informatics Approaches to Materials*
Editors: Fasolka, Wang, Potyrailo, Chikyow, Schubert, Korkin
- 46 papers: See first section of handout for more information

Please:



- Pick up lunch tickets
- After the workshop, write us an email with your feedback on NCMC-9: combi@nist.gov
 - What did we do well?
 - What could have been done better?
 - Additional thoughts on discussion points
- Watch your mail for the NCMC-9 CD
- Mark your calendars: NCMC-10: Oct. 5-6, 2006

THANKS!