



Rapperswil, Switzerland, 25th – 26th November 2009

7th NanoEurope Symposium 2009

Moving Nanotechnology to Market

Final Program

Poster List

List of Exhibitors

(as per 4 November 2009)



Main Organiser



Co-Organiser



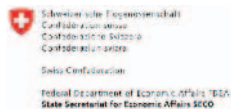
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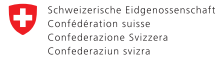
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Materials Science & Technology



Welcome Address

Dear NanoEurope Symposium Participants

Research and development generate the basis for new products, processes and services and by this improves peoples' lives. Hence, today's investment in technology development guarantees tomorrow's prosperity. NanoEurope 2009 again updates you on new results from research and development, innovative products with novel functions and the use of smart or active materials with nanoscaled functions for various applications. Because of high set-up costs and adaptation complexity, these innovations only gradually gain acceptance in established production processes. Nevertheless, nanotechnology becomes increasingly important within the global competition and we can see an evolving landscape where this future technology becomes ever more pervasive. Thanks to the valuable contribution of the scientific committee and the support of various other institutions and our sponsors, we can offer you an extraordinary combination of expert speeches, poster contributions and a foyer exhibition. It is a great pleasure for us to warmly welcome you and to thank you very much for your participation.

In the name of the organizing team.

Margarethe Hofmann-Antenbrink, MatSearch Consulting
Jörg Güttinger, Nano-Cluster Bodensee

Swiss Scientific Committee

Hans-Joachim Güntherodt, University of Basle, Switzerland
Louis Schlapbach, Director NFP 62: Smart Materials, Switzerland
Alex Dommann, CSEM SA, Neuchâtel, Switzerland
Heinrich Hofmann, Swiss Federal Institute of Technology Lausanne, Switzerland
Paolo Ermanni, Swiss Federal Institute of Technology Zurich, Switzerland
Jens Gobrecht, Paul Scherrer Institute PSI, Switzerland
Christofer Hierold, Swiss Federal Institute of Technology Zurich, Switzerland
André Bernard, Interstate University of Applied Sciences of Technology Buchs NTB, Switzerland
Martina Hirayama, University of Applied Sciences Zurich, Switzerland
Yves Leterrier, Swiss Federal Institute of Technology Lausanne, Switzerland
Markus Niederberger, Swiss Federal Institute of Technology Zurich, Switzerland
Ralph Spolenak, Swiss Federal Institute of Technology Zurich, Switzerland

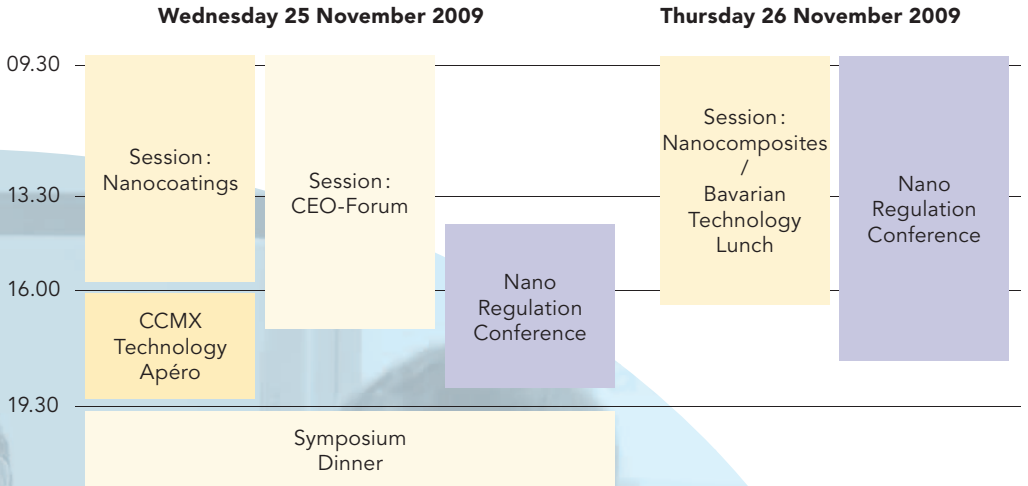
International Scientific Committee

Hans-Jörg Fecht, University of Ulm, Germany
David Grainger, University of Utah, USA
Günter Tovar, Fraunhofer-Verbund Nanotechnology Stuttgart, Germany
Ulrich Rüdiger, University of Constance, Germany
Johannes Edlinger, University of Applied Sciences Vorarlberg, Austria

Best Poster Award Jury

Heinrich Hofmann, Swiss Federal Institute of Technology Lausanne
Gian-Luca Bona, Swiss Federal Laboratories for Materials Testing and Research
Alex Dommann, CSEM SA
Jens Gobrecht, Paul Scherrer Institute PSI
Niklaus Bühler, Swiss Association for Materials Science and Technology
Markus Niederberger, Swiss Federal Institute of Technology Zurich

Program Overview



Participants' Information

Venue

HSR Hochschule für Technik, Rapperswil
Oberseestrasse 10
8640 Rapperswil-Jona

Onsite Registration

Registration will commence at 8.30 on Wednesday 25th November 2009

Opening hours NanoSpot Foyer Exhibition

Wednesday 25th November 2009: 8.00 - 19.30
Thursday 26th November 2009: 8.00 - 18.30

Poster Exhibition

The poster session is located in the foyer exhibition, please refer to page 8 for the poster list.

Best Poster Awards

The winners of the four Best Poster Awards 2009 will be announced in the poster session of Thursday, 26th November, at 14.00

Car Parking

No direct parking at the HSR. Please use one of the Public Parkings around the HSR area.

Insurance

The symposium organizer s cannot accept liability for personal injuries sustained, or for loss or damage of property belonging to symposium participants, either during or as a result of the symposium.

25.11.09 – Session **CEO-Forum**: Hotel Schwanen

08.45	Inscription with coffee
09.10	Welcome note Nano-Cluster Bodensee / Bavarian Cluster Nanotechnology
09.15	Nanotechnology: After fifteen years of research and no IPO's what on earth does the future hold and how can we know? Tim Harper, Cientifica Ltd., UK
09.45	Financing strategies for nanotechnology companies Marco Beckmann, Nanostart AG, Germany
10.15	Commercialization of R&D results and protection of intellectual property Jeannette Wibmer, Badertscher Attorneys at Law AG, Switzerland
10.40	Coffee break
11.10	Inorganic particle design – enabler for solutions in nanotechnology Thomas Hennig, Evonik Industries, Germany
11.40	Open innovation in complex value chains towards novel optoelectronic applications Volker Hilarius, Merck KGaA, Germany
12.10	Innovation at Altana: Bringing nanotechnology into the market Michael Berkei, Altana GmbH, Germany
12.40	Lunch, poster and foyer exhibition
14.00	At the small company crossroads: a philosophical approach Andrew Maslaveckas, BioCure Inc., Switzerland / USA
14.30	Back to the roots: how to successfully finance a start-up with early revenues Dirk Haft, attocube systems AG, Germany
15.00	Application potentials of nanotechnology Axel Zweck, Future Technologies Division of VDI-TZ, Germany
15.30	Coffee break
16.00	Financing opportunities on SIX Swiss Exchange Andrea Isler, SIX Swiss Exchange, Switzerland
16.30	The legal framework for the production and use of nanomaterials and nanotechnology Ralf Brinktrine, University of Leipzig, Germany
17.00	CCMX apéro, poster and foyer exhibition

25.11.09 – Session **Nanocoatings** and Ultrathin Films: HSR Campus

08.45	Inscription with coffee
09.30	Welcome note Rector of the University of Applied Sciences HSR, Hermann Mettler / Nano-Cluster Bodensee / MatSearch Consulting
09.45	Hybridization of synthetic polymers and biopolymers for creation of high-performance biointerface Yukio Nagasaki, Tsukuba Research Center for Interdisciplinary Materials Science (TIMS), Japan
10.15	Engineering materials from the bottom up – Self-assembled peptide coatings Rudy Koopmans, Dow Europe GmbH, Basic Plastics TS&D, Switzerland
10.45	Coffee break, poster and foyer exhibition
11.15	Reactive nanoscaled multilayers for high-precision joining Andreas Leson, Fraunhofer Institute Material and Beam Technology, Germany
11.45	Gas barrier coatings Derek Illsley, Sun Chemical, United Kingdom
12.05	Synthesis, properties and applications of nanoscaled diamond Hans-Jörg Fecht, University of Ulm, Institute of Micro and Nanomaterials, Germany
12.25	Lunch, poster and foyer exhibition
14.00	Nanoscaled organic-, inorganic dispersions in electroless Ni deposits – measurement methods and tribological properties Wolfgang Siegert, Collini Wien GmbH, Austria
14.20	Nanocharacterization of thin films Alex Dommann, CSEM SA, Switzerland
14.40	Nanometer scale structuring of titanium oxide surfaces by anodisation in the presence of particles Arthur Ganz, Swiss Federal Institute of Technology, Laboratory of Powder Technology, Switzerland
15.00	AFM study of thin film of thermotropic, calamitic and discotic azomethines and polyazomethines Andrzej Sikora, Electronical Institute, Division of Electrotechnology and Materials Science, Poland
15.20	The current status of nanotechnology in Canada Hamid Mostaghaci, Counsellor, Science and Technology, Canadian Embassy, Berlin, Germany
15.30	Coffee break, poster and foyer exhibition
16.00	CCMX Technology Apéro: Introduction to CCMX Nathalie Jongen, CCMX, Switzerland
16.10	Pseudoplastic nanostructured ceramic surface layers with high adhesion Heinrich Hofmann, Swiss Federal Institute of Technology Lausanne, Laboratory of Powder Technology, Switzerland
16.25	High-temperature photonic structures Valery Shklover, Swiss Federal Institute of Technology Zurich, Laboratorium für Kristallographie, Switzerland
16.40	Characterisation of nanostructured layers by focused ion beam Marco Cantoni, Swiss Federal Institute of Technology Lausanne, Switzerland
16.55	Characterisation of synthetic fibers using the atomic force microscope Joern Lübben, Empa Swiss Federal Laboratories for Materials Testing and Research, Switzerland
17.10	Modern analytical tools and methods for surface characterisation Beat Keller, Empa Swiss Federal Laboratories for Materials Testing and Research, Switzerland
17.30	CCMX apéro, poster and foyer exhibition
19.30	Networking dinner: dinner speech Franziska A. Tschudi, WICOR Holding AG



Session **Nanocomposites** and Layer-by-Layer Structures: HSR Campus

08.30	Inscription with coffee
09.00	Welcome note by Nano-Cluster Bodensee and MatSearch Consulting
09.10	From soft matter physics to functional nanostructured materials Peter Schurtenberger, Adolphe Merkle Institute, University of Fribourg, Switzerland
09.40	Processing of nanodispersed composites, influences of various nanoparticles on the processing routes to achieve better mechanical and other physical properties – application and future markets Johanne Denault, Industrial Materials Institute, Canada
10.10	Multi-scale modelling of nanocomposites with DIGIMAT Roger Assaker, e-Xstream engineering SA, Belgium
10.50	Coffee break, poster and foyer exhibition
11.20	Bavarian Technology Lunch: Presentation of the Bavarian Cluster Nanotechnology Matthias Nüchter, Nanoinitiative Bayern GmbH, Gerbrunn, Germany
11.30	Innovative polymere foams through nanostructuring Volker Altstädt, Institute of Polymer Materials, University of Bayreuth, Germany
12.00	Functional nano particles as optical components Heinz Langhals, Department of Chemistry, LMU University of Munich, Germany
12.30	Determination of the degree of nanoparticle dispersion by rheological measurements Helmut Münstedt, Institute of Polymer Materials, Department of Materials Science, Friedrich-Alexander University of Erlangen-Nürnberg, Germany
13.00	Lunch, poster and foyer exhibition
14.20	Tailored interfaces – tuned mechanical properties Sara Dalle Vacche, Swiss Federal Institute of Technology Lausanne, Switzerland
14.50	Additives to enhance manufacturing and long-term performance of nanocomposites Rudolf Pfaendner, Ciba Lampertheim GmbH, Research Center Protection and Stabilization, Germany
15.20	Production of masterbatches with functionalized carbon nanotubes – from science to market Bryan T.T. Chu, Empa Swiss Federal Laboratories for Materials Testing and Research, Switzerland
15.40	From nanoparticles to composite structures and beyond – the idea of a virtual institute of nanotechnology in polymer composites Christine Arlt, German Aerospace Center, Institute of Composite Structures and Adaptive Systems, Germany
16.15	Conference farewell, foyer exhibition open until 18.30

25./26.11.09 – Poster Session : Poster List

- 1 **Nanostructured proteins thin films for electrochemical detection of drug mixtures**
Andrea Cavallini, Sandro Carrara, Giovanni de Micheli; Swiss Federal Institute of Technology, Lausanne, Switzerland
- 2 **Application potential of SiO_x and TiO_x thin films prepared by atmospheric pressure plasma CVD**
A. Schimanski, A Pfuch, K. Horn, M. Ramm, M. Günther, J. Schmidt; INNOVENT e.V. Technologieentwicklung, Jena, Germany
- 3 **Combustion CVD - A versatile method of atmospheric pressure nanoparticulate surface modification**
A. Schimanski, A. Heft, T. Hädrich, T. Struppert, J. Schmidt; INNOVENT e.V. Technologieentwicklung, Jena, Germany
- 4 **Low power sub-ppm detection of NO₂ gas with carbon nanotube sensors**
M. Mattmann, T. Helbling, L. Durrer, C. Roman, M. Fleischer, C. Hierold; Micro and Nanosystems, Dept. of Mechanical and Process Engineering, ETH Zurich, Switzerland; R. Pohle, Siemens AG, Corporate Technology, Munich, Germany
- 5 **In situ dynamic microtribology of carbon nanotube reinforced polymer composites**
R. Stengler, W.P. Weinhold, University of Applied Sciences Darmstadt, Germany; X.G. Hu, Hefei University of Technology, China; T. Schüssler, Innowep GmbH, Würzburg, Germany; D. Ziltener, Acctron AG, St. Gallen, Switzerland
- 6 **Instant formation of cyanine dye aggregates from organic solvents**
R. Hany, F. Nüesch, J. Heier, Swiss Federal Laboratories for Materials Testing and Research Empa, Dübendorf, Switzerland; R. Steiger, Le Mouret, Switzerland
- 7 **Bio-ID paper**
Philip Andres, Sabine Hottmann; Papiertechnische Stiftung PTS, Heidenau and Munich, Germany
- 8 **Sacrificial passivation as a novel concept to exploit fast diffusion in nanostructures for microelectronics assembly**
Karolina K. Sosnowska, Jolanta Janczak-Rusch, Empa, Joining and Interface Technology, Switzerland; Ralph Spolenak, ETHZ, Laboratory for Nanometallurgy, Switzerland
- 9 **Spray drying nanoparticles: process optimisation by laser techniques**
K. Eisele, Bytys AG, Uster; C. Arpagaus, Büchi Labortechnik AG, Flawil; F. Seppi, Hochschule für Technik Nordwestschweiz, Windisch, Switzerland
- 10 **Nanostrukturierte Oberflächen zur Sensitivitätssteigerung auf Wellenleiter Bio-Chips NOBIC**
A. Selle, T. Thelemann, Laserlabor Göttingen e.V., Germany; M. Ehrat, A. Lieb, Zeptosens a Division of Bayer (Schweiz) AG, Witterswil, Switzerland; M. Altana, INKA, Windisch, Switzerland; J. Gobrecht, Paul Scherrer Institute PSI, Villigen, Switzerland
- 11 **Computer simulation of coating of silicon nanoparticles with hydrogen**
Alexander Y. Galashev, Institute of Industrial Ecology, Russian Academy of Sciences, Yekaterinburg, Russia
- 12 **Nano spray dryer - submicron particles of minimal sample quantities at highest yield**
C. Arpagaus, Büchi Labortechnik AG, Flawil, Switzerland
- 13 **In-situ polymerization: different routes towards better nanocomposites**
Olivier Pravaz, Benoît Droz, Hervé Dietsch, Peter Schurtenberger, Adolphe Merkle Institute and Fribourg Center for Nanomaterials, University of Fribourg, Switzerland
- 14 **Graphene reinforced nanocomposites**
Rebecca Hollertz, Bryan T.T. Chu, Fernando Araujo de Castro, Frank Nüesch, Swiss Federal Laboratories for Materials Testing and Research Empa, Dübendorf, Switzerland
- 15 **Superparamagnetic silica nanoparticles with tunable saturation magnetization**
Vikash Malik, Hervé Dietsch, Peter Schurtenberger, Adolphe Merkle Institute and Fribourg Center for Nanomaterials, University of Fribourg, Switzerland

- 16 **Formation of nanocolumns on the Si substrate**
 Juras Ulbikas, A. Galdikas, V. Janusoniene, The Applied Research Institute for Prospective Technologies, Vilnius, Lithuania; E. Juzeliunas, P. Miecinskas, K. Leinartas, A. Selskis, Institute of Chemistry, Vilnius, Lithuania
- 17 **Nanocrystals of oxides Y3Al5O12 (YAG), Y4Al2O9 (YAM) prepared via sol-gel method for luminescent composites**
 A. Szysiak, L. Lipinska, A. Pajaczkowska, Institute of Electronic Materials Technology, Warsaw, Poland; W. Ryba-Romanowski, Institute of Low Temp. and Struct. Research, Wroclaw, Poland
- 18 **Synthesis by sol-gel method and characterization of LiMnPO4/Ag nanocomposite for lithium ion secondary batteries**
 Monika Michalska, Ludwika Lipinska, Ryszard Diduszko, Institute of Electronic Materials Technology, Warsaw, Poland; Krzysztof Korona, Maria Kaminska, Institute of Experimental Physics, University of Warsaw, Poland
- 19 **In-situ microtribology with high local resolution on nano-coated materials**
 Wolfgang P. Weinhold, Stephan Kuhn, Innowep GmbH, Würzburg, Germany
- 20 **Simultaneous formation of Al-doped ZnO nanocrystals and deposition of thin films via a microwave-assisted nonaqueous sol-gel process**
 Li Luo, Markus Niederberger, ETH Zurich, Dept. of Materials, Zurich, Switzerland
- 21 **Characteristics of sol-gel derived antimony-doped tin oxide coated ZnO nanorods**
 Sang Kyoo Lim, Sung-Ho Hwang, Soonhyun Kim, Hyun Jung Choi, Daegu Gyeongbuk Institute of Science and Technology, Advanced Nano-Materials Research Team, Daegu, Republic of Korea
- 22 **Pt immobilization on the TiO2-embedded carbon nanofibers by simple photodeposition method**
 Soonhyun Kim, Sang Kyoo Lim, Daeic Chang, Daegu Gyeongbuk Institute of Science and Technology, Div. of Nano-Bio Technology, Daegu, Republic of Korea; Sung Kyu Choi, Hyunwoong Park, Kyungpook National University, School of Physics and Energy Science, Daegu, Republic of Korea
- 23 **Selectivity in hydrogenation reactions over ionic liquid modified metal nanoparticles**
 A. Kraynov, T.E. Müller, CAT Catalytic Center, RWTH Aachen University, Aachen, Germany
- 24 **Concepts for stabilization of metal nanoparticles by ionic liquids**
 A. Kraynov, T.E. Müller, CAT Catalytic Center, RWTH Aachen University, Aachen, Germany
- 25 **Cyclone optimization for separation of inhalable spray dried particles**
 S. Blättler, C. Vogel, B. Wellig, Lucerne School of Engineering and Architecture, Horw, Switzerland; C. Arpagaus, M. Meuri, Büchi Labortechnik AG, Flawil, Switzerland
- 26 **Disposable polymeric microcantilevers**
 P. Urwyler, J. Gobrecht, H. Schiff, Paul Scherrer Institute PSI, Villigen, Switzerland; B. Müller, University of Basel, Biomaterials Science Center, Basel, Switzerland; O. Häfeli, A. Stumpp, B. Manhart, University of Applied Sciences Northwestern Switzerland, Windisch, Switzerland
- 27 **Mechanical properties of CNT-epoxy nanocomposites: A systematic investigation of CNT dispersion**
 T. Plyhm, A.K.- Chakraborty, M. Barbezat, A. Necola, M. Rees, G. Terrasi, Empa Swiss Federal Laboratories for Materials Testing and Research, Laboratory for Mechanical Systems Engineering, Dübendorf, Switzerland
- 28 **Fabrication of flame retardent fibers throughout preparation of PET-hydrotalcite organic-inorganic composites**
 Sanghee Kim, Sung-Ho Hwang, Sang Kyoo Lim, Sun-Hae Kim, Daegu Gyeongbuk Institute of Science and Technology, Advanced Nano-Materials Research Team, Daegu, Republic of Korea
- 29 **Design of bioactive silver-nanocomposite coatings for health care applications**
 Enrico Körner, Axel Ritter, Patrick Rupper, Elisabeth Michel, Dirk Hegemann, Empa Swiss Federal Laboratories for Materials Testing and Research, St. Gallen, Switzerland
- 30 **Low voltage scanning electron microscope**
 Taryl Kirk, Urs Ramsperger, Thomas Bähler, Danilo Pescia, ETH Zurich, Laboratorium für Festkörperphysik, Zurich, Switzerland; Urs Maier, Ferrovac GmbH, Zurich, Switzerland

- 31 **In-Line characterization and quality control of polypropylene nanocomposites using FT-NIR spectroscopy**
A. Witschnigg, S. Laske, M. Kracalik, G.R. Langecker, University of Leoben, Institute of Plastics Processing, Leoben, Austria; M. Feuchter, G. Pinter, University of Leoben, Institute of Materials Science and Testing of Plastics, Leoben, Austria; G. Maier, Materials Center Leoben Forschung GmbH, Leoben, Austria
- 32 **Comprehensive ionic charge sensing for macromolecules and particles**
Hanno R. Wachering, Particle Metrix GmbH, Meerbusch, Germany
- 33 **ZETAVIEW®: Zeta potential and size measurement of nano-particles by laser scattering video microscopy**
Hanno R. Wachering, Particle Metrix GmbH, Meerbusch, Germany
- 34 **Ceramic coatings with high photocatalytic activity for durable hygienic surfaces**
Hofer M., Penner D., Zurich University of Applied Sciences, Winterthur, Switzerland
- 35 **Reveal detailed properties of nanostructures by molecular dynamics simulation (MD)**
Lukas D. Schuler, Christian D. Berweger, xirus GmbH, Zurich, Switzerland
- 36 **The study of magnetic domain development in magnetic shielding films using MFM technique**
A. Sikora, M. Ozimek, Electrotechnical Institute and Wrocław University of Technology, Wrocław, Poland
- 37 **New Magnetic fixed reactors for improved nanoparticle coating**
J. Salaklang, J. Wanna, H. Hofmann, EPF Lausanne, Switzerland; A. Fink-Petri, University of Fribourg, Switzerland
- 38 **Deposition of photocatalytically active titania layers onto textiles**
Sidney Chappuis, Eva Maria Moser, University of Applied Sciences Western Switzerland, Geneva, Switzerland
- 39 **Electrical, thermal and strength properties of alumina/carbon nanofiber ceramic composites**
Gurdial Blugan, Jakob Kübler, Empa, Dübendorf, Switzerland; M. Michalkova, P. Sajgalik, Slovak Academy of Sciences, Bratislava, Slovakia; T. Minghetti, C. Schelle, Ruag Components AG, Altdorf, Switzerland
- 40 **NanoOrgano - nano-modified, semi-consolidated preforms for the production of thermoplastic composites**
P. Kravaev, J. Wulfhorst, G. Seide, T. Gries, Institut für Textiltechnik der RWTH Aachen, Germany; I. Hassiger, T. Burkhart, Institut für Verbundstoffe GmbH, Kaiserslautern, Germany
- 41 **Doxorubicin loaded multifunctional mixed micelles: Tumor diagnosis targeting and antitumor efficiency against HeLa cells**
Hsieh-Chih Tsai, Wie-Hsiang Chang, Ging-Ho Hsiue, National Tsing Hua University, Hsinchu, Taiwan; Chun-Liang Lo, National Yang Ming University, Taipei, Taiwan; Tzu-Chen Yen, Chang Gung Memorial Hospital, Taoyuan, Taiwan
- 42 **Tribological behaviour of DLC coated articulating joint implants**
G.B. Thorwarth, C.V. Falub, U. Müller, R. Hauert, Empa, Dübendorf, Switzerland; M. Tobler, Synthes GmbH, Langendorf, Switzerland; C. Voisard, IonBond AG, Olten, Switzerland
- 43 **Multiscale modeling applied to polymer-clay nanocomposites**
Andrea Danani, SUSPI-ICIMSI, Manno, Switzerland
- 44 **"Shaping radiation curable colloidal dispersions - from ceramic/polymer fibers and microspheres to gradient porosity multilayered ceramic materials**
Yoram DeHazan, Judith Heinecke, Gregor Müller, Thomas Graule, Empa, Dübendorf, Switzerland
- 45 **Advanced compounding of polymer nanocomposites by assembling a melt pump in the compounding line**
A. Witschnigg, S. Laske, M. Kracalik, G.R. Langecker, C. Holzer, University of Leoben, Institute of Plastics Processing, Leoben, Austria; M. Feuchter, G. Pinter, University of Leoben, Institute of Materials Science and Testing of Plastics, Leoben, Austria; G. Maier, Materials Center Leoben Forschung GmbH, Leoben, Austria
- 46 **Production methods for graphene and resulting material properties**
U. Kosidlo, F. Tonner, C. Glanz, I. Kolaric, Fraunhofer Institute for Manufacturing Engineering and Automation IPA, Stuttgart, Germany; V. Skalakova, S. Roth, Sineurop Nanotech GmbH, Stuttgart, Germany; H.J. Park, Max Planck Institute for Solid State Research, Stuttgart, Germany
- 47 **Synthesis of cobalt mixed oxide nanobars using nanoreactors of MCM-48**
Fatemeh Nouroozi, Faezeh Farzaneh; Alzahra University, Dept. of Chemistry, Tehran, Iran

- 48 **Growing of carbon nanotubes on different mesoporous material in presence of cobalt ion as catalyst**
 Fatemeh Nouroozi, Daezeh Farzaneh; Alzahra University, Dept. of Chemistry, Tehran, Iran
- 49 **A magnetic sensor for multiparametric detection using a mixture of chemical and biologically synthesized nanoparticles**
 E. Alphanđery, Universit  Pierre et Marie Curie, Paris, France; L. Lijeour, Nanobacterie SARL, Paris, France; L. Motte, Y. Lalatonne, Laboratoire CSPBAT, Bobigny, France; L. Lenglet, Magnisense SARL, Rosny sous Bois, France
- 50 **Magnetic properties of cobalt doped magnetosomes**
 E. Alphanđery, C. Carvallo, N. Menguy, IPMC, Universit  Pierre et Marie Curie, Paris, France; S. Sagan, Dept. de Biochimie, Universit  Pierre et Marie Curie, Paris, France
- 51 **Polyethylene nanocrystals as mesoscopic precursors for the formation of submicron semicrystalline polymer films**
 Qiong Tong, Marina Krumova, Stefan Mecking, University of Konstanz, Germany
- 52 **Nanoeffects observed for the optical band gap and dielectric index of dc magnetron sputtered TiO₂ films**
 Marius Stamate, Gabriel Lazar, Iuliana Lazar, University of Bacau, "Vasile Alecsandri", Bacau, Romania
- 53 **Mixed micelle systems formed from critical micelle concentration and temperature-sensitive diblock copolymers for cancer therapy**
 Ging-Ho Hsiue, Sheng-Jie Lin, Hsieh-Chih Tsai, National Tsing Hua University, Hsinchu, Taiwan; Chun-Liang Lo, National Yang-Ming University, Taipei, Taiwan; Chien-Hsin D. Cheng, Industrial Technology Research Institute, Hsinchu, Taiwan
- 54 **Confinement-induced structural modifications of alkali metals**
 A. Ghaffar, W. Pichl, G. Krexner, University of Vienna, Faculty of Physics, Vienna, Austria
- 55 **Hybrid vertical-cavity surface-emitting lasers with organic active materials for the UV-range**
 F. Messow, M. Lenk, D. Todorov, Y. Wang, T. Kusserow, M. Bartels, H. Hillmer, Institute of Nanostructure Technologies and Analytics, University of Kassel, Germany
- 56 **Nanobiodetectors and their applications**
 J.J. Langer, K. Langer, K.H. Bartkowiak, Pracownia Fizykochemii Materiał w I Nanotechnologii, rem, Poland; L. Zabrocka, O rodek Diagnostyki i Zwalczenia Zagro   Biologicznych, Puławy, Poland
- 57 **Control of corrosion in steel using polyelectrolyte multilayer nanofilm**
 Samad Sabbaghi, Nanotechnology Research Institute, Shiraz, Iran; Reza Bazargan-Lari, Afshin Nemati, Islamic Azad University, Dept. of Mechanical Engineering, Marvdasht, Iran,
- 58 **Investigation on the role of natural materials in corrosion using nanotechnology**
 Samad Sabbaghi, Nanotechnology Research Institute, Shiraz, Iran; Reza Bazargan-Lari, Afshin Nemati, Islamic Azad University, Dept. of Mechanical Engineering, Marvdasht, Iran

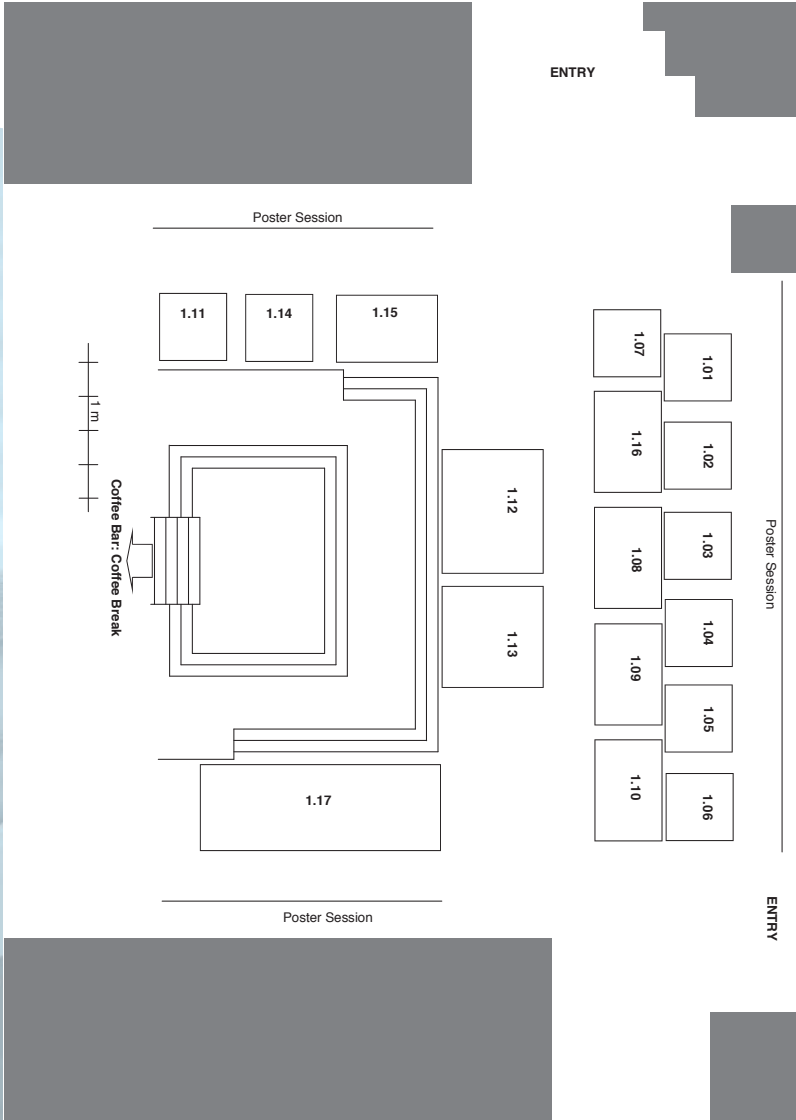
25.11.09 – Symposium Dinner

The symposium dinner will take place on Wednesday evening at 19.30 at Hotel Schwanen in Rapperswil at the prestigious location on the picturesque lakeshore promenade.

The keynote address at the dinner will be delivered by Franziska Tschudi, CEO WICOR Holding AG, a leading global supplier of engineered products and services for the electrical technology and plastics technology industry.

Casual clothing is recommended.

25./26.11.09 – Foyer Exhibition: NanoSpot



25./26.11.09 – Foyer Exhibition: NanoSpot

1.01 Nanotechnologie-Netzwerk des Kantons Freiburg

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Phone +41 26 300 91 71 / Fax +41 26 300 96 24
stefan.hengsberger@hefr.ch / www.nano-net.ch



Réseau nanotechnologies
Nanotechnologie **Netzwerk**

Réseau nanotechnologies/Nanotechnologie-Netzwerk (www.nano-net.ch) is a network that aims to facilitate a profitable and responsible use of Nanotechnology by industry. The project stems from a new regional policy that is co-sponsored by SECO and the Canton of Fribourg, and coordinated by the Adolphe Merkle institute and the Fribourg Engineering school. Any company or academic institution who is interested can become a member of the network.

1.02 CANADIAN Embassy

Kirchfeldstrasse 88
CH-3005 Bern
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werner.naef@international.gc.ca



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The Canadian nanotechnology industry incl. the National Research Council - Canada's leading resource for R&D and innovation – play a key role in Canada's goal to be an integral part of the international quest for discovery at the atomic and molecular level. We are striving to become a world leader in nanotechnology through innovations in materials sciences, biomedicine and ICT, etc. Find out more about Canada's expertise at the leading edge of the emerging nanotechnology cluster at our booth.

1.03 Levitronix GmbH

Technoparkstrasse 1
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1.04 Keyence AG Schweiz

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1.05 **GMP SA**

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CH-1020 Renens or
Dübendorferstrasse 11a
CH-8117 Fällanden
Phone +41 21 633 21 21 / Fax +41 21 633 21 29
info@gmp.ch / www.gmp.ch

General Microtechnology & Photonics
Systems for Industry, Research, Telecom & Medicine

Since 1977, GMP is active in the fields of laser, spectroscopy, electro-optics and micropositioning. Thanks to an efficient sales and service organisation, GMP has become not only a top distributor of high technology products, but is also able to propose turnkey solutions for equipment integration, developed by GMP's engineering department

1.06 **SOPRALAB**

55 avenue de l'Europe
F-92400 Courbevoie
Phone +33 1 4649 6709 / Fax +33 1 4242 2934
sales@sopra-sa.com / www.sopra-sa.com

SOPRALAB is an optical metrology company with over 25 years experience in the supply of state of the art Spectroscopic Ellipsometers for the measurement and analysis of thin films. The completely modular designs are tailored to respond to domains ranging from R&D to industrial integrated systems. The powerful technique provides information such as Refractive Index, Transmission, Reflectance, Thickness, Haze, Sheet resistance, Pore Size Distributions and much more for the optimization of today's material development.

1.07 **CCMX EPFL STI**

Bâtiment MX, Station 12
CH-1015 Lausanne
Phone +41 21 693 46 56
nathalie.jongen@epfl.ch / www.ccmx.ch



CCMX

Competence Centre for
Materials Science and Technology

CCMX - "Competence Centre for Materials Science and Technology" - CCMX's mission is to link the needs of industry with academic research. Its focus is pre-competitive research, training and networking opportunities for all the actors of the materials science scene in Switzerland.

CCMX's activities will be presented with emphasis on its new database of analytical equipment available in Switzerland: MaCH2. Access to this database is free and allows users to find the analytical equipment they are looking for. It provides a list of available instruments with information such as technical data, properties that can be measured, application examples, etc.

1.08 **Schaefer-Tec AG**

Badimatte 21
CH-3422 Kirchberg
Phone +41 34 423 70 70 / Fax +41 34 423 70 75
ch@schaefer-tec.com / www.schaefer-tec.com



The Schaefer group with offices in Europe and the Schaefer-Tec AG office in Switzerland distributes scientific instruments in the field of nanotechnology, microtechnology and surface inspection. Atomic Force Microscopes (AFM), Optical Profilers (Interferometer, Confocal), Tribometers, as well as Vacuum, Gasflow and Magnetic field measuring devices are represented.

Product brands represented by Schaefer include: RHK, Park Systems, Mikromasch, SPIP, Sensofar, Fogale, PhaseView, XRT, OCI, CETR, NanoSight, Hastings, Group3, Picowatt and Vacseal.

1.09 **Empa, Swiss Federal Laboratories for Materials Testing
and Research**

1.17a

Lerchenfeldstrasse 5
CH-9014 St. Gallen
Phone +41 71 274 74 74 / Fax +41 71 274 76 63
urs.buenter@empa.ch / www.empa.ch



Materials Science & Technology

Empa is an interdisciplinary research and services institution for material sciences and technology development within the ETH Domain. Empa's research and development activities are oriented to meeting the needs of our society, and link together applications-oriented research and the practical implementation of new ideas, science and industry, and science and society. Thanks to its years of experience in the field, Empa is able to offer its industrial partners solutions tailored to meet their specific needs. The focal points of Empa's research work in the field of nanotechnology cover the development and use of instruments, functionalization of thin coatings, nanoparticle formation, the self-organizing nature of molecules, self-assembling nanostructures, bioorganic surfaces, nano electronics and nano photonics, while results are disseminated and possible risks of nanotechnology are examined and evaluated.

1.10 **teltec systems ag**

Oberebenestrasse 11
CH-5620 Bremgarten
Phone +41 56 648 70 00 / Fax +41 56 648 70 07
info@teltec.ch / www.teltec.ch



Teltec systems ag is a 16 years old company which represent the following products in Switzerland:

Optical Beam Handling Systems + Positioning Systems	OWIS GmbH www.owis.eu
Micro- and Nano Positioning Systems	MECHONICS AG www.mechonics.com
Optical Tables and Breadboards	OPTA GmbH www.opta-gmbh.de
Laser Marking + Engraving Systems	FOBA GmbH www.foba.de

All this top-quality products are "Made in Germany". We would be glad to show you our products and to advise you. Please don't hesitate to contact us for further information or for an offer.

1.11 **xirrus GmbH**

Buchzelgstrasse 36
CH-8053 Zürich
Phone +41 44 741 01 74 / Fax +41 44 741 01 73
info@xirrus.ch / www.xirrus.ch



xirrus simulation assists with solving complex problems that are difficult to tackle experimentally. In nanotechnology, it opens up new views at an atomic to mesoscopic scale. xirrus pioneers molecular dynamics simulation in industrial research and development as a tool to handle plenty of physical and chemical interactions simultaneously, in order to observe and study dynamic processes such as self-assembly or interactions on a nanostructured surface. xirrus GmbH is a Swiss SME founded in 2001.

1.12a **Nanoinitiative Bayern GmbH**

Oberer Kirschberg 2
D-97218 Gerbrunn
Phone +49 931 3598 6501 / Fax +49 931 4608 8469
info@nanoinitiative-bayern.de / www.nanoinitiative-bayern.de



Nanoinitiative Bayern GmbH manages the competence network Cluster Nanotechnology in Bavaria. The primary task is to support an efficient transfer of latest results of research and development into industrial applications. The focus is on companies with application potential for nanotechnologies, especially SMEs, as well as on universities, universities of applied sciences and public research institutes. The 'Nanonetz Bayern e.V.' acts as open platform for the cluster activities.

1.12b **NETZSCH-Feinmahltechnik GmbH**

Sedanstrasse 70
D-95100 Selb
Phone +49 928 7797 0 / Fax +49 928 7797 149
info@nft.netzsch.com / www.netzsch-grinding.com



NETZSCH Grinding & Dispersing

The Business Unit Grinding & Dispersing, one of three business units of the global NETZSCH Group, offers a comprehensive program for the many challenges in mechanical process engineering. Here the Business Unit is primarily involved in the areas of wet and dry grinding, mixing, dispersing, de-aeration and classifying. The laboratory- and production-scale machines, as well as complete production lines, are used in almost all fields of industries; e.g. in the forward-looking nanotechnology, for the production of inks, minerals or foods.

1.12c **Innowep GmbH**

Haugerring 6
D-97070 Würzburg
Phone +49 931 322 980 / Fax +49 931 322 9812
info@innowep.com / www.innowep.com



One of the core competences of Innowep GmbH is in-situ microtribology with high local resolution, e.g. wear, scratch resistance, total deformation, hardness, topography, structure and roughness up to humane physiological perceptions like haptics and the visual impression. These innovative techniques can be applied to the manufactured product as well as used for research, development, material and process evaluation.

1.12d **Acctron AG**

Lerchenfeldstrasse 5
CH-9014 St. Gallen
Phone +41 71 511 24 65 / Fax +41 71 511 24 66
info@acctron.com / www.acctron.com



Acctron is specialized in innovative methods for surface and material testing and documentation. The core competences include determination of functional properties of materials, e.g. in-situ micro-tribology with high local resolution, abrasion, total deformation, hardness, scratch resistance, as well as human-physiological effects like tactile and visual appearance. Acctron operates its own independent laboratory at the Technology Centre of the Federal Institute of Materials Science & Technology (EMPA) in St.Gallen.

1.12e **NanoScape AG**

Am Klopferspitz 19
D-82152 Planegg
Phone +49 89 4613 3443 10 / Fax +49 89 4613 3443 30
info@nanoscape.de / www.nanoscape.de



NanoScape develops and produces highly porous, nanoscale, aluminosilicate (NanoZeolite) materials. Pore sizes range from 3 - 100Å with particle size around 100nm. Materials are available as powders (hydrophilic or organically-modified surfaces) or suspensions (aqueous or organic solvents). Materials are used in CleanTech applications: heat pumps, heat recovery and dehumidification systems; water purification membranes; air filters; catalysts; and encapsulation and triggered release applications.

1.13 **BÜCHI Labortechnik AG**

Meierseggstrasse 40
CH-9230 Flawil 1
Phone 41 71 394 63 63 / Fax 41 71 394 64 64
arpagaus.c@buchi.com / www.buchi.com



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1.14 **Alemnis GmbH**

Feuerwerkerstrasse 39
CH-3602 Thun
Phone +41 76 541 46 49 / Fax +41 76 541 46 49
stephan.fahlbusch@alemnis.ch / www.alemnis.ch



Alemnis offers development, manufacturing and integration of customized instruments and tools for testing and manipulation in micro- and nanotechnology applications. Our products include materials test devices integrated into scanning electron microscopes, gas injection systems for FEB/FIB processing as well as micro-an. The unique combination of our know-how includes several years of experience in precision engineering, materials science, microrobotics and nanomanipulation.

1.15a **SuSoS AG**

Lagerstrasse 14
CH-8600 Dübendorf
Phone +41 44 801 80 53 / Fax +41 44 801 80 60
samuele.tosatti@susos.com / www.susos.com



SuSoS AG is a company which provides ultrathin functional coatings (a few to hundred of nanometers) for various industrial applications. Your surfaces can be beneficially modified in order to tailor wettability (oil/water) as well as frictional properties (e.g. very low friction) or to achieve better adhesion, corrosion resistance, an ease of cleaning, anti-fog or non-fouling effect and many more. We have state-of-the-art instruments in order to solve surface analysis needs of our customers.

1.15b **Physical Electronics GmbH**

Fraunhoferstrasse 4
D-85737 Ismaning
Phone +49 89 962 75 22 / Fax +49 89 962 75 50
tgross@phi-europe.com / www.phi-europe.com



Physical Electronics (PHI) GmbH offers sales and service for high technology instrument manufacturers to support their customers in Europe. With our experienced, highly motivated team we serve a large customer base for our partners Physical Electronics Inc. and Hysitron Inc., both located in the US. Our expertise is in surface science and nano mechanical Testing. Employing ultra high vacuum (UHV) for surface analytical techniques like Auger, XPS and SIMS, as well as scanning probe technology, for nano-mechanical testing.

1.16 **RhyTech - Materials World**
Badische Bahnhofstrasse 16
CH-8212 Neuhausen am Rheinflall
Phone +41 52 674 99 90 / Fax +41 52 674 99 99
info@rhytech.ch / www.rhytech.ch



RhyTech Materials World is the specialist Technology Park for Materials Science in Neuhausen am Rheinflall, Switzerland. The high-tech start-ups, established technology businesses and specialist university institutes are embedded in a state-of-the-art international environment for applied Research and Development (R&D), industrialisation and the launch of new applications in the market. RhyTech was founded in 2008 and is a public private partnership between Alcan Technology & Management AG, Neuhausen, ITS Industrie- und Technozentrum Schaffhausen and Canton Schaffhausen.

1.17a **Empa Swiss Federal Laboratories for Materials Testing and Research**
Lerchenfeldstrasse 5
CH-9014 St. Gallen
Phone +41 71 274 74 74 / Fax +41 71 274 74 99
dirk.hegemann@empa.ch / www.empa.ch



Materials Science & Technology

1.17b **ZHAW School of Engineering**
IMPE Institute of Materials and Process Engineering
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CH-8400 Winterthur
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martina.hirayama@zhaw.ch / www.impe.zhaw.ch

Zürcher Hochschule
für Angewandte Wissenschaften



The IMPE has broad expertise in both materials science and process engineering, which facilitates the development of innovative materials, manufacturing processes and plants. We are active in the areas of polymers, ceramics, metals, adhesion technology, process engineering and material analysis. Activities in research and development are focused on surface technology, composites and process development. In all of these areas, the IMPE works on current topics in micro- and nanotechnology.

1.17c **Forschungszentrum Mikrotechnik**
Fachhochschule Vorarlberg GmbH
Hochschulstrasse 1
A-6850 Dornbirn
Phone +43 5572 792 7200 / Fax +43 5572 792 9501
johannes.edlinger@fhv.at / www.fhv.at



The Research Centre for Microtechnology carries out work in the areas of microtechnological production methods and micro-systems components:

- Process development: UV lithography with thick resist (SU8) and DUV lithography (193 nm light source); plasma etching (RIE and DRIE from Si and dielectrics); electroplating with Ni and Cu; laser treatment with ultra short pulse (300 fs) and excimer laser (193 nm); thermal oxidation)
- R&D for industrial applications
- Manufacture of prototypes and feasibility studies
- Analysis of materials using SEM and EDX
- Preparation of samples

1.17d **Interstaatliche Hochschule für Technik Buchs
Institut für Mikro und Nanotechnologie**

Werdenbergstrasse 4
CH-9470 Buchs

Phone +41 81 755 33 11 / Fax +41 81 756 54 34
andre.bernhard@ntb.ch / <http://institute.ntb.ch/mnt.html>



**NTB
INTERSTAATLICHE HOCHSCHULE
FÜR TECHNIK BUCHS**

The Institute for Micro- and Nanotechnology (MNT) of the NTB

The Institute MNT belongs to the University of Applied Sciences (NTB) in Buchs, Switzerland. A highly skilled team of 29 scientists and engineers is ready to support you. We feel home in microsystems technology, packaging, photonics, analytics, polymeric, and process technologies. The MNT runs over 250 sqm of clean-room area, equipped with a broad range of facilities for semiconductor-based technology. The MNT has a long tradition of performing state-of-the-art applied R&D projects for customers in the field of micro/nanotechnology.

1.17e **INKA Institut für nanotechnische Kunststoff-Anwendungen**

Klosterzelgstrasse 2
CH-5210 Windisch

jens.gobrecht@psi.ch / <http://www.fhnw.ch/technik/inka>



The Institute of Polymer Nanotechnology is a joint venture in Switzerland between the Paul Scherrer Inst., Villigen and the Univ. of Appl. Sciences Nordwestschweiz in Brugg/Windisch. The main research focus lies on functionalization of polymer materials by nanoparticle-additives and on surface functionalization through embossed or injection molded topographic micro- and nanostructures down to below 20nm. Currently several research projects are ongoing in these areas with Swiss and international companies funded through national or European funding agencies.

1.17f **Nano-Cluster Bodensee, Verein Mikro- und Nanotechnologie
Euregio Bodensee**

Lerchenfeldstrasse 5
CH-9014 St.Gallen

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Nano-Cluster Bodensee supports networking and collaboration between the industry and academia with the aim to promote the exchange of experiences, best practices, technology transfers and joint development projects. Focused on the Micro- and Nanotechnology, cluster members co-operate along the value chain to strengthen their mutual competitiveness. Cluster members benefit from strong synergies between competences and the ready to use infrastructure in the cluster. The Nano-Cluster Bodensee gathers enterprises offering technology solutions, enterprises ready to integrate micro and nano technologies in their products or processes, research centers and university departments involved in these fields of activity and last but not least partners specialized in investment support.

1.17g **Nano-Zentrum Euregio Bodensee (NEB)**

Universitätsstrasse 10
D-78464 Konstanz

Phone +49 7531 88 3791 / Fax +49 7531 88 3789
friederike.stuckenbrock@uni-konstanz.de / www.neb-konstanz.de



The NEB (Center of competence for technology transfer) provides technology transfer services primarily for local small and medium-sized businesses. The NEB supports these companies in applying and integrating micro- and nano- technology and promotes its propagation. For this task of technology transfer the Nanostructure Laboratory and the Steinbeis- technology transfer centre at the university of Konstanz plays an essential role and offers services to companies.

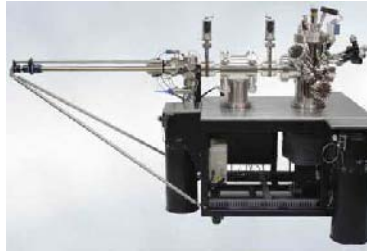


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MNT

Micro- and Nanotechnology

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