



Keynote Presenters Profiles



Prof. Dr. **Bert Müller** has been Thomas Straumann-Chair for Materials Science in Medicine at the University of Basel, Switzerland, since September 2006. In 1994, he obtained a Ph.D. in experimental physics from the University of Hannover, Germany. For his achievements, he was granted with the Morton M. Traum Award of the American Vacuum Society. Since April 2001, he has been teaching as faculty member of the Physics Department at ETH Zurich. The Biomaterials Science Center, founded by Müller in March 2007, hosts researchers from many fields dealing with nanotechnology-based artificial muscles for incontinence treatment, compliant electrodes for brain stimulation, mechano-responsive nano-containers for targeted drug delivery for the treatment of cardiovascular diseases, high-resolution X-ray imaging to visualize the human body down to the molecular level in health and disease, and further applications of nanosciences in medicine and dentistry. The mission of the research team can be summarized by employing physical principles for human health. Professor Müller is author of more than 300 publications in a wide variety of journals, many of them have been the result of doctoral thesis he supervised in the fields of medicine, dentistry, physics, nanosciences, and biomedical engineering. In 2014, he was elected as Fellow of SPIE and in 2015 as an active member of the European Academy of Sciences and Arts.

The E-MRS Activity: Professor Dr. Bert Mueller is The E-MRS Member 2017, 2018 with a special invited Presentation for his oral and with Grad Student (Young Investigator FORUM 2017) and Invited by The Symp E SciCom BOARD for A special Keynote Lecture (2018) for The E-MRS Symposia “Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials VII and VIII”.

Keynote FORUM Keynote Lecture:

Nanoscience & Nanotechnology for Human Health

Prof. Dr. Bert Müller

Thomas Straumann Chair and Director of the Biomaterials Science Center (BMC) at the University of Basel, Gewerbestrasse 14, 4123 Allschwil, Switzerland, bert.mueller@unibas.ch, www.bmc.unibas.ch



Prof.. **Peilin Chen** received his Bachelor degree in Chemistry from National Taiwan University in 1990 and obtained his Ph.D. degree in Chemistry from University of California, Irvine in 1998 under the supervision of Prof. Peter Rentzepis. He worked as a postdoctoral fellow in Prof. Somorjai's group in the Chemistry department of University of California, Berkeley between 1999 and 2001. Prof. Chen joined Research Center for Applied Sciences, Academia Sinica, Taiwan as an Assistant Research Fellow in 2001. He was promoted to Associate Research Fellow and Research Fellow in 2005 and 2010, respectively. He served as the deputy director of the Research Center for Applied Sciences between 2010 and 2012 and the Chief Executive Officer of the thematic center of Optoelectronic in 2012. Prof. Chen was an adjunct Professor in the Chemistry Department of the National Taiwan University between 2007 and 2011, and visiting Professor in RIKEN and Kyoto University. Prof. Chen received several prestigious awards in Taiwan including Research Award for Junior Research Investigators in Academia Sinica, Ta-You Wu Memorial Award of National Research Council and Career Development Award in Academia Sinica. Prof. Chen has authored or co-authored more than 120 papers in refereed journals and conference proceedings, he has delivered more than 50 invited talks in international meetings and conferences. He organized more than 10 international symposia. Prof. Chen has initiated many national and international collaborative researches on development and applications of nanomedicine. Prof. Chen has been awarded several major funding for both domestic and international projects. He was sitting on several domestic review panels and served as an advisor for several international programs. Prof. Chen's research topics cover a broad spectrum of nanotechnology with a focus on the application in nanomedicine. Currently, he is working on the synthesis of nanoparticles for drug delivery and bio - imaging, the development of novel imaging tools including intravital and super-resolution imaging, the fabrication of bioelectronics device for cell sensing and isolation.

The E-MRS Activity: Professor Dr. Peilin Chen is The E-MRS Member 2014 -2018 with special invited presentations for The E-MRS Symposia "Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials IV-VIII" and this Symposia Sci Comm BOARD Invited Organizer/Chair for A Special SESSIONS with invited presenters from Taiwan, Japan and Switzerland (2017 Strasbourg and 2018 Warsaw)

Keynote FORUM Special Keynote Lecture.

Detection of Circulating Tumor Cells and Circulating Cancer Stem Cell like Cells.

Peilin Chen,

Research Center for Applied Sciences, Academia Sinica, Taiwan, 128, Sect. 2 Academia Rd., Taipei 115
peilin@gate.sinica.edu.tw <http://www.rcas.sinica.edu.tw/faculty/peilin.html>



Prof. Dr. **Arzum Erdem** received Bachelor in Pharmacy from Ege University, Izmir, Turkey in 1993. She received the master degree in 1996 and PhD degree in 2000 in Department of Analytical Chemistry at the same university in Izmir. She worked as an Assistant Professor from 2000 to 2003 and as an Associated Professor from 2003 to 2009 at the Analytical Chemistry Department of the Faculty of Pharmacy in Ege University. She has been working at the same department as a Full Professor since 2009. Prof. Arzum Erdem was awarded by the Turkish Academy of Sciences (TÜBA) as the one of highly skilled young twenty Turkish scientists elected in 2001, and she also received **Junior Science Award 2006 and Science Award 2015** given by **The Scientific and Technological Research Council of Turkey (TUBITAK)**. Prof. **Arzum Erdem** was elected as the Associate member of TÜBA in 2007, and elected as the Principal member of TÜBA in 2016. She was elected as a **Special Committee member of Association of Academies and Societies of Sciences in Asia (AASSA)-Women In Science and Engineering (WISE)** in August, 2017. She was elected as a **fellow of Royal Society of Chemistry (FRSC)**, in December, 2017.

Prof. Arzum Erdem has authored or co-authored more than 140 papers in refereed journals and conference proceedings, she has given more than 20 invited talks in international meetings and conferences, is the co-author of 12 book chapters and review papers. She has received more than 4500 (without self-citations: 3800) citations according to the records on Web of Science (WoS) obtained in March 2018 with h-index:36.

Prof. Arzum Erdem has initiated many national and international collaborative research on development and applications of electrochemical (bio)sensors based on drug, enzyme and nucleic acids. Her recent research is centred on the development of novel transducers and chemical and biological recognition systems by using different nanomaterials (e.g, graphenes, magnetic nanoparticles, carbon nanotubes, gold and silver nanoparticles, dendrimers, nanowires, nanorods etc.) designed for electrochemical sensing of nucleic acid (DNA, RNA) hybridization, and also the specific interactions between drug and DNA, or protein and DNA, aptamer-protein and also the development of integrated analytical systems for environmental, industry and biomedical monitoring.

The E-MRS Activity: Professor Dr. Arzum Erdem is The E-MRS Member 2009-2018 with a special invited presentations and her Grad Students invited presentations (The E-MRS Hq Grad Student Award 2013) for the Symposia “Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials I 2009 –VIII 2018”. Professor Dr. Arzum Erdem has working , as this Symposia Principal Organizer, Invited by this Symposia SciComm BOARD on 2013 and 2018.

Keynote FORUM Keynote Presentation.

Nanomaterials Integrated Electrochemical Biosensors for Detection of Nucleic Acids.

Arzum ERDEM

Ege University, Faculty of Pharmacy, Analytical Chemistry Department, Bornova, 35100 Izmir, TURKEY
arzum.erdem@ege.edu.tr ; arzume@hotmail.com Website: www.arzumerdem.com/indexen.html



Prof. Dr. **Insung S. Choi** is Professor of Chemistry and of Bio and Brain Engineering at KAIST, Korea, and the Director of the Center for Cell-Encapsulation Research (Creative Research Initiative; 2012-). He obtained his BS and MS degrees in Chemistry at Seoul National University in 1991 and 1993, and did his PhD degree in Chemistry at Harvard University in 2000 under the supervision of George M. Whitesides. After postdoctoral work with Robert Langer at the Department of Chemical Engineering of MIT, he joined the faculty at KAIST in 2002. He was awarded KCS-Wily Young Chemist Award (2003), Thieme Journal Award (2003), Presidential Young Scientist Award (2004; KAST), and JANG SEHEE Research Achievement Award (2013; KCS). His research interests include biomimetic chemistry, cell-material interfaces, and biosurface organic chemistry. He has published over 200 peer-reviewed papers (>5300 citations, h-index = 40). He is the editorial board member of Chemistry-An Asian Journal (Wiley-VCH), ChemNanoMat (Wiley-VCH), and Scientific Reports (NPG).

The E-MRS Activity: Professor Dr. Insung S. Choi is The E-MRS Member 2016-2018 with Invited Presentations for his a special Presentations/Keynote Lecture and with Grad Students reports for The E-MRS Symposia “Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials VII, VII, VIII”. He has working, as this Symposia SciComm BOARD Member, Organizer/Chair for a special sessions of the symposia.

Keynote FORUM Keynote lecture

Micrometric Iron Men: Single-Cell Nanoencapsulation

Insung S. CHOI

Center for Cell-Encapsulation Research, Department of Chemistry, KAIST, Daejeon 34141, KOREA,
ischoi@kaist.ac.kr, www.cisgroup.kaist.ac.kr



Prof. **Bo Zhu** received his Ph.D. from Tokyo Institute of Technology in 2004. He continued his research as a postdoctoral researcher from 2004 to 2006, and as a JSPS Postdoctoral Fellow from 2006 to 2008 at Tokyo Institute of Technology. He moved to RIKEN since 2008, and received a SPDR Fellowship to start his independent research from 2010, and became a research scientist in 2013. Since late 2013, he joined Donghua University as a full professor. From 2017, he moved to Shanghai University to found Organic Bioelectronic Materials Lab. He works on bioinspired conducting polymers, and their applications in bioelectronic devices. He has co-authored 1 book, more than 70 papers and obtained more than 10 patents.

The E-MRS Activity: Professor Dr. Bo Zhu is The E-MRS Member 2013-2018 with a special invited Presentations/Lectures and with a special invited presentations his Grad Students/Postdoctoral researchers for The Symposia “Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials III-VIII”.

Professor Dr. Bo Zhu has working, as The Symposia Sci Comm Member, Organizer/Chair for a special SESSION with invited Professors/Dr Lecturers and Presenters from China (2017, Strasbourg).

Keynote FORUM Keynote Presentation

Bioinspired and Biocompatible Conducting Polymers Toward Implantable Bioelectronics

Bo ZHU

Shanghai Distinguished Experts, College of Materials Science and Engineering, Shanghai University, 99 Shangda Road, BaoShan, Shanghai, 200444, China, e-mail bozhu@shu.edu.cn



Prof. **Shigeori Takenaka** is Professor of Applied Chemistry and Director of Research Center for Bio-microsensing Technology (RCBT) at Kyushu Institute of Technology. His main fields of interests is study of simple and rapid electrochemical biosensing technique with high sensitivity aiming to development of practical use diagnostic chip. He has co-authored 21 books, more than 270 journal papers. He has received 2015 SPSJ Mitsubishi Chemical Award from The Society of Polymer Science, Japan.

The E-MRS Activity: Professor Shigeori Takenaka is The E-MRS Member 2015-2018 with invited and Keynote Lecture presentations for The E-MRS Symposia “Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials V-VIII” a special Sessions Invited Presenters from Japan and Invited Lecturers from Taiwan, Japan and Switzerland.

Keynote FORUM Special Keynote Lecture

Cyclic naphthalene diimide to visualize tetraplex structure in a living cell

Shigeori Takenaka

Professor of Department of Applied Chemistry, Director of Research Center for Bio-microsensing Technology, Kyushu Institute of Technology, Kitakyushu, 804-8550, Japan, Website:

<http://www.kyutech.ac.jp/english/> e-mail shige@che.kyutech.ac.jp



Prof. **Yaopeng Zhang** is Deputy Director of State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, and Vice Dean of College of Materials Science and Engineering, Donghua University, China. He has been Shanghai Down Scholar, Shanghai Rising-Star Scholar, Shanghai Pujiang Scholar, and Shanghai Chenguang Scholar. He works on biomimetic spinning of silkworm silk and spider silk, silk fibroin based biomaterials, microfluidics, and polymer structure characterization. He received his BS degree in Polymer Material and Engineering from Hubei University of Technology, China, in 1998, and his PhD degree in Material Science from Donghua University, China, in 2002. He had been a postdoctoral fellow of Kawamura Institute of Chemical Research, Japan from 2004 to 2007. In 2010 and 2016, he was appointed a Visiting Professor in Akita University and in Stony Brook University, respectively. In 2012, he became a professor in Material Science in Donghua University. He has co-authored 2 books, more than 60 SCI journal papers and obtained 25 patents. His work on super-strong functional silk has been reported and highlighted by many international media, including C& EN.

The E-MRS Activity: Professor Yaopeng Zhang is The E-MRS Member 2015-2018 with a special invited Presentations for Lectures and for Reports of his Grad Students/Postdoctoral Researchers at the E-MRS Symposia “Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials V-VIII”. Professor Yaopeng Zhang has working as this Symposia Sci Comm Member.

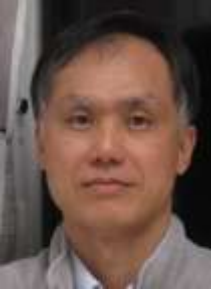
Keynote FORUM Invited presentation

Ultra-Thin Silk Nanoribbons from Silkworm Silk

Yaopeng Zhang

Deputy Director, State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, Vice Dean, Professor, College of Materials Science and Engineering, Donghua University, Shanghai 201620, China, e-mail zyp@dhu.edu.cn

<http://cmse.dhu.edu.cn/mainAction.do?topNav=9&sideNav=42&teacherID=5b64ce82249014c5012494f3c9b10079>



Prof. **Ji-Yen Cheng** is a Research Fellow and the group leader of the Thematic Center for Mechanics and Engineering in Research Center for Applied Sciences, Academia Sinica Taiwan. Dr. Cheng received his Ph.D. in National Taiwan University in 1998. He then proceeded post-doctor research in Institute of Biomedical Sciences in Academia Sinica Taiwan during until 2001. His research interest is in the biological applications of microfluidics. His innovative works in rapid prototyping and DNA amplification chip have been highlighted in Lab-on-chip in 2005 Sep and 2005 Oct. In recent years his research topics includes: nanostructure SPR sensing, bacterial biosensing, cellular electrotaxis, and laser micromachining.

Keynote FORUM Special Keynote Lecture

Multiplex urinary microRNA detection using gold nanoslit array surface plasmon resonance

Ji-Yen Cheng

Research Center for Applied Sciences, Academia Sinica Taiwan, Taipei 11529 Taiwan, Website:
<http://www.rcas.sinica.edu.tw/faculty/jycheng.html> e-mail: jycheng@gae.sinica.edu.tw



Dr. **Che-Ming Jack Hu** is an Assistant Research Fellow at the Institute of Biomedical Sciences, Academia Sinica. His research focuses primarily on the development of multifunctional nanoparticles and biomimetic materials for therapeutic applications that encompass drug delivery and vaccine development. Dr. Hu's work on nanomaterials research has led to 48 peer-reviewed publications with several landmark papers in *Nature* and *Nature Nanotechnology*. He pioneered the development of cell membrane cloaked nanoparticles, the biomimetic properties of which have inspired many unique biomedical applications ranging from vasculature targeting, bacteria targeting, virus detection, and toxin neutralization. His inventions led to 15 patent/patent applications, several of which have been licensed for commercial development. In recognition of his research accomplishments, Dr. Hu has received the Siebel Scholarship, Academia Sinica Career Development Award, Excellence in Creativity Award for Young Scholar, and the Li Foundation Heritage Prize. Dr. Hu's current interest lies in virus-based particles, which possess intricate functions he believes may inspire novel nanomedicine designs. His laboratory is developing virus-like nanoparticles as vaccine candidates to tackle pressing infectious threats.

Keynote FORUM Special Keynote Lecture

Hollow Polymeric Nanoparticles as a virus-mimicking platform for vaccine development against Middle East respiratory syndrome coronavirus

Che-Ming Jack Hu

Institute of Biomedical Sciences, Academia Sinica, Taiwan

Website: www.jackhu.net e-mail chu@ibms.sinica.edu



Dr. **Hideaki Yamamoto** studied electrical engineering at Waseda University, where he received his PhD in 2009 (Supervisor: Prof. Iwao Ohdomari). He then conducted postdoctoral research as a JSPS Research Fellow at Waseda University and at Tokyo University of Agriculture and Technology, before joining Tohoku University in 2014. He is currently an Assistant Professor at Advanced Institute for Materials Research (AIMR) working with Prof. Ayumi Hirano-Iwata. He is interested in how a complex network of excitable cells realize robust computation in the brain. To this end, he integrates microfabrication technology and cell culture technology to investigate the structure-function relationships in living neuronal networks. He is currently a member of the Japan Society of Applied Physics, the Japan Society of Vacuum and Surface Science, and the Japan Nanomedicine Society.

Keynote FORUM Special Keynote Lecture

Bottom-up engineering of neuronal network function using microfabricated surfaces

Hideaki Yamamoto

Advanced Institute for Materials Research, Tohoku University, Sendai, Japan, Website: www.tohoku.ac.jp
e-mail: hideaki.yamamoto.e3@tohoku.ac.jp



Prof. **Bogdan Walkowiak** – is an expert in the field of biological evaluation of nanomaterials and other products of innovative technologies. He graduated physics at the University of Lodz, Poland and began his scientific carrier in the Department of Biophysics at the Medical University of Lodz. In 1985 he received his PhD from the Medical University of Lodz. In years 1989-90 he was a Post Doc at the State University of New York, Health Science Center at Brooklyn, New York, USA. During the next years he received his professional training from Perkin Elmer, Pharmacia Biotech, Amersham Biosciences, BiaCore AB, Alpha-MOS and GE Healthcare. In 1994 year he obtained his habilitation degree in medical biology, and since 2003 he is a full professor in medical biology. At present he is the head of the Department of Biophysics at the Technical University of Lodz, Poland, and he is also the scientific leader of laboratories of Bionanopark Ltd, Lodz, Poland, and he is a member of Nanomaterials Expert Group in European Chemicals Agency in Helsinki, Finland. He uses tools of cellular and molecular biology including cell viability, cyto- and genotoxicity, transcriptomics and proteomics methods, as well as SEM, TEM, AFM and fluorescence microscopy and EDS, Raman and FTIR spectroscopy methods. His research achievements consists of over 90 original research papers cited over 890 times with h-index 17.

General SESSION Keynote Lecture

Biological evaluation of products of innovative technologies including nanomaterials

Bogdan Walkowiak

Lodz University of Technology, Laboratories of Bionanopark Ltd, Lodz,

bogdan.walkowiak@p.lodz.pl; b.walkowiak@bionanopark.pl



Prof. **Jarno Salonen** received his M.Sc. and Ph.D degrees in Physics from University of Turku, Finland in 1995 and 1999. In 2002, he was appointed Academy Research Fellow. He has been head of the Industrial Physics Laboratory since 2008 and Full Professor of Pharmaceutical Physics since 2017. He has studied porous silicon since 1994, and drug delivery applications of it since 2004. He is one of the pioneers and worldwide leaders in the field of porous silicon research with many top cited papers and over 230 scientific publications including five book chapters and seven review articles with h -index of 47(Scopus).

Keynote FORUM Keynote Presentation:

Regenerative electroless etching of silicon for biosensing and biomedical applications

Jarno Salonen

Industrial Physics Laboratory, Department of Physics and Astronomy, University of Turku, FI-20014 Turku, Finland, email: jarno.salonen@utu.fi

web page: <http://www.utu.fi/fi/yksikot/sci/yksikot/fysiikka/henkilokunta/salonen/Sivut/home.aspx>



PhD, Assistant Professor, **Maciej Cieplak** received his Doctoral degree of Chemistry in 2013, at the Institute of Organic Chemistry, Polish Academy of Science (PAS). In 2013 -2014, through the MPD Programme founded by the the Foundation for Polish Science (FNP), he has been a PostDoc fellow in the Institute of Physical Chemistry PAS, in the Molecular Films Research Group headed by prof. Włodzimierz Kutner. Since 2014, he continues his scientific career as an Assistant Professor of the Institute of Physical Chemistry PAS. Dr. Cieplak co-authored 14 papers, all published on international and prestigious peer reviewed journals, 2 book chapters and seven patent applications.

General SESSION Keynote Presentation

Self-reporting Molecularly Imprinted Polymer for Label-free Selective Electrochemical Sensing

Maciej Cieplak

Institute of Physical Chemistry, Polish Academy of Sciences (IPC PAS), Kasprzaka 44/52, 01-224 Warsaw, Poland, email: mcieplak@ichf.edu.pl



Dr. **Silvio Osella** received his doctorate in chemistry from the University of Mons in 2014. After receiving his PhD., he moved to KTH (Stockholm) for a one-year fellowship in 2016. In 2017, Dr. Osella received a Marie-Curie POLONEZ grant which allowed him to join the Centre of New Technologies in Warsaw as assistant professor. Dr. Osella research focuses on the computational study of the opto-electronical properties of graphene and its derivatives (i.e. Nanoribbons, Nanoclusters) and of photoswitchable and fluorophore molecules when (but not limited to) inserted into biological environments. Two main research lines are followed. The first concern the study of fluorophores embedded in lipid membranes and proteins, while the second on the formation and study of hybrid organic-biological materials that can be of interest for bio-organic electronics. He is author of over 30 peer-reviewed articles.

Dr. **Silvio Osella**, Assistant Professor, Chemical and Biological Systems Simulation Lab, Centre of New Technologies, University of Warsaw, Banacha 2C, 02-097 Warsaw, Poland. s.osella@cent.uw.edu.pl; <http://chembio.cent.uw.edu.pl/index.html>

General SESSION Keynote Presentation

Rational Design of Bio-Organic Systems for Biomimetic Applications

Silvio Osella, B. Trzaskowski

Chemical and Biological Systems Simulation Lab, Centre of New Technologies, University of Warsaw, Banacha 2C, 02-097 Warsaw, Poland. s.osella@cent.uw.edu.pl



Prof. **Ioan Andricioaei**, Professor of Chemistry and Professor of Physics Department of Chemistry, University of California, Irvine California 92697, USA, andricio@uci.edu
<https://www.chem.uci.edu/people/ioan-andricioaei>

Research Interests: Chemical Biology, Physical Chemistry and Chemical Physics, Theoretical and Computational.

Our research explores theoretical topics at the interface between molecular biophysics and physical chemistry. It hinges on a two-fold central theme: (1) developing novel theoretical techniques and (2) applying computer and modeling methods to describe, in terms of dynamics and thermodynamics, biologically important molecular processes, with the aim to explain or predict experimental findings.

Computer Simulations of DNA-Binding Machines. Protein-DNA and nanoparticle-DNA interactions are essential in such crucial cellular functions as replication, repair, transcription or recombination, and in nanotechnology. Many enzymes at and ahead of the replication fork affect large DNA fragments. For instance, topoisomerases undo DNA knotting. Others, like helicases and polymerases, are biomolecular motors: they use the energy of binding and/or hydrolysis of nucleotides to do mechanical work on the DNA fragments to which they bind. Another example is the machinery that compacts DNA inside the capsid of viruses. We have an avid interest in the theoretical description of these fundamental genetic processes through massively parallel computer simulations.

Young Scientist FORUM Keynote Lecture

Dynamics and thermodynamics of local and global topologies of DNA

Ioan Andricioaei

Prof. of Chemistry and Prof. of Physics University of California, Irvine, California 92697, USA,
andricio@uci.edu



Prof. **Peter Scharff**, Univ.-Prof. Dr. rer. nat. habil., Dr. h. c. mult. Prof. h. c. mult. Rector of Technical University of Ilmenau, Institute of Chemistry and Biotechnology, Weimarer Straße 25 (Curiebau), D-98693 Ilmenau, Germany. Phone/Fax: +49 36 77 693 603 (04) peter.scharff@tu-ilmenau.de <https://www.tu-ilmenau.de/>

Peter Scharff graduated at TU Clausthal as a chemist. He holds a PhD (1987) and his habilitation followed in 1991 in the field of inorganic chemistry. He worked as a visiting professor at University of Torun, Poland and was appointed associate professor. In 1999 he went as a C4-Professor to TU Ilmenau in the subject of physics. In the time from 2000 till 2004 he was head of the department of chemistry in TU Ilmenau and was selected as rector of this university in 2004. In this position he is till now.

Professor Peter Scharff selected for high functions in scientific committees and associations. For about ten years he is chairman of the local chapter Erfurt Ilmenau of the German Chemical Society. Further honorable calls followed with the election as president of the European Carbon Association as well as the senator of the academy of charitable sciences to Erfurt. For his work in the field of graphite and fullerene chemistry, Peter Scharff was honored in 1998 by the Sigri Great Lakes Carbon AG with the "SGL-CARBON-Award". <https://www.sglgroup.com/>

<https://idw-online.de/de/news?print=1&id=5716>

Research activity: Professor Scharff is the author and co-author of more than 250 scientific publications (citations – 2500, h-index 26). He is presented 200 reports at International Conferences and Congresses, specially at The E-MRS Spring Meetings at Focused Sessions on Nanocarbons and Carbon based Biomaterials (31).

The E-MRS activity: Professor Peter Scharff is The E-MRS Member during 2003-2004 and 2009 -2017 has working as Principal Organizer and Organizer/Chair for Special Sessions on Nanocarbon materials at The E-MRS Symposia 'Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials: I 2009 ÷ 2017 VII.

Now, for this Symposium VIII 2018, Professor Scharff has working Principal Organizer and Keynote Lecturer for Keynote FORUM 17 Sept "Frontiers Nano-materials/systems/

Keynote FORUM Keynote Lecture

**Carbon materials chemistry and processing for multi-functionality:
from graphite to fullerenes-tubes-graphene**

Prof. **Peter Scharff**, Univ.-Prof. Dr. rer. nat. habil., Dr. h. c. mult. Prof. h. c. mult.

TU Ilmenau, Institute of Chemistry and Biotechnology, Weimarer Straße 25 (Curiebau), D-98693 Ilmenau, Germany. peter.scharff@tu-ilmenau.de



Dr. **Quirina Ferreira** received her PhD in Nanoengineering from Universidade Nova de Lisboa, Portugal in 2008 and then she started a research position at Instituto de Telecomunicações of Lisbon. She does research in self-assembled monolayers with applications on biomedical devices and molecular electronics using scanning tunneling microscopy (STM) at liquid interface to prepare and manipulate materials at molecular scale. Recent activities are related with the preparation of supramolecular structures (molecular wires and molecular switches) by a bottom-up approach using the STM to control each step at molecular level.

Another research line is the development of functional monolayers with drug delivery function for applications in ocular diseases treatment. She also collaborates with computer science researchers to develop software based in machine learning algorithms to improve STM deliverables.

She has more than 10 years of experience working with nanomaterials and at moment she coordinates research projects in this area.

General Session Keynote Lecture

Supramolecular structures built by scanning tunnelling microscopy

Quirina Ferreira

Instituto de Telecomunicações, Avenida Rovisco Pais, 1049-001 Lisboa, Portugal

e-mail: quirina.ferreira@lx.it.pt Website: <https://www.it.pt/Members/Index/2608>



Prof. Dr. **Richard B. Jackman**, London Centre for Nanotechnology, Department of Electronic and Electrical Engineering University College, London, 17-19 Gordon Street, London, WC1H 0AH, UK Email: r.jackman@ucl.ac.uk https://www.london-nano.com/our-people/%5Bfield_people_section-raw%5D/richard-jackman

Research Interest: Diamond Nanotechnology Diamond is a truly remarkable material. It has very high carrier mobilities, saturated carrier velocities and electric field breakdown strength. It has the highest thermal conductivity of any material. It has a very low dielectric constant. It can display ‘negative electron affinity’. It can be considered to be a wide band gap semiconductor (5.5eV) that can be doped p-type or n-type. It is chemically and physically robust, and radiation ‘hard’ – electronics formed from diamond should not only perform at the highest levels, but should also be capable of operation in extreme environments. It has unusual optical properties. In short, using diamond as a gemstone is a waste of its true potential! It can also be considered to be biocompatible, in that it is simply carbon, and is also not prone to unwanted cell adhesion or particulate generation when inside a living body. The Diamond Electronics Group within the LCN, which I head, is actively engaged in the growth and doping of diamond using chemical vapour deposition methods, and its use within a wide range of nano-electronic devices.

The E-MRS Activity: Professor Richard B. Jackman is The E-MRS Member during 2016 -2018 with special Invited Presentations and with his Grad Students, Post Doc Investigators for Special Sessions on Nanocarbons at The SYMPOSIA “Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials” VI2016, VII2017 and VIII 2018 and Organizer of The E-MRS Symposium O “Diamond for electronics III” The E-MRS Fall Meeting 2018.

Keynote FORUM Keynote Lecture

Nanodiamonds as a new material for biotechnology: a platform for skeletal tissue regeneration

Richard B. Jackman

London Centre for Nanotechnology, University College London (UCL), 17-19 Gordon Street, London, WC1H 0AH, UK, r.jackman@ucl.ac.uk



Dr. **Martin Kaltenbrunner**, Associate Professor, priv. Doz. at the Soft Matter Physics Department, Deputy department Head of the “Soft Electronics Laboratory” within the Linz Institute of Technology, Johannes Kepler University Linz, martin.kaltenbrunner@jku.at,

Martin Kaltenbrunner received his Master's and Ph.D. degrees in physics from the Johannes Kepler University Linz, Linz, Austria at the Soft Matter Physics Department in 2008 and 2012, respectively. He is also currently with the Someya-Sekitani Lab for Organic Electronics at The University of Tokyo, Tokyo, Japan. His current research interests include dielectric elastomers, organic photovoltaics, lightning and thin film transistors, and flexible and stretchable electronics. He received the Wilhelm Macke Award for his Master thesis.

The Soft Matter Physics Department was founded in 2002, head of the department is Prof. Dr. Siegfried Bauer. Currently three university funded senior scientists and twelve externally funded researchers are working in the department. In January 2012 the European Research Council Advanced Investigators Grant "Soft Map: Stretching Soft matter performance: From conformable electronics and soft machines to renewable energy" started. The research in the department focuses on the basic science of soft active materials, with a strong application oriented background in electronics, transducers, information technology and energy harvesting. Dissemination of results are publications in peer reviewed journals and patents, followed by industry transfer, for example to the spin-off company isi <https://www.jku.at/en/institute-of-experimental-physics/soft-matter-physics/about-us/team/martin-kaltenbrunner/>

Keynote FORUM Keynote Lecture

Soft Electronics and Machines.

Martin Kaltenbrunner

Soft Electronics Laboratory, LIT, Johannes Kepler University Linz, Altenbergerstr. 69, A-4040 Linz, Austria; martin.kaltenbrunner@jku.at



Dr. **Matteo Calvaresi**, Assistant Professor Dipartimento di Chimica “Ciamician” Alma Mater Studiorum – Università di Bologna, Italy, email: matteo.calvaresi3@unibo.it website: <https://site.unibo.it/nanobio-interface-lab/en/>

Research interests include Nanotechnology.

- Protein/carbon nanoparticles hybrids for application in nanotechnology and nanomedicine
- Medical applications of drug/calcite hybrid crystals: from targeted delivery carriers to active scaffolds
- Synthesis of hybrid carbon nanoparticles/calcium carbonate nanocomposite. Morphological and mechanical characterization.
- Marine biomaterials as innovative scaffolds for regenerative medicine

General Session Keynote Lecture.

Bio –supramolecules: Design, Preparation and Characterization of Protein - Carbon Nanoparticle Hybrids

Matteo Calvaresi

Alma Mater Studiorum - Università di Bologna, Dipartimento di Chimica "Giacomo Ciamician" via F. Selmi, 2 - 40126 Bologna (Italy), matteo.calvaresi3@unibo.it



Prof. Dr. **Rahul Raveendran Nair**, Professor of the National Graphene Institute, Catalysis and Porous Materials School of Chemical Engineering & Analytical Science National Graphene Institute Faculty of Science and Engineering, +44 (0) 161 306 6574, rahul@manchester.ac.uk , [ORCID: 0000-0002-7972-8250](https://orcid.org/0000-0002-7972-8250)
<https://rrnair.weebly.com/>

Rahul Raveendran Nair is Rahul R. Nair is a Professor of Materials Physics at the National Graphene Institute (NGI) and School of Chemical Engineering and Analytical Science at the University of Manchester and holds a prestigious Royal Society Fellowship and ERC grant. The main scope of his research is the novel synthesis and construction of application-oriented devices based on two-dimensional (2D) crystals to explore new physical phenomena. His group is actively engaged in the design and development of 2D materials based membranes and nanofluidic devices for probing fundamental molecular transport at the nanoscale and their potential applications in our daily life. He has published over 50 highly cited peer- refereed research articles, including five *Science*, three *Nature*, and more than a dozen *Nature* series publications during the last ten years. His awards include a Leverhulme Early Career Fellowship from the Leverhulme Trust, IUPAP Young Scientist Award (2014) from the International Union of Pure and Applied Physics, the Moseley Medal and Prize (2015) from the Institute of Physics, Lee Hsun Lecture Award on Materials Science (2018), Institute of Metal Research, Chinese Academy of Sciences and the creativity prize (2018) from the Prince Sultan Bin Abdulaziz International Prize for Water (PSIPW). He has also selected as a Highly Cited Researcher in 2016 and 2017 by Thomson Reuters.

[https://www.research.manchester.ac.uk/portal/en/researchers/rahul-raveendran-nair\(fc5565ec-dca9-45a1-9a64-21cbebf22473\)/publications.html](https://www.research.manchester.ac.uk/portal/en/researchers/rahul-raveendran-nair(fc5565ec-dca9-45a1-9a64-21cbebf22473)/publications.html)

Keynote FORUM Keynote Lecture

Tunable graphene-based membranes

Rahul R. Nair

National Graphene Institute and School of Chemical Engineering and Analytical Science, University of Manchester, Manchester, UK rahul@manchester.ac.uk



Dr. **Christos Tapeinos**, Experienced Researcher Smart Bio-Interfaces Group - CMBR - IIT - Polo Sant'Anna Valdera Viale Rinaldo Piaggio, 34 - 56025 - Pontedera (PI), Italy, <https://www.msca-bionics.eu>
christos.tapeinos@iit.it

Dr. **Christos Tapeinos** was also a visiting Researcher at the University of Chicago from October 2016 to January 2017 where he collaborated with Prof. J. Hubbell's group, studying the differentiation of human monocytes under oxidative stress and under treatment with collagen nanospheres.

His **research interest** is focused on delivery systems that respond to various stimuli, including pH, temperature, alternating magnetic field and reactive oxygen species (ROS). In addition, Dr. Tapeinos has fabricated a variety of biomaterial-based structures, including nanospheres, microspheres and fibers using natural (collagen & hyaluronic acid) and/or synthetic polymers (PMMA, PAA, PHPMA, PLGA) for the treatment of various diseases, like Intervertebral Disc Degeneration, Myocardial Infarction and Cancer (breast, prostate and multiple myeloma). Moreover, one of his expertises is the synthesis and characterization of inorganic nanoparticles including MnO₂, CeO₂, CuO, ZnO etc. Dr. Tapeinos studies also the biological interactions of the synthesized materials in live cells and tissues. One of his last research projects was related on the fabrication of Solid Lipid Nanoparticles (SLN) and Nanostructured Lipid Carriers (NLC) for the treatment of Glioblastoma Multiforme. *Currently,*

Dr. Tapeinos works as an Experienced Researcher funded by an individual Marie-Curie Fellowship, at the Smart Bio-Interfaces group of Gianni Ciofani, where he focuses his research on the fabrication of biomimetic and neuroprotective nanocapsules for the treatment of post-ischemic stroke effects.

General SESSION Invited Presentations

Design of a biomimetic and neuroprotective nanocapsule for the treatment of post-ischemic stroke effects

Christos Tapeinos, Matteo Battaglini, Attilio Marino, Ivana Cavaliere, Gianni Ciofani

Christos Tapeinos and Attilio Marino: *Smart Bio-Interfaces, Istituto Italiano di Tecnologia, Pontedera (PI), Italy*
Matteo Battaglini: *Smart Bio-Interfaces, Istituto Italiano di Tecnologia, Pontedera (PI), Italy / The Biorobotics Institute, Scuola Superiore Sant-Anna, Pontedera (PI),*

Italy Ivana Cavaliere: *Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Torino, Italy*
Gianni Ciofani: *Smart Bio-Interfaces, Istituto Italiano di Tecnologia, Pontedera (PI), Italy / Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Torino, Italy* E-mail: christos.tapeinos@iit.it

Design of a lipid-based magnetic nanovector as a versatile theranostic for the treatment of glioblastoma multiforme.

Christos Tapeinos, Attilio Marino, Matteo Battaglini, Gianni Ciofani

Christos Tapeinos and Attilio Marino: *Smart Bio-Interfaces, Istituto Italiano di Tecnologia, Pontedera (PI), Italy*
Matteo Battaglini: *Smart Bio-Interfaces, Istituto Italiano di Tecnologia, Pontedera (PI), Italy / The Biorobotics Institute, Scuola Superiore Sant-Anna, Pontedera (PI), Italy* Gianni Ciofani: *Smart Bio-Interfaces, Istituto Italiano di Tecnologia, Pontedera (PI), Italy / Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Torino, Italy;* christos.tapeinos@iit.it



Dr. **Angelo Accardo**, Research Fellow at the Laboratory for Analysis and Architecture of Systems, Centre national de la recherche scientifique (LAAS-CNRS), Toulouse, France, aaccardo@laas.fr.

Dr. **Angelo Accardo** received his Master's degree in Electronic Engineering from the University of Rome "La Sapienza", Italy (2008) and his Ph. D. in Biomedical Engineering from the University Magna Græcia of Catanzaro, Italy (2012) in collaboration with the European Synchrotron Radiation Facility (ESRF) in Grenoble, France. After a post-doc at the Italian Institute of Technology (IIT) in Genova, Italy (2012-2015), Dr. Accardo joined the Laboratory for Analysis and Architecture of Systems (LAAS-CNRS), Toulouse, France in 2016 as a research fellow. During his Ph. D. and Post-doctoral activity in Italy, Dr. Accardo acquired a strong knowledge of nano-fabrication processes in clean room facilities by means of which he designed several technological platforms that have been integrated in the context of synchrotron radiation scattering characterization of biological soft matter subjects. The main topic under investigation was the realization of superhydrophobic surfaces made of different materials, such as polymer and silicon, following a biomimetic approach and exploiting the characteristic evaporation mechanisms of droplets drying in quasi contact-free conditions. These substrates have then been used for in situ synchrotron X-ray scattering and spectroscopic analysis of aqueous droplets containing analytes of high biomedical interest such as amyloid peptides involved in neurodegenerative diseases (i.e. Alzheimer's and Parkinson's), cell membrane vesicles (exosomes) and protein crystallization as well as for optoelectronic applications. Since his arrival at LAAS-CNRS, Dr. Accardo is leading a research project aiming at the realization of 3D architectures for the analysis of neuronal cell growth and proliferation. By exploiting laser assisted fabrication techniques, he developed microenvironments made of biocompatible hydrogels allowing the formation of ramified neuronal networks throughout the 3D architecture. In the framework of these investigations, he also conceived a multi-technique 3D imaging protocol combining conventional morphological techniques (based on Scanning Electron Microscopy) and advanced 3D fluorescence imaging (Light Sheet Fluorescence Microscopy and Two-photon confocal imaging) for cell localization and characterization.

General SESSION Invited Presentation

3D free-standing neuronal microenvironments fabricated by two-photon lithography of PEGDA hydrogels

Angelo Accardo

LAAS-CNRS, Université de Toulouse, CNRS, F-31400, Toulouse, France aaccardo@laas.fr



Radosław Mrowczyński Doctor of Chemical Sciences in the field of Organic and Bioorganic Chemistry, Humboldt University, Berlin, 2014. Grant manager: "New methods for the modification of polidopamine for the synthesis of multimodal nanomaterials" awarded by the National Science Center as part of the Sonata 7 competition,

Scientific interests: Stereoselective organic synthesis, Molecular spectroscopy, Heterogeneous catalysis with the use of magnetic nanoparticles as carriers of organocatalysts, Magnetic nanoparticles for medical purposes Chemistry of polymers and "soft materials" rm53520@amu.edu.pl
<http://cnbm.amu.edu.pl/pl/zespo%C5%82/dr-rados%C5%82aw-mr%C3%B3wczy%C5%84ski>

General SESSION Invited Presentation

Polydopamine - on the way to multifunctional nanostructures

Radosław Mrowczyński, Bartosz F. Grzenkowiak, Artur Jndrzak,
Emerson Coy, Kosma Szutkowski, Teofil Jesionowski, Stefan Jurga

The NanoBioMedical Centre, Adam Mickiewicz University in Poznan, Umultowska 85, 61-614 Poznan, Poland; Poland;

Institute of Chemical Technology and Engineering, Poznan University of Technology, Berdychowo 4, PL-61131 Poznan, Poland. .E-mail: rm53520@amu.edu.pl



Dr. **Myung-Han Yoon** is Associate Professor of Materials Science and Engineering at GIST (Gwangju Institute of Science and Technology), Korea. He received his B.S. (1999) in Chemistry and M.S. (2001) in Physical Chemistry at Seoul National University, South Korea. He studied “Organic Semiconductors and Dielectrics Based Thin Films Transistors” for his Ph.D. (2006) in Materials Chemistry with the guidance of Prof. Tobin J Marks at Northwestern University in US. In 2006, he moved to Department of Chemistry and Chemical Biology at Harvard University (Prof. Hongkun Park group) as a postdoctoral fellow and focused on neural electronic/fluidic interfaces. He joined School of Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST) as a junior faculty member in 2010, and became promoted to an associate professor since 2015. He has been also an advisory professor for LG Electronics since 2016. He was awarded KPS Excellent Research Award (2017), Best Faculty Poster Prize of Gordon Research Conference (Biointerface Science, Italy, 2014), and Young Investigator Award, Division of Inorganic Chemistry, American Chemical Society (2007). His research interest is “Developing Solution-Processed Functional Materials for Printable Flexible Electronics and Bio-Electronic Interfaces Based on Conducting Polymers, Sol-Gel Metal Oxides, Fibrillar Hydrogel, etc.” He is an editorial board member of *Macromolecular Research* (Wiley-VCH) and *Scientific Reports* (NPG).

Keynote FORUM Invited Presentation

Solid State-Driven Biomimetic Hydrogel with Controlled Swelling and Predefined Micro/Nanoscale Geometry

Associate Prof. **Dr. Myung-Han YOON**,

*School of Materials Science and Engineering, GIST, Gwangju 61005, KOREA, * email: mhyoon@gist.ac.kr*



Dr. **Oleksandr Ivanyuta**, Docent, Faculty of Radiophysics Electronics and Computer Systems, Taras Shevchenko National University of Kyiv, 64/13, Volodymyrska Str., Kyiv, 01601, Ukraine, iva@univ.net.ua
<http://rex.knu.ua/staff/i/>

Dr. **Oleksandr Ivanyuta** completed his studies in Radiophysics and Electronics at the Taras Shevchenko National University of Kyiv, Ukraine in 1993 and afterwards he performed at this University in the laboratory of solid physics his research work to receive the Master of Science Degree (1995) and the Ph.D – Candidate of Physical and Mathematical sciences (2003).

He worked as academic researcher at this Faculty (2001-2004). From September 2004 to March 2011 Dr. O. Ivanyuta has worked as academic researcher, and performed his Habilitation at this Faculty. After the successful Habilitation defense (March 2011) Dr. O. Ivanyuta became Private Docent at the Taras Shevchenko National University of Kyiv.

Research interest Characterization of nanostructures based on natural biopolymer films and adsorbed biomolecules on carbon nanomaterials (fullerenes, CNT) with particular emphasis their modification by added metal atom/nanoparticles. The applications of the nanostructures are aimed on for analytical detection of biomolecules in solutions. In addition to his skills in applied physic, He has profound experience in spectrometry and electro--physic methods as well as in the field of hybrid organometallic physic investigations. He is author /co-author more than twenty articles at refereed journals and co-author two invited chapters at special books (Publ. World Scientific)..

Research activity: Researcher by microwave and optical, electrochemical methods of polymer, nanocarbons, biomolecular and their hybrids films at TSN University's State scientific Projects (2015-2020)

№ 11БФ052-01 “Fundamentals of creation and methods of research nanoscale structures with controlled parameters for the needs of the power complex”. Chief – Acad. Prof. Dr. M. Nachodkin and

№ 11БФ052-04 “Study of the interaction of electromagnetic and acoustic fields with ordered, nanostructured and biologic systems for the creation of the newest technologies”. Chief – Prof. Dr. V. Grygoruk

http://science.univ.kiev.ua/research/report/ZVIT_SCIENCE_2016.pdf

http://science.univ.kiev.ua/upload/ZVIT_SCIENCE_2017_fin.pdf

The E-MRS activity: Dr. O. Ivanyuta is The E-MRS Member during 2016 -2018 and worked as Invited Organizer/Chair for Special Sessions on Nanocarbon materials at The E-MRS Symposia ‘Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials: VI 2016 and 2017 VII.

Now, for this Symposium VIII 2018, Dr. O. Ivanyuta has working Invited Organizer/Chair Special Poster Session on 17 September 2018, and this symposium Working Team Member.

Keynote FORUM Invited Presentation

Multiwall carbon nanotubes functionalized by the metal organic complex – bio- molecules nanostructures at silicon substrate: bio –, photo- responsively within architectures

N. Tsierkezos, U. Ritter 1, O. Ivanyuta 2

1- Institute of Chemistry and Biotechnology, TU Ilmenau, 98684, Ilmenau, Germany

2-Taras Shevchenko National University of Kyiv, Faculty of Radiophysics Electronics and Computer Systems, Volodymyrska Str. 64/13, 01601 Kyiv, Ukraine E-mail: iva@univ.net.ua



Dr. **Si-Han Wu**, Assistant Professor, Graduate Institute of Nanomedicine and Medical Engineering, College of Biomedical Engineering, Taipei Medical University, Taiwan. <http://orcid.org/0000-0002-2586-7538> ; smilehanwu@tmu.edu.tw

Prof. **Si-Han Wu** received his Master's and Ph. D. in Chemistry from National Taiwan University in 2008 and 2013, respectively. After a post-doc at Research Center for Applied Sciences of Academia Sinica, he joined Taipei Medical University as an assistant professor. His research interests are in the field of hybrid nanomaterials, focusing on the build-up of mesoporous, hollow and multiple-compartmentalized silica nanomedicine. His current research is aimed towards clarifying the relationship between synthetic identity and physiological responses, with a focus on developing clinically translatable silica-based nanomedicine to eradicate hypoxic tumor cells.

Keynote FORUM Special Invited Lecture

**Beyond State-of-the-Art Mesoporous Silica Nanoparticles:
Biological Effects of Protein Corona**

Si-Han Wu

Graduate Institute of Nanomedicine and Medical Engineering, College of Biomedical Engineering, Taipei Medical University, Taipei 11031, Taiwan



Dr. **Jau-Ye Shiu**, Junior Group Leader, Health Sciences and Technology, ETH Zurich.
https://www.researchgate.net/profile/Jau_Ye_Shiu; jau-ye.shiu@hest.ethz.ch

Dr. **Jau-Ye Shiu** received his Ph. D. in Materials Science and Engineering from National Taiwan Chiao-Tung University in 2009. After a post-doc at ETH Zurich for Department of Health Sciences and Technology, he became a junior group leader in the same lab. His research interests are in the field of mechanotransduction, focusing on the development of platform for understanding the cell-substrate interactions. His current research is developed a force sensing platform by using polymeric nanopillar arrays to understand how cell-generated forces are transmitted from transmembrane receptors all the way to the cell nucleus via their specific link to a specific subset of actin fibres that form the actin cap. Nanopillar arrays not only increase the spatial resolution at which traction forces can be mapped, but enable new biological discoveries associated with this mechanotransduction process.

Keynote FORUM Special Invited Lecture

**Role of actin cap-associated perinuclear stress fibers in mechanotransduction
as revealed by nanopillar force measurements**

Jau-Ye Shiu

*Laboratory of Applied Mechanobiology, Department of Health Sciences and Technology, ETH Zurich,
Switzerland*



Professor Karsten Haupt, Head of Institute Compiègne University of Technology, CNRS Institute Enzyme and Cell Engineering Rue Roger Couitolenc, CS 60319 60203 Compiègne cedex Phone +33-3-44234455 karsten.haupt@utc.fr

Professor Karsten Haupt studied Biochemistry at the University of Leipzig, Germany. In 1994 he obtained his PhD in Bioengineering from Compiègne University of Technology, France. He then spent several years as a research fellow at Lund University, Sweden, where he worked on molecular imprinting with Klaus Mosbach. Back in France he was a researcher at INSERM, Paris, before joining the University of Paris 12 as an associate professor. In 2003 he was appointed full professor of Nanobiotechnology at Université de Technologie de Compiègne (UTC), France, where he is now the Head of the CNRS Institute for Enzyme and Cell Engineering. In 2018 Professor Karsten Haupt has become a senior member of the institute Universitaire de France. He is one of the founders of the start up company Polyintell (now Affinisep)

Research interests include affinity technology, chemical and biosensors, molecularly imprinted polymers and synthetic receptors, biomimetic polymers and nanostructured materials for biomedical applications. <http://www.utc.fr/mip/>

The E-MRS Activity: The E-MRS Member 2009-2018 with Oral/Special Invited own and with his Grad Student Presentations for The E-MRS Symposia “Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials I 2009 – VIII 2018” and has working, as Principal Organizer, for this Symposium - The E-MRS Symposium K E-MRS Spring Meeting 2015, Lille, France

Keynote FORUM Invited Presentation

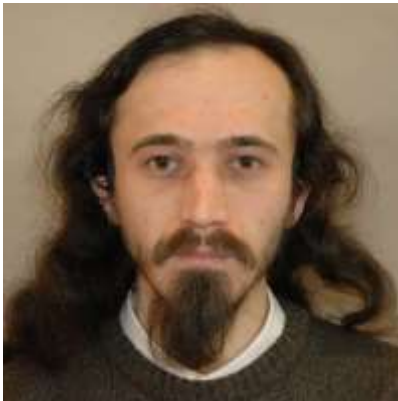
Molecularly Imprinted Polymer Nanocomposites as Synthetic Antibody Mimics for Biomedicine.

Karsten Haupt,* Bernadette Tse Sum Bui, Paulina Medina Rangel
Sorbonne Universités, Université de Technologie de Compiègne UMR CNRS 7025 Enzyme and Cell engineering karsten.haupt@utc.fr

Young Scientist FORUM Invited Presentation PhD Student Paulina X. Medina-Rangel

Molecularly Imprinted Polymer Nanoparticles as Synthetic Antibody Mimics for Cell Targeting and Imaging

Paulina X. Medina-Rangel,* Bernadette Tse Sum Bui, Karsten Haupt
Sorbonne Universités, Université de Technologie de Compiègne, CNRS UMR 7025 Enzyme and Cell Engineering karsten.haupt@utc.fr



Dr. **Kertész Krisztián Imre**, Ph D Institute of Technical Physics and Materials Science, Centre for Energy Research, 1525 Budapest, PO Box 49, Hungary (<http://www.nanotechnology.hu/>) kertesz@mfa.kfki.hu
https://doktori.hu/index.php?menuid=192&sz_ID=11203&lang=EN

Dr. **Kertész Krisztián Imre** completed his studies in physics at the Budapest University of Technology and Economics, Hungary in 2000 and afterwards he performed at this University in the laboratory of physics his research work to receive the Master of Science Degree (2002) and the Ph.D – Candidate of Physical and Mathematical sciences (2010). He worked as academic researcher at Research Institute for Technical Physics & Materials Science (2002).

Research interests: Dr. Kertész has focuses its research efforts on two-dimensional (2D) materials. Our research covers the synthesis of various 2D crystals, their atomic resolution characterization, nano-engineering, studying the electronic properties of 2D nanostructures and fabrication of proof of concept electron devices based on 2D materials and their nanostructures. Besides graphene, they study various 2D transition metal dichalcogenide single layers, as well as started the investigation of topological insulators. He is author /co-author more than twenty articles at refereed journals and co-author two invited chapters at special books (Publ. World Scientific).

Research activity: Researcher on photonic nanoarchitectures of biological origin has also been successfully continued at the EU FP7 Marie Curie project (2017 by atomic resolution STM measurements they observed interaction effects in the chaotic quantum billiard of the Dirac electrons within a graphene nanotriangle of 10 nm sides length.) and In the OTKA project they showed that the blue colour of the butterfly wings originating from the nanoarchitectures is robust while the brown colour of chemical origin is highly sensitive to the thermal stress applied in the chrysalis stage.

The E-MRS activity: Dr. Kertész is The E-MRS Member during 2009 -2018 for Special Sessions on Nanocarbon materials at The E-MRS Symposia ‘Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials: VI 2016 and 2017 VII.

Now, for this Symposium VIII 2018, Dr. Kertész is The E-MRS Working Team Member during Special Session “Keynote Forum. Frontiers in Nano - materials/systems/interfaces Multifunctionality for Human Well – being” on 17 September 2018.

Keynote FORUM Invited Presentation

Invited Presentation: Investigation of the long term stability of vapor sensors based on butterfly wings

K. Kertész¹, G. Piszter¹, Zs. Bálint², L. P. Biró¹

¹ Institute of Technical Physics and Materials Science, Centre for Energy Research, 1525 Budapest, PO Box 49, Hungary (<http://www.nanotechnology.hu/>)

² Hungarian Natural History Museum, Baross utca 13, H-1088 Budapest, Hungary



Dr. **KALSKA-SZOSTKO Beata**, University of Bialystok, Institute of Chemistry, Street Ciolkowiego 1K, 15-245 Bialystok, Poland, +48 85 738 8069, kalska@uwb.edu.pl

Selected publications:

1. **Characterization of ferrite nanoparticles for preparation of biocomposites** // Urszula Klekotka, Dariusz Satula, Magdalena Rogowska, Beata Kalska-Szostko, Beilstein Journal of Nanotechnology 8(1):1257-1265 · June 2017 DOI: 10.3762/bjnano.8.127
2. **Biotribological properties of dentures lubricated with artificial saliva** // J. Mystkowska, J. Sidorenko, W. Karalus, Beata Kalska-Szostko, Journal of Friction and Wear 37(6):544-551 · November 2016 DOI: 10.3103/S1068366616060106

The E-MRS Activity: The E-MRS Member 2014, 2018 with Oral/Special Invited Presentations for The E-MRS Symposia “Bioinspired and Biointegrated Materials as New Frontiers Nanomaterials III, VIII”

General SESSION Invited Presentation.

Biomedical applications of doped ferrites and surface modified nanograins.

Beata Kalska-Szostko,
University of Bialystok, Institute of Chemistry, Bialystok, Poland kalska@uwb.edu.pl



Dr. **Yi-Ping Chen, Ph.D**, Assistant Professor Graduate Institute of Nanomedicine and Medical Engineering, College of Biomedical Engineering, Taipei Medical University, E-mail: haychen@tmu.edu.tw

Assistant Professor Yi-Ping Chen received his PhD in Chemical Biology from National Taiwan University in 2013 and worked as a postdoctoral fellow at Research Center for Applied Sciences, Academia Sinica, Taiwan (2013-2015). Then, he joined Taipei Medical University as an assistant professor in 2015 and had been a visiting scientist at UCLA in 2016. His current research interests focus on the design and synthesis of multifunctional mesoporous silica nanoparticle (MSN) for biomedical applications, including protein delivery approach, antibody targeting and cancer therapy. Besides, Dr. Yi-Ping Chen and his collaborators aim to design an ideal MSN with the characteristics of biocompatibility, stability, and not accumulate in organs after administration in order to push the nano carrier into preclinical, as well as attempt to address the current developmental and therapeutic challenges.

Keynote FORUM Special Invited Lecture

A novel strategy for antibody targeted therapy by using smart mesoporous silica nanoparticles

Yi-Ping Chen¹, Si-Han Wu¹, Chien-Tsu Chen², Fan-Ching Chien³, Peilin Chen⁴ and Chung-Yuan Mou^{1,5}
¹*Graduate Institute of Nanomedicine and Medical Engineering, Taipei Medical University, Taiwan;* ²*Department of Biochemistry and Molecular Cell Biology, Taipei Medical University, Taiwan;* ³*Department of Optics and Photonics, National Central University, Taiwan;* ⁴*Research Center of Applied Science, Academia Sinica, Taiwan;* ⁵*Department of Chemistry, National Taiwan University, Taiwan*