

first announcement

program committee

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4th International Conference on

MICROMATERIALS AND NANOMATERIALS

MICROMAT 2004

April 4–7, 2004
Berlin
Germany



organizers:

IZM Fraunhofer Institute for Reliability and Microintegration
MMCB Micro Materials Center Berlin

in cooperation with:

VDI/VDE Technologiezentrum Informationstechnik GmbH, Teltow
BAM Federal Institute for Materials Research and Testing, Berlin
DVM Deutscher Verband für Materialforschung und -prüfung e.V.
TU Technical University of Berlin

technical organizer:

AMIC GmbH, Berlin



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about micro materials conferences

ABOUT MICRO MATERIALS CONFERENCES

The MicroMat conferences are Europe's major congresses in the field of materials aspects in micro- and nanotechnologies.

The 1st Micro Materials conference MicroMat '95 took place in Berlin on a German scale in November 1995.

Each of the following two conferences, MicroMat '97 and MicroMat 2000, attracted about 500 participants from 40 countries. Both times, more than 300 papers were presented.

MAIN FIELDS OF INTEREST

- Micro materials research
- Micro materials testing
- Micro materials simulation
- Micro materials application

in microsystem technology, MEMS, NEMS.

Reflecting recent trends, special emphasis will be given to materials aspects of **nanomechanics** and **nanotechnology** applications.

topics

TOPICS

1. Experimental Characterization Techniques (Optical and Laser Techniques, Acoustic Methods, Thermography, Magnetic Testing, STM, AFM, UFM, microDAC, X-Ray Microscopy, Tomography)
2. Microdeformation Analysis (Digital Image Correlation, microDAC, nanoDAC, SEM Moiré, Micro Raman Spectroscopy)
3. Thermo-mechanical Simulation of Microcomponents and Microsystems
4. Thermal Characterization (Thermal Management, Electronics Cooling, Thermal Conductivity, Heat Transfer)
5. Nanomaterials – Nano Simulation and Testing
6. Downscaling of Material Properties, Interfacial Relations between Micromaterials and Nanomaterials
7. Stress and Strain in Thin Layers and Films
8. Advanced Mechanical Testing (Indentation Tests, DMA, Micro Tensile Testing, Internal Stress Analysis, ...)
9. Materials Parameters and Constitutive Behavior (Semiconductors, Ceramics, Polymers, Solders, Metallizations, Thin Films)
10. Electronic Packaging Materials (for CSP, BGA, Flip Chip, COF, WL-CSP, ...)

topics

11. Photonics and Optoelectronics Materials Issues
12. Materials Aspects of PCB and HDI-substrates
13. Interfaces and Interface Reactions
14. Interconnection and Assembly Technologies (Bonding, Bumping, Microsoldering, Microforming, Etching, Laser Treatment)
15. Ultraprecision Manufacturing of Micro and Nano Components
16. Simulation of Micro and Nano Materials (Simulation Tools, Design, Applications, Relations between Simulation and Experiment, Parametrized FE Models, Global vs. Local Modeling, Continuum vs. Lattice Modeling)
17. Micro and Nano Reliability
18. Crack and Fracture Problems (Crack Detection, Prediction and Prevention, Failure Criteria, Fracture Electronics)
19. Damage, Failure Modeling (e.g. Creep Damage, Damage Accumulation, Life Time)
20. Accelerated Testing
21. Probabilistic and Stochastic Methods

During the MicroMat 2004 also the following special event will be held:

Berlin 6// TV Tower Workshop
on
Micro Mechatronics – Micro Materials –
Micro Mechanics

MICROMATERIALS
AND
NANOMATERIALS

MICROMAT 2004



specials

SPECIAL SESSIONS AND WORKSHOPS

- I. Materials Aspects for Microfabrication and Modular Microsystem Technology
- II. Nondestructive Testing of Micro Materials and Microcomponents
- III. Micro- and NanoProbe Techniques
- IV. Materials for Micro Security and Homeland Security Applications
- V. Micro Materials for Adaptronics
- VI. Polymeric Materials for Electronics (Polytronics)
- VII. Micro and Nano Materials for High Temperature Electronics
- VIII. Software Tools for MST Applications and Databanks
- IX. Aspects of Recycling and Environmental Engineering
- X. Micro Materials Special Applications in the Fields of
 - Sensors and Actuator Materials (MEMS, MOEMS, MoMEMS, NEMS, ...)
 - Automotive (Airbag, Sensors, ...)
 - Telecommunication
 - Medical and Biological Products
 - Harsh Environment
 - Consumer Electronics
- XI. Micro and Nano Materials in Education

For more information see:

www.micromaterials.com



information

LANGUAGE

The official language of the presentations is English. There is no translation of the presentations.

SPECIAL AWARDS

- Best paper awards (in different topics)
- Best poster award
- Special awards given by sponsoring societies and companies

CONFERENCE PUBLICATIONS

Abstracts will be handed out during the conference. Traditionally the conference proceedings will be published as a book as soon as possible after the conference. Additionally, selected papers will be published in special or regular issues of »Microsystem Technologies« and »Micromaterials and Nanomaterials«.

POSTER SESSION

Following the very successful poster presentations on the previous MicroMat conferences also on MicroMat 2004 special attention will be given to the poster exhibition.

CONFERENCE HOTEL

The new conference hotel NOVOTEL Berlin-Mitte is located in the city center of Berlin near the Potsdamer Platz and the Brandenburger Tor.

CONTACT

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ACTUAL INFORMATION

Regularly updated information on the conference will be available on <http://www.micromaterials.com>

Please complete this form and fax or mail it to:

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I am interested to attend the conference

I want to present a paper

I want to present a poster

Preliminary areas of interest (nr.s)

authors: