

7th International Nanotechnology Symposium

New Ideas for Industry

Nanofair[®] 2009

Nobel prize winner
Peter Grünberg about
"Current induced magnetization
dynamics in nanopillars"

Date and Venue:

May 26 - 27, 2009
Dresden, Germany

Statement from a participant
of Nanofair 2008:

"Nanofair makes it possible to gain an overview of the myriad of emerging possibilities of nanotechnology. The combination of expert contributions from industry and research facilitates orientation and makes contacts possible to researchers as well as to colleagues from the industry."

Alex Dommann, vice president, CTO, CSEM,
Swiss Center for Electronics and Microtechnology,
Inc., Switzerland

Under the patronage of BMBF

Hear international experts about current issues for the areas of electronics, materials, surfaces, life science and optics from

Applied Materials ■ Carl Zeiss SMT ■ AMD ■ Namos ■ Kankyo Semiconductors ■ Evonik
Goldschmidt ■ INPHAZE ■ Merck ■ Nanogate ■ Novald ■ Bayer Technology Services ■
and others

Foreword

Nanotechnology is one of the key technologies of this century. A wide spectrum of already established as well as new applications in many different branches certainly will contribute to an improvement of the quality of life and to the creation of new jobs. It is essential that scientific discoveries rapidly bridge the gap to applications. More intense cooperation, communication and networking between scientists, engineers and industrial managers is a prerequisite for an efficient technology transfer.

Under the title "New Ideas for Industry" Nanofair will present, in its seventh successive year, a platform of the exchange of ideas and the generation of initiatives between research and industry. The scope of the conference will be nanotechnology in the fields of materials, electronics, life sciences, optics, analytics and surfaces. In addition possible risks will be discussed along with an outlook towards new technologies and applications.

Plenary lectures will be given by internationally renowned speakers and time will be available in the program for discussions concerning the identification of challenges and solutions, useful materials and processes and new co-operations partners. Contacts initiated by the participants are welcome and contribute greatly to the success of the conference. A poster presentation widens the scope for the discussion of new ideas and results. In addition an exhibition of new products and services based on nanotechnology will accompany the congress.

We are looking forward to welcoming you in Dresden



Andreas Leson
Fraunhofer IWS, Dresden, Germany

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- VDI Field of Competence Nanotechnology
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- Nanomat Karlsruhe
- Fraunhofer IWS Dresden
- Forschungszentrum Karlsruhe

Statement from a participant of Nanofair 2008

"The program was varied, with excellent high-level presentations and a real pleasure to have English as the official conference language. We look forward to participating in Nanofair 2009, both in the conference program and the industry exhibition."

Hans Coster, *Biophysics and Bioengineering, University of Sydney and chief scientist, INPHAZE, Australia*

Scientific Committee

- Andreas Leson**, *Fraunhofer IWS, Dresden, Germany*
(Chairman)
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- Heinz Hilgers**, *PEP Photonics European Photovoltaics AG, Mainz, Germany*
- Stefan Kaskel**, *University of Dresden, Dresden, Germany*
- Esko Kauppinen**, *Helsinki University of Technology, Espoo, Finland*
- Witold Łojkowski**, *Institute Wysokich Ciśnień, Polska Akademia Nauk, Warszawa, Poland*
- Manfred Stamm**, *Leibnitz Institute of Polymer Research, Dresden, Germany*
- Katsuaki Suganuma**, *ISIR Nanotechnology Center, Osaka University, Osaka, Japan*
- Martin Wegener**, *University of Karlsruhe, Karlsruhe, Germany*
- Matthias Werner**, *NMTC Berlin, Berlin, Germany*
- Ehrenfried Zschech**, *AMD Saxony LLC & Co. KG, Dresden, Germany*

Schedule of "Nanofair 2009"

Monday, 25 May 2009	Nanofair Career Forum and Student Nanofair Ticket
Tuesday, 26 May 2009	Conference Awarding of the Young Researcher Prize
Wednesday, 27 May 2009	Conference
Thursday, 28 May 2009	Workshop

Conference language

The official language of the conference will be English. Simultaneous translation will not be available.

Tuesday, 26 May 2009

08:00 Registration

09:00 Welcome address by **Dirk Hilbert**, deputy mayor of the city of Dresden, and **Thomas Rachel**, Parliamentary State Secretary, Federal Ministry of Education and Research, Berlin, Germany

Plenary session (Room 2)

09:30 **Current induced magnetization dynamics in nanopillars, prepared from epitaxial Fe/Ag/Fe layered structures**
Peter Grünberg, *department for solid state physics, Research Center Jülich, Jülich, Germany*

10:15 **PV solar industry: new mainstream technology for future electricity**
Winfried Hoffmann, *vice president and CTO Energy and Environmental Solutions Group (EES), Applied Materials GmbH & Co. KG, Alzenau, Germany*

11:00 Coffee break with poster presentation and technical exhibition

11:30 **Imaging and structuring the Nano-World**
Dirk Stenkamp, *member of the board, Carl Zeiss SMT AG, Oberkochen, Germany*

12:00 **Printed electronic for low cost, large area, flexible and fast processing of circuits**
Romain Gwoziecki, *research engineer, CEA-Liten, Grenoble, France*

Co-authors: J. M. Verilhac, D. Boudinet, C. Bory, J. Bablet, J. Tallal, F. Sonier, S. Altazin, M. Heitzmann, S. Jacob, A. L. Seiler, C. Serbutoviez, F. Gaillard, *CEA Liten DTNM LCH, Grenoble, France*; M. Benwadih, H. Bracoud, K. Aissou, L. Jamet, R. Coppard, *SOFILETA SAS, Bourgoin-Jallieu, France*

12:30 **Atomic scale materials analysis for advanced transistors applying Atom Probe Tomography**
Christoph Klein, *senior complex analysis engineer, AMD Fab 36 LLC & Co. KG, Dresden, Germany*

13:00 Lunch break with poster presentation and technical exhibition

Materials I (Room 4)

14:30 **Synthesis, properties and applications of nanoscaled diamond**
Hans-Jörg Fecht, *director, Institute of Micro and Nanomaterials, University of Ulm, Ulm, Germany*

14:55 **Influence of nano composites on reliability and mechanical properties of moisture sensors**
Jens Hammacher, *managing director, Chemnitzer Werkstoffmechanik GmbH, Chemnitz, Germany*
Co-authors: Bernd Michel, Jörg Martin, Peter Sättler, Kerstin Kreyszig, *Fraunhofer ENAS, Chemnitz, Germany*; Bettina Seiler, *Chemnitzer Werkstoffmechanik GmbH, Chemnitz, Germany*

15:20 **Development of spin-dependent nanostructure field emission – low energy Fe+ ion implantation into silicon nanostructures**
Andreas Markwitz, *National Isotope Centre, GNS Science, Lower Hutt, New Zealand, The MacDiarmid Institute for Advanced Materials and Nanotechnology, New Zealand*

15:40 **Biotemplating techniques for catalysts with reduced precious metal content**
Jürgen Hofinger, *managing director, Namos GmbH, Dresden, Germany*
Co-authors: Steffen Roos, Daniela Keck, Kevin Zirpel, Stefanie Wengrzik, *Namos GmbH, Dresden, Germany*; Malte Berndt, *Interkat GmbH, Königswinter, Germany*

16:00 Coffee break with poster presentation and technical exhibition

Materials II (Room 4)

16:45 **Innovation alliance carbon nanotubes: novel collaboration model to enter upcoming markets**
Holger Hoffschulz, *Bayer Technology Services GmbH, Leverkusen, Germany*
Co-authors: Pétér Krueger, *Bayer Material Science AG, Leverkusen, Germany*; Thomas Goergen, *Bayer Technology Services GmbH, Leverkusen, Germany*

17:10 **Production of metal oxides nano powders via pulsation reactor process**
Lars Leidolph, *division manager process chemical R&D, IBU-tec advanced materials AG, Weimar, Germany*
Co-author: Tarek Khalil, *IBU-tec advanced materials AG, Weimar, Germany*

Electronics (Room 2)

Functional oxide nano-electronics
Hidekazu Tanaka, *The Institute of Scientific and Industrial Research, Osaka University, Japan*
Co-author: Tomoji Kawai, *The Institute of Scientific and Industrial Research, Osaka University, Japan*

Laser-shaped thick-film and LTCC micropassives
Andrzej Dziedzic, *dean of the faculty, Faculty of Microsystem Electronics and Photonics, Wrocław University of Technology, Wrocław, Poland*

BaTiO₃ nanotubes grown by a sol-gel template method
Richard Boucher, *group leader, Chair of Functional Materials, University of Technology Dresden, Dresden, Germany*
Co-authors: Peter Renz, Ki Hoon Yoon, *Institute of Materials Science, University of Technology Dresden, Dresden, Germany*; Doru Lupascu, *University of Essen, Essen, Germany*

Analytics of new nanostructured biocomposites in marine sponges
Hermann Ehrlich, *group leader, Institute of Bioanalytical Chemistry, Dresden University of Technology, Dresden, Germany*

Surfaces (Room 2)

Thin film technology for flexible solar cells
Matthias Fahland, *project leader, department coating of flexible substrates, Fraunhofer Institute for Electron Beam and Plasma Technology (FEP), Dresden, Germany*
Co-authors: Torsten Kopte, *Fraunhofer Institute for Electron Beam and Plasma Technology, Dresden, Germany*; Thomas Soederström, Franz-Josef Haug, Vanessa Terrazoni-Daudrix, *Institute of Microtechnology, University of Neuchâtel, Neuchâtel, Switzerland*

Nanostructuring of surfaces for new functionalities
Clemens Holzer, *deputy head of institute, INKA – Institut fuer nanotechnische Kunststoff-Anwendungen, Windisch, Switzerland*
Co-authors: Jens Gobrecht, *Paul Scherrer Institut, Villigen, Switzerland*; Harun Solak, *Eulitha AG, Villigen, Switzerland*

Materials II (Room 4)

- 17:35 Beneficial applications of nanotechnology in the environment**
Alison Crossley, manager, Oxford Materials Characterisation Service, Oxford, United Kingdom
- 18:00 Application potential of pyrogenic oxides**
Frank Menzel, Evonik Goldschmidt GmbH, Hanau-Wolfgang, Germany
- 18:25 Fabrication of nano-carbons by millimeter wavelength irradiation using carbons made from acetylene gas, fullerene and Kapok (Ngeu or Laotian cotton tree) for the use in electric double layer capacitors (EDLCs) as electrode materials**
Kiyoshi Kosaka, president, Yunosuke Makita, Kankyo Batteries Co., Ltd., Tokyo, Japan
- 18:45 Structure and physical-mechanical properties of nanocomposite combined coatings Ti-N-Si/WC-Co-Cr**
Alexander Pogrebnjak, director, Ion Beam and Plasma Deposition, Sumy Institute for Surfaces Modification, Sumy, Ukraine
 Co-authors: V. M. Bersnev, G. V. Kurdyumov, Institute for Metal Physics, NAS Ukraine, Kiev Ukraine; M. V. Il'yashenko, F. F. Komarov, G. V. Kirik, A. P. Shypylenko, Sumy Institute for Surface Modification, Sumy, Ukraine; F. F. Komarov, Belarus State University, Minsk, Belarus; N. K. Erdybaeva, East-Kazakhstan State Technical University, Ust-Kamenogorsk, Kazakhstan; P. V. Zhykovskiy, Lublin Technical University, Lublin, Poland; S. V. Kislitsyn, Yu. Zh. Tuleushev, Institute for Nuclear Physics, Almaty, Kazakhstan

Surfaces (Room 2)

- Properties of pure and N, C and W doped TiO₂ thin films grown by reactive magnetron sputtering**
Annekatrin Delan, Institut für Festkörperelektronik, University of Technology Dresden, Dresden, Germany
 Co-authors: Eberhard Schultheiss, Peter Frach, Daniel Gloess, Fraunhofer FEP, Dresden, Germany; Alagarsamy Karuppasamy, University of Technology Dresden, Dresden, Germany
- Presentation of a new test method for easy-to-clean surfaces**
Jörg Günther, member of board of directors, department surface technology, Kunststoff-Institut Lüdenscheid, Lüdenscheid, Germany
 Co-author: Dominik Malecha, Kunststoff-Institut Lüdenscheid, Lüdenscheid, Germany
- Multifunctional protective technological coverings**
Aleksandrs Urbahs, head of department of transport vehicle computer modelling and technologies, director, Institute of Transport Vehicle Technologies, Riga Technical University, Riga, Latvia
 Co-author: Konstantins Savkovs, Margarita Urbaha, Institute of Transport Vehicles Technologies, Riga Technical University, Riga, Latvia
- LETI way to Industry**
Marie-Noëlle Semeria, VP Strategy & Business Development, CEA-LETI, Grenoble, France

- 19:05 End of first day**
- 19:30 Evening reception, Awarding of the Young Researcher Prize**
 Enjoy the evening in Dresden with the speakers and the other participants.
 A collective short walk (approx. 15 min) will bring us to the venue of the evening event:
 Festungsmauern Am Brühlischen Garten,
 Am Brühlischen Garten 4, 01067 Dresden - Germany,
 Telephone: +49 (0) 351 2 62 60-32, Fax: +49 (0) 351 2 62 60-11,
 www.festungsmauern-dresden.de



Analytics (Room 4)

- 09:00 Synchrotron radiation in nanoscience and nanotechnology**
Anke Rita Pyzalla, scientific director/chief executive, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany
 Co-authors: Hermann Dürr, Florian Kronast, Bernd Löchel, Gerd Schneider, BESSY GmbH, Berlin, Germany; Armin Höll, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH, Berlin, Germany
- 09:25 Electrical characterization of molecular films on silicon and of thin-film silicon devices**
Hans Coster, chief scientist, INPHAZE Pty Ltd, Sydney, Australia
- 09:50 Nanorobotic setup for nondestructive mechanical characterization of carbon nanotubes**
Malte Bartenwerfer, research assistant, division Microrobotics and Control Engineering, University of Oldenburg, Oldenburg, Germany
 Co-authors: Sergej Fatikow, Volkmar Eichhorn, University of Oldenburg, Oldenburg, Germany

Life Science (Room 2)

- Nanooptical detection methods for and with biomolecular motors**
Stefan Diez, group leader, Molecular Transport, MPI of Molecular Cell Biology and Genetics, Dresden, Germany
- Fluorophore doped luminescent silica nanoparticles as efficient labels in DNA-microarrays**
Francesco Enrichi, CIVEN, Marghera, Italy
 Co-authors: Raffaele Riccò, Anna Meneghello, Karina Fincati, CIVEN and Nanofab, Marghera, Italy
- Nanoparticles of polyelectrolyte complexes with narrow size distribution: Preparation and protein binding**
Martin Müller, group leader polyelectrolyte particles and layers, Surface Modification, Leibniz Institute of Polymer Research Dresden e.V. (IPF), Dresden, Germany

Analytics (Room 4)		Life Science (Room 2)	
10:15	<p>The significance of nano-analytical services in the industry Michael Kopnarski, CEO, IFOS GmbH, Kaiserslautern, Germany</p>		<p>Nanoparticle bioconjugates by laser ablation – a novel method aiming at pure drug and gene delivery Svea Petersen, research assistant, nanotechnology, Laser Zentrum Hannover e.V., Hannover, Germany Co-author: Stephan Barcikowski, Laser Zentrum Hannover/Nanotechnology, Hannover, Germany</p>
10:40	<p>Synthesis and characterization of nanostructured, easy-to-clean and wear resistant SiO_x/[Si(NCN)₂]_n sol-gel films Emanuel Ionescu, researcher, Institute of Material Sciences, University of Technology Darmstadt, Darmstadt, Germany Co-authors: Ralf Riedel, Institute of Material Sciences, University of Technology Darmstadt, Darmstadt, Germany; Jens Harenburg, Monika Zschuppe, FEW Chemicals GmbH, Wolfen-Bitterfeld, Germany; Wolfram Kolbe, Immanuel Fergen, Heidelberger Druckmaschinen AG, Heidelberg, Germany</p>		<p>Nanocomposite scaffolds based on silica, collagen and calcium phosphate cement Sascha Heinemann, scientific staff, Institute of Materials Science, Max Bergmann Center of Biomaterials, Dresden, Germany</p>
11:00	Coffee break with poster presentation and technical exhibition		
Materials III (Room 4)		Optics (Room 2)	
11:45	<p>Reactive nanometer multilayers as tailored heat sources for joining techniques Georg Dietrich, scientist, PVD- and Nanotechnology, Fraunhofer Institute Material and Beam Technology, Dresden, Germany Co-author: Peter Gawlitza, Stefan Braun, Andreas Leson, Fraunhofer Institute Material and Beam Technology, Dresden, Germany</p>		<p>Dotfarm®-Optics applications for consumer electronics Martin Klenke, director optics, Nanogate Advanced Materials GmbH, Quierschied-Goettelborn, Germany</p>
12:10	<p>New monodispersed core/shell nanoparticles for improving scratch resistance of coatings Gerhard Jonschker, business development manager, Advanced Technologies Germany, Merck KGaA, Darmstadt, Germany</p>		<p>Precision optical coatings with continuously varying refractive index deposited by reactive magnetron sputtering using nanoscale film growth control Hagen Bartzsch, group leader, Coating of optic, electronic and magnetic components, Fraunhofer FEP, Dresden, Germany Co-authors: K. Täschner, Solid-State Electronics Laboratory, University of Technology, Dresden, Germany; P. Frach, Fraunhofer-Institut für Elektronenstrahl- und Plasmatechnik, Dresden, Germany; E. Schultheiss, Fraunhofer-Institut für Elektronenstrahl- und Plasmatechnik, und Solid-state Electronics Laboratory, University of Technology Dresden, Dresden, Germany</p>
12:35	<p>A permanent and environmental stable marking system for leather-traceability via encapsulated DNA Sandra Gruner, Leather/Biopolymers, Research Institute of Leather and Plastic Sheeting – FILK, Freiberg, Germany Co-author: Jörg Bohrisch, Fraunhofer-Institut Angewandte Polymerforschung (IAP), Golm, Germany</p>		<p>Advantages of doping technology in organic electronics applications Erol Kucur, physics group, Novald AG, Dresden, Germany</p>
12:55	<p>Chemically activated nanodiamonds (CANDiT) as a protective and smart coating for aluminum alloys Inga Hannstein, research scientist, laboratory for optical diagnosis, Fraunhofer IZFP-D, Dresden, Germany Co-authors: Anne-Katrin Adler, Jörg Opitz, Jürgen Schreiber, Fraunhofer Institut Zerstörungsfreie Prüfverfahren, Dresden, Germany; Martin Rudolph, Institut für Mechanische Verfahrenstechnik und Aufbereitungstechnik, University of Technology Bergakademie Freiberg, Freiberg, Germany; Viktoria Lapina, Institute of Physics of Belarus, Academy of Science, Minsk, Belarus</p>		<p>Nanocrystal and interface defects related photoluminescence from germanium-rich SiO₂ thin films Pravat Kumar Giri, associate professor, Department of Physics, Indian Institute of Technology Guwahati, Guwahati, India</p>
13:15	Lunch break with poster presentation and technical exhibition		
Plenary Session (Room 2)			
14:15	Lecture of VDI students award winner		
14:30	<p>Advance of nanotechnology in Japan Teruo Kishi, president, National Institute for Materials Science (NIMS), Tsukuba, Japan; Yoshio Bando, COO and principal investigator, WPI Center for Materials Nanoarchitectonics (HANA), Japan</p>		
15:00	<p>Industrialization of MNT Alex Dommann, CTO, CSEM, Swiss Center for Electronics and Microtechnology, Inc., Neuchâtel, Switzerland</p>		
15:30	<p>Energy savings through nanotechnology Ralf Hofmann, member of technical staff, Advanced Technologies Group, Applied Materials, Inc., Santa Clara, California, United States of America</p>		
16:00	<p>Nanostructured materials for environmental improvement by monitoring, remediation and pollution prevention David Rickerby, senior scientific officer, Institute for Environment and Sustainability, Joint Research Centre, Ispra VA, Italy</p>		
16:30	Closing remarks		
16:45	End of the conference		

- > **Effect of surface modification of silica upon the microstructure and mechanical and viscoelastic behavior of SBR/SiO₂ nanocomposites**
Majid Abdouss, *Department of Chemistry, Amirkabir University of Technology, Tehran, Iran*
Co-authors: Saeedeh Kazemi, *Department of Chemistry*, Ali Asghar Katbab, *Department of Polymer Engineering*, Mehran Javanbakht, *Department of Chemistry, Amirkabir University of Technology, Tehran, Iran*
- > **Reversible switching of protein adsorption on binary polyelectrolyte brushes**
Eva Bittrich, *Nanostructured Materials, Leibniz-Institut fuer Polymerforschung Dresden e.V., Dresden, Germany*
Co-authors: Fabian Kempe, *Albert-Ludwigs-Universitaet Freiburg, Freiburg, Germany*; Petra Uhlmann, Manfred Stamm, *Leibniz-Institut fuer Polymerforschung Dresden e.V., Dresden, Germany*
- > **Biosurface engineering by polymer brushes**
Sina Burkert, *Nanostructured Materials, IPF Dresden e.V., Dresden, Germany*
Co-authors: Thomas Goetze, Petra Uhlmann, Manfred Stamm, *IPF Dresden e.V., Dresden, Germany*
- > **Incorporation of luminescent EU3+ ions into monodisperse silica nanospheres**
Francesco Enrichi, *CIVEN, Marghera, Italy*
Co-authors: Raffaele Riccò, *CIVEN and Nanofab, Marghera, Italy*; Alvise Parma, *CIVEN and Nanofab, Marghera, Italy and Dip. Chimica Fisica, Univ. Ca' Foscari Venezia and INSTM, Mestre, Italy*; Pietro Riello, Alvise Benedetti, *Dip. Chimica Fisica, Univ. Ca' Foscari Venezia and INSTM, Mestre, Italy*
- > **Strain engineering for performance enhancement in advanced nano scaled SOI-MOSFETs**
Stefan Flachowsky, *Department of Electrical Engineering, University of Applied Sciences Dresden, Dresden, Germany*
Co-authors: Wilfried Klix, Roland Stenzel, Ralf Illgen, Tom Herrmann, *Department of Electrical Engineering, University of Applied Sciences Dresden, Dresden, Germany*; Andy Wie, Jan Höntschel, Manfred Horstmann, *AMD Saxony LLC & Co. KG, Dresden, Germany*
- > **Effect of ZnO seed layer on the catalytic growth of ZnO multipods and aligned ZnO nanorods**
Pravat Kumar Giri, *Department of Physics, Indian Institute of Technology Guwahati, India*
- > **Electron beam evaporation of silicon and subsequent formation of nano-crystalline and polycrystalline thin films**
Katrin Häfner, *Coating of metal sheets and stripes, Fraunhofer Institute for electron beam and plasma technology, Dresden, Germany*
Co-authors: Henry Morgner, Jens-Peter Heinss, Christoph Metzner, *Fraunhofer Institute for electron beam and plasma technology, Dresden, Germany*
- > **Morphology stability in thermoplastic olefin (TPO) nanocomposites based on PP/EPDM/Clay: Effect of molecular interactions, chains dynamics, and processing and material parameters**
Elnaz Hajizadeh, *Polymer Engineering, Amirkabir University of Technology, Tehran, Iran*
Co-author: Ali Asghar Katbab, *Amirkabir University of Technology, Tehran, Iran*
- > **Colloidal forces between CMP slurry particles and special substrates**
Steffi Hempel, *Polymer Interfaces, Leibniz-Institut fuer Polymerforschung Dresden e.V., Dresden, Germany*
Co-authors: Anja Caspari, Mandy Mende, Gudrun Petzold, Cornelia Bellmann, *Leibniz-Institut fuer Polymerforschung Dresden e.V., Dresden, Germany*
- > **Novel ultrafast annealing processes for performance improvement in advanced nano scaled partially depleted SOI-MOSFETs**
Ralf Illgen, *Department of Electrical Engineering, University of Applied Sciences Dresden, Dresden, Germany*
Co-authors: Wilfried Klix, Roland Stenzel, Stefan Flachowsky, Tom Herrmann, *Department of Electrical Engineering, University of Applied Sciences Dresden, Dresden, Germany*; Thomas Feudel, Jan Höntschel, Manfred Horstmann, *AMD Saxony LLC & Co. KG, Dresden, Germany*
- > **Molecular dynamics study of metal deposition process onto vertically aligned single-walled carbon nanotubes film with/without lying carbon nanotubes on the top**
Shuhei Inoue, *Mechanical System Engineering, Hiroshima University, Hiroshima, Japan*
Co-author: Yukihiko Matsumura, *Hiroshima University, Hiroshima, Japan*
- > **Permeability/morphology correlation in organoclay/TPV nanocomposite based on EPDM/PP with enhanced barrier properties; comparison with unvulcanized counterpart**
Ali Asghar Katbab, *Polymer Engineering Department, Amirkabir University of Tehran, Tehran, Iran*
Co-author: Pouya Katbab, *Polymer Engineering Department, Amirkabir University of Tehran, Tehran, Iran*
- > **Electrically conductive nanocomposites based on dynamically vulcanized PP/EPDM thermoplastic elastomers (TPV) and hybridized carbon nanofiber (CNF), and nanostructured carbon black (NCB)**
Ali Asghar Katbab, *Polymer Engineering Department, Amirkabir University of Technology, Tehran, Iran*
Co-Author: Ronak Bahrami, *Polymer Engineering Department, Amirkabir university of Tehran, Tehran, Iran*
- > **Influence of chain dynamics and molecular interactions upon micro-structure development in interfacially compatibilized PE/Expanded graphite nanocomposite as gas barrier**
Ali Asghar Katbab, *Polymer Engineering Department, Amirkabir University of Technology, Tehran, Iran*
Co-author: Abolfazl Akbari, *Polymer Engineering Department, Amirkabir University of Technology, Tehran, Iran*
- > **Microstructure/surface wettability correlation in interfacially compatibilized thermoplastic olefin (TPO)/clay nanocomposites based on polypropylene and EPDM rubber**
Ali Asghar Katbab, *Polymer Engineering Department, Amirkabir University of Technology, Tehran, Iran*
Co-author: Ramin Yousefzadeh Tabasi, *Amirkabir University of Technology, Tehran, Iran*
- > **Electrical percolation behaviour of polyamide 6.6 composites filled with different kinds of carbon nanotubes**
Beate Krause, *Leibniz Institute of Polymer Research Dresden e.V., Dresden, Germany*
- > **Estimation of carbon nanotube dispersability in thermoplastic polymers and in aqueous surfactant solutions**
Beate Krause, *Leibniz Institute of Polymer Research Dresden e.V., Dresden, Germany*
- > **Polymer – carbon nanotube composites as materials for liquid sensing applications**
Petra Pötschke, *Department of Polymer Reactions and Blends, Leibniz Institute of Polymer Research Dresden e.V., Dresden, Germany*
Co-author: Tobias Villmow, Timo Andres, Kazufumi Kobashi, Rosina Rentenberger, *Leibniz Institute of Polymer Research Dresden e.V., Dresden, Germany*
- > **Multilayers nanocomposite coatings Ti-N-Al/Ti-N/Al₂O₃/substrate, their structure and properties**
Andrey Pavlovich Shpylenko, *Ion Beam and Plasma Detonation, Sumy Institute for Surfaces Modification, Sumy, Ukraine*
Co-authors: V. M. Bersnev, G. V. Kurdyumov, *Institute for Metal Physics, NAS Ukraine, Sumy, Ukraine*; M. K. Kylyshkanov, *East-Kazakhstan State Technological University, Ust'-Kamenogorsk, Kazakhstan*; G. V. Kirik, A. P. Shpylenko, M. V. Il'yashenko, *Sumy Institute for Surface Modification, S. N. Dub, Institute Super Hard Materials, NAS Ukraine, Kiev, Ukraine*; P. V. Zukovskiy, *Lublin Technical University, Lublin, Poland*; S. V. Kisliksyn, Yu. Zh. Tuleushev, *Institute for Nuclear Physics, Almaty, Kazakhstan*
- > **Efficient and multifunctional holograms based on organic-inorganic nanocomposites structures**
Joachim Stumpe, *Functional Polymer Systems, Fraunhofer Institut fuer Angewandte Polymerforschung, Potsdam, Germany*
Co-authors: Oksana Sakhno, *Fraunhofer Institut fuer Angewandte Polymerforschung, Potsdam, Germany*; Leonid Goldenberg, *Institut fuer Duennschicht-technologie und Mikrosensorik, Teltow, Germany*
- > **Effects of thermomechanical mastication and shear strain size in the development of microstructure of natural rubber (NR)/organoclay nanocomposites**
Mitra Tavakoli Ardakani, *Polymer Engineering Department, Amirkabir University of Technology, Tehran, Iran*
Co-author: Ali Asghar Katbab, *Amirkabir University of Technology, Tehran, Iran*
- > **Antimicrobial activity of nanocomposites**
Eithne Tynan, *Gaiker Technological Centre, Nanomaterials and Smart Materials, Zamudio (Bizkaia), Spain*

Special program

Monday, 25 May 2009

Fraunhofer IWS Dresden, 9:00 – 17:00

Nanofair Career Forum and Free of Charge Student Nanofair Ticket

Highly motivated students who are interested in a job within the field of photovoltaics, new energies and thin film technology will get first-hand information about career opportunities and expectations of companies concerning their specialized employees and managers. Top level managers and human resource managers of well-known enterprises will present their companies and will be available for detailed discussions and conversations.

Tours of companies and research laboratories will complete the program. Participation in the Nanofair Career Forum is free of charge. In addition the VDI competence field nanotechnology offers for a limited number of students attendance to the Nanofair 2009 free of charge.

The detailed program may be found at www.nanotechnology.de

Please register for the Nanofair Career Forum at nanofair@iws.fraunhofer.de and apply for a free of charge ticket if you are interested.

Tuesday, 26 May 2009

Festungsmauern Am Brühlischen Garten, Dresden, Germany, 19:30

Awarding of the Young Researcher Prize

VDI competence field Nanotechnology has started a competition for the best diploma, bachelor's or master's thesis in the field of nanotechnology. Renowned experts have reviewed these proposals and decided on the winner. The award ceremony for the Young Researcher Prize will be held at the evening reception of the Nanofair conference. The winner will give a lecture on 27 May 2009, 14:15.

Thursday, May 28, 2009

Fraunhofer Institutszentrum, Winterbergstrasse 28, 01277 Dresden, Germany, 9:00 – 16:00

Workshop “Commercializing Future Technologies for Energy and Energy Efficiency”

Climate change and an increasing price of oil enforce considerable efforts to develop new technologies for the generation and for a more efficient use of energy. Solar energy, fuel cells as well as improved energy efficiency in the automotive industry are topical themes.

Therefore the Fraunhofer institutes FEP, IKTS and IWS in Dresden will hold a workshop on these top issues. Leading experts will report on the latest developments and be available for discussions. Guided lab tours will complement the workshop and allow the participants to gain a detailed insight in state of the art technologies.

Participation is free of charge. The number of participants is limited to 50 persons.

Further information and the detailed program is available at www.nanotechnology.de

You may register for the workshop by email to nanofair@iws.fraunhofer.de.

Exhibition & Sponsoring

Exhibition

For an optimum presentation of your company, make use of the exhibition held in parallel with the conference. Take the opportunity to position your products and services purposefully and branch specifically. Take advantage of the accompanying trade exhibition at the centre of the branch meeting for your optimal product presentation and make valuable contacts. In the context of VDI conferences and congresses you get to meet the key players of the industry – with pinpoint accuracy, concisely and with a minimum of organizational expenditure. We are looking forward to send you further information.

Christina Büttner
Project Consultant, Exhibition
Phone: +49 (0) 211 62 14-4 29
E-mail: buettner@vdi.de

Sponsoring

As a sponsor you position your company with a clearly perceptible presence within a selected circle of participants. Before and during the event we offer various possibilities to “fly your flag” and of getting into conversation with your potential customers.

Take advantage of sponsoring for positioning within an existing target group, and also to increase your profile in a new industry. We would gladly provide you with an individual offer – please do not hesitate to contact us.

Monika Berr
Project Consultant, Sponsoring
Phone: +49 (0) 211 62 14 4 07
E-mail: berr@vdi.de

Your contact:

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Conference desk

You can reach the conference desk at the following number
phone: +49 (0) 351 216 -15 11

- 46 Speakers
- Workshop and Career Forum
- Poster presentation
- Technical exhibition

I will attend the „7th International Nanotechnology Symposium“ at 26th and 27th of May 2009. (108908)

Symposium Fees (All prices plus VAT)

	price category	price
<input type="checkbox"/> Charge for attending	1	EUR 590,-
<input type="checkbox"/> Personal-VDI members	2	EUR 531,-
<input type="checkbox"/> University members	3	EUR 413,-
<input type="checkbox"/> Personal VDI-members of universities	4	EUR 295,-
VDI-Member-No.		

(With price levels 2 and 4 you must quote your VDI membership number.)

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Phone: +49 (0) 211 62 14-2 01
E-Mail: wissensforum@vdi.de
Internet: www.nanofair.com

Surname	First Name	Title
Department (Abbreviation if applicable)	Job Title	
Company	Function	
P.O. Box or Street	Postal Code, City, Country	
Phone	Fax	
E-Mail		
Different address for account		

Payment by credit card for participants with residence outside of Germany, Austria and Switzerland.

Visa Mastercard American Express

credit card holder	card no.	valid to
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Applications must be in writing. The registration confirmation and the invoice will be mailed out. Please do not pay until you have been billed.

Venue

MARITIM Hotel & International Congress Center Dresden, Ostra-Ufer 2, 01067 Dresden, Germany, Phone: +49 (0) 35 12 16-10 70, Fax.: +49 (0) 35 12 16-10 65

Hotel accommodation

A room contingent with a special price has been reserved for the participants of the congress at the Maritim Hotel. The rooms can be called upon until 28 April 2009. Please quote "VDI Nanofair" with your booking for making use of this offer. Please contact Maritim Hotel & International Congress Center Dresden, Reservation, Mrs. Denise Ploeger, phone: +49 (0) 35 12 16-10 15, E-Mail: dploeger.dre@maritim.de

Or use our free HRS booking service: www.vdi-wissensforum.de/hrs.



General Information: The price includes the conference-CD, coffee-break beverages, lunch and the evening event. The conference-CD will be handed out at the beginning of the conference.

Terms and Conditions:

Upon registering, the participant accepts the terms and conditions of VDI Wissensforum GmbH. Cancellations must be made in writing. If registration is cancelled 14 days prior to commencement of the conference, an administration fee of EURO 50 plus VAT will be charged. After this date, the invoiced participation fee is payable in full. The postmark is decisive. In this case the conference documents will, upon request, be sent to the participant. It is possible for someone to attend the course instead of a registered person by arrangement with VDI Wissensforum GmbH. If a course has to be cancelled due to unforeseen circumstances, participants will be immediately notified. In this case, the participation fee will be fully refunded if already paid. In exceptional cases, we reserve the right to change lecturers and/or the conference content without prior notice. In any event, the liability of VDI Wissensforum GmbH is limited solely to the participation fee.

Data protection:

Your personal data will be maintained for internal business and marketing purposes only in accordance to the by-laws, policies, and procedures of the VDI.

Date	Signature X
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