

## Support from Science

We are very proud to present the advisory board of Imaging & Microscopy to our readership. Composed of leading experts from around the world, its role is to advise on current issues and advances in all fields of modern microscopy and imaging. The board serves as a guardian for the journals' scientific quality. In the most general term it is a sounding board and a conscience. Imaging & Microscopy calls upon suggestions and criticism that will make a good journal even better.

David McCarthy & Annie Cavanagh: Pharmaceutical Drug delivery Polymer (polymethacrylic acid and the corticosteroid drug prednisolone).

### Prof. Alberto Diaspro



Alberto Diaspro has had a distinguished career in the Applied Physics area. He is doing pioneering work in studying bio structures both in situ and in vitro using bio mimetic – nanobiorobot – and cellular systems to address normal and abnormal functioning of biological assemblies. Conventional, optical sectioning and confocal fluorescence microscopy, two-photon fluorescence microscopy and spectroscopy architecture, non linear

optical microscopy, single molecule detection methods, scanning probe microscopy, just to mention some of them, belongs to his standard repertoire of biophysical instrumentation. In addition to authoring more than a hundred peer reviewed papers, he has played a role as reviewer on several international journals in the biophysical and microscopical research area. Alberto Diaspro is Professor of Physics and Biophysics at Department of Physics of the University of Genoa, director of an IFOM – FIRC Oncology Institute, Milan – research program. He also joins the Institute of Biophysics of the National Research Council (CNR) and the Neuroscience and Brain Technology Department of the Italian Institute of Technology (IIT). AD is the President Elect of EBSA (European Biophysical Societies' Association) and Member of the International Relations Committee of the Biophysical Society.

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### Dr. Colm Durkan



Colm Durkan is a lecturer in Nanotechnology at the University of Cambridge, and is based in the Nanoscience centre and at the Engineering Department. A pioneer in scanning-probe microscopy and electronic transport at the nanoscale, he continues his work on the development of scanning tunnelling microscopy tools for characterisation of the magnetic and electronic properties of molecules and surfaces.

He has published over 30 articles in peer-reviewed journals, has given over 30 invited talks at international conferences, and is on the Editorial board of Ultramicroscopy.

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### Dr. Markus Dürrenberger



Markus Dürrenberger has specialized on modern microscopy early in his career. He obtained a PhD from the University of Basel, Biocenter, Department of Microbiology (Switzerland). After being postdoc in the centre for microscopy of the University of Zurich at the Institute of Virology, he moved again to Basel. Today, Markus Dürrenberger leads the Microscopy Center at the University of Basel, Biocenter (ZMB). He is president of the Swiss Society for Optics and

Microscopy (SSOM). His work focuses on the application and the instrumental development of modern microscopy.

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## Dr. Roland Fleck



Roland Fleck is a Principal Scientist employed as head of the Biological Imaging and Assay Development Section at the National Institute for Biological Standards and Control. He is a registered Clinical Scientist and specialist in freeze fracture/freeze etch preparation of tissues. Roland Fleck presently runs the centralized imaging facility which operates; 200keV cryo-TEM, cryo-FEGSEM, confocal laser scanning, live cell and epifluorescence/epipolarised microscopes. The facility also operates a wide range of cryo-preparation equipment, including; high pressure freezing, freeze fracture/freeze etch, freeze substitution and cryo-sectioning technologies.

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## Prof. Bert Hecht



Bert Hecht studied physics at the University of Konstanz, where he graduated in 1993 with the diploma thesis: „Mikroskopie und Spektroskopie im Optischen Nahfeld“, supervised by Prof. Dr. O. Marti / Prof. Dr. J. Mlynek. He then joined the IBM Zurich Research Laboratory in Rüschlikon and worked with D.W. Pohl in the area of near-field optics. After obtaining his Ph.D. from the University of Basel (Prof. Dr. H.J. Güntherodt) with work on „Forbidden Light Scanning Near-Field Optical Microscopy“ he moved to the Swiss Federal Institute of Technology (ETH), engaging in optical single-molecule spectroscopy in combination with scanning probe techniques in the group of Prof. U.P. Wild. In 2001 he received a research professorship from the Swiss National Science Foundation which allowed him to start an independent research group at the University of Basel where he became a member of the National Competence Center for Research in Nanoscale Science (NCCR Nano). Since October 2006 Bert Hecht is associate professor at the Physics Institute, Experimental Physics 5, of the University of Würzburg. He is applying Nano-Optics and Bio-Photonics to investigate nanophotonic circuitry and ultra sensing techniques.

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## Prof. Min Gu



Min Gu is one of the pioneers in the optoelectronic research. He is a noted speaker and lecturer in the fields of applied optics. Min Gu obtained a PhD in Optics from the Chinese Academy of Sciences, P.R. China, in 1988. He is Vice President of the International Commission for Optics and of the International Society for Optics Within Life Science, OWLS (2005). He is the author of two textbooks and more than two hundred internationally refereed papers. Min Gu is University Distinguished Professor, Professor (Chair) of Optoelectronics and Director of the Centre for Micro- Photonics and Node Director of the Australian Research Council Centre of Excellence for Ultrahigh-bandwidth Devices for Optical Systems.

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## Priv.-Doz. Dr. Martin Hegner



Martin Hegner received the MS degree in Biochemistry and Molecular Biology and his PhD (Biochemistry and Biological Scanning Probe Microscopy) from the Swiss Federal Institute of Technology (ETH), Zurich, Switzerland. In 1996, he received postdoc fellowships from Swiss National Foundation and Human Frontier Science Program to conduct biophysical research on the U.S. West coast. His work in the U.S. (U of Oregon & UC Berkeley) in the team of Carlos Bustamante focused on optical tweezers manipulation of single biomolecules.

On joining the University of Basel again in 1999, he built up a biophysical research group conducting biophysical research in the field of single biomolecule manipulation using scanning probe microscopy and optical tweezers. Today, Martin Hegner is Priv.-Doz. of Biophysics, Biological Nanoscale Science at the Institute of Physics, University of Basel and regional lecturer (CH, D, F) in the field of Nanoscale Science. In 2001 he was elected as one of the project leaders of the National Center of Competence in Research Nanoscale Science (leading house: Institute of Physics, University of Basel).

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## Prof. Fu-Jen Kao



Fu-Jen Kao received his PhD in physics from Cornell University, Ithaca, NY, USA. He started his distinguished career in 1993 when joining the Department of Physics at the National Sun Yat-Sen University in Kaohsiung, Taiwan. He became a Professor in 2002. Afterwards he moved to the Institute of Electro-Optical Engineering, National Sun Yat-Sen University, and is currently the chairman of the Institute of Biophotonics Engineering at National Yang-Ming University. He is also serving as the associate dean in the Research and Development Office at Yang-Ming. His research interests include applications and developments of contemporary laser scanning microscopy and localised surface plasmon resonance biosensing. Dr. Kao is a member of the SPIE, the Optical Society of America, Royal Microscopy Society and the Physics Society of R.O.C. He is currently a member of the Focus on Microscopy committee.

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## Prof. Dr. Norbert Kruse



N. Kruse graduated in Technical Chemistry (Chemical Engineering) at the Technical University of Berlin (TUB, Germany) in 1977. The same university awarded him a Ph. D. in engineering sciences after a doctoral thesis at the Fritz-Haber-Institut of the Max-Planck-Society in Berlin (1980). The following five years he was employed as „wissenschaftlicher Assistent“ at the Institute of Chemical Engineering of the TUB. After qualifying as a university lecturer at the TUB in 1987, he joined the Department

of Chemical Engineering at the ETH Zürich (Switzerland). In 1994, he was appointed to a professorship in the Chemistry department of the Université Libre de Bruxelles (ULB) where he founded a research group „Chemical Physics at Surfaces and Heterogeneous Catalysis“. After reconstruction at the ULB in 2000, N. Kruse now holds the chair of Chemical Physics of Materials (Catalysis-Tribology).

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## Dr. Daniela Nicastro



Daniela Nicastro obtained a PhD in Biology at the Ludwig-Maximilians-Universität in Munich, Germany. After receiving a postdoctoral scholarship from the Max-Planck-Gesellschaft, MPI for Biochemistry, Department for Molecular Structural Biology, Martinsried, Germany, she moved as Post-doctoral Research Fellow to the Boulder Laboratory for 3-D EM of Cells, Department of Molecular, Cellular and Developmental Biology, University of Colorado, CO, USA. Her work is focused on investigating the 3-D structure of frozen-hydrated and freeze-substituted axonemes by applying high resolution electron tomography for a better understanding of the molecular mechanisms underlying the flagellar stroke.

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## Dr. Patrick Schwarb



Patrick Schwarb is head of the imaging facility at the FMI (Friedrich Miescher Institut) in Basel which is part of Novartis Research Foundation. He received a PhD in Cell Biology at the Polytechnical School ETH in Zurich. Patrick Schwarb was assigned as Manager of the (EEC) European Advanced Imaging Center Carl Zeiss. As key account manager of several companies in microscopy and imaging he has visited many of the Microscopy and imaging

Centers and core facilities through Europe but as well some of them in Japan and US. As board member of SSOM (Swiss Society of Optics and Microscopy) and ELMI (European Light Microscopy Initiative) he helps to setup a powerful network in the field of microscopy and imaging.

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## Dr. Denis Spitzer



Denis Spitzer received his Ph.D. in Physical-Chemistry from the University Louis Pasteur of Strasbourg in 1993. He is the Founding-Director of the NS3E laboratory (UMR 3208), a joined research laboratory between the ISL and the Centre National de la Recherche Scientifique (CNRS). This laboratory is specialized in the synthesis and the study of nanomaterials under extreme stress. He is the author of about 100 publications in peer-reviewed

journals, seven patents, and confidential research reports. His main research activities are the nanocrystallization of organic compounds and the imaging of energetic nanomaterials or molecules by near field microscopies (AFM and STM).

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## Prof. George A. Stanciu



He is Director of Center of Microscopy- Micro-analysis and Information Processing, founded by him in 2002. He joined University "Politehnica" in 1974, where he gained a PhD in technical physics in 1981. He has been working in the laser scanning microscopy field (instrumentation and application) since 1974. In 1977, his group reported the first scanning digital system, which was successfully used for various investigations on different semiconductor devices. Presently his research interests are: imaging based on laser scanning microscopy techniques, nonlinear effects, applications based on AFM and STM, semiconductor nanocrystals.

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## Prof. Ing. Giovanni Valdrè



Giovanni Valdrè gained the "Laurea" in Physics from the University of Bologna, Italy,

discussing a thesis on Electron Energy Loss and X-ray Energy Dispersive Spectroscopy. Then he specialised in Electron Microscopy and Crystallography at the Cavendish Laboratory, University of Cambridge, UK, where he received the Master of Philosophy Degree and the PhD in Physics. He was then made Chartered Engineer from the Engineering Council,

London, UK. His work at the Cavendish Lab was focused on the characterisation of nanostructured materials by means of electron and scanning probe microscopy techniques (TEM, STEM, PEELS, EDS, ESEM, AFM-SPM). He was Visiting Scientist at the Joint Research Center of Ispira, continuing the research and dealing with a network on nanostructured materials of various nature (nanometals, nanostructured biomaterials and biominerals). Today, Giovanni Valdrè is at the Department of Earth and Geo-Environmental Sciences of the University of Bologna, Italy, where he lectures on Mineral Materials Sciences in the Faculty of Sciences and on Biomaterials for the Faculty of Engineering. Dr Valdrè authored and co-authored more than 110 international papers, and about 200 national and international conference proceedings. He is author of university text books on Measurement Methodologies.

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## Dr. Roger Wepf



Born 1962 in Strasbourg, France, he received his PhD in cell biology in 1992 at the ETH. After a post-doctoral fellowship, he joined the physical instrumentation program at EMBL in Heidelberg, in the group of Max Haider, developing cryo-technology for corrected LVSEM and EM applications. In 1996 he was appointed junior group leader in the cell biology program at EMBL. Before he moved to the ETH, he was nine years with Beiersdorf AG, as head of the analytical microscopy department, in the research division in Hamburg.

Roger worked mainly on colloidal systems and adhesives, human skin morphomics, and nano-analytic technology research in-vivo and ex-vivo at the level of light to electron microscopy, spectroscopy and SPM with a focus on developing cryo-technology for microscopy.

His major interest at ETH Zurich is now focused in the field of correlative microscopy, automatic sample preparation and imaging techniques for particle imaging technology.

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## Dr. Timo Zimmermann



Timo Zimmermann studied biology at the University of Munich (diploma thesis on EM serial section reconstruction). After obtaining a PhD with work on confocal 4D imaging in cell motility and development, he moved to the Advanced Light Microscopy Facility at the European Molecular Biology Laboratory in Heidelberg, Germany. Since 2007 he is the head of the Advanced Light Microscopy Unit at the Center for Genomic Regulation in Barcelona, Spain.

His work is focused on imaging applications for cell biology and developmental biology and on the development of modern light microscopy methods.

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