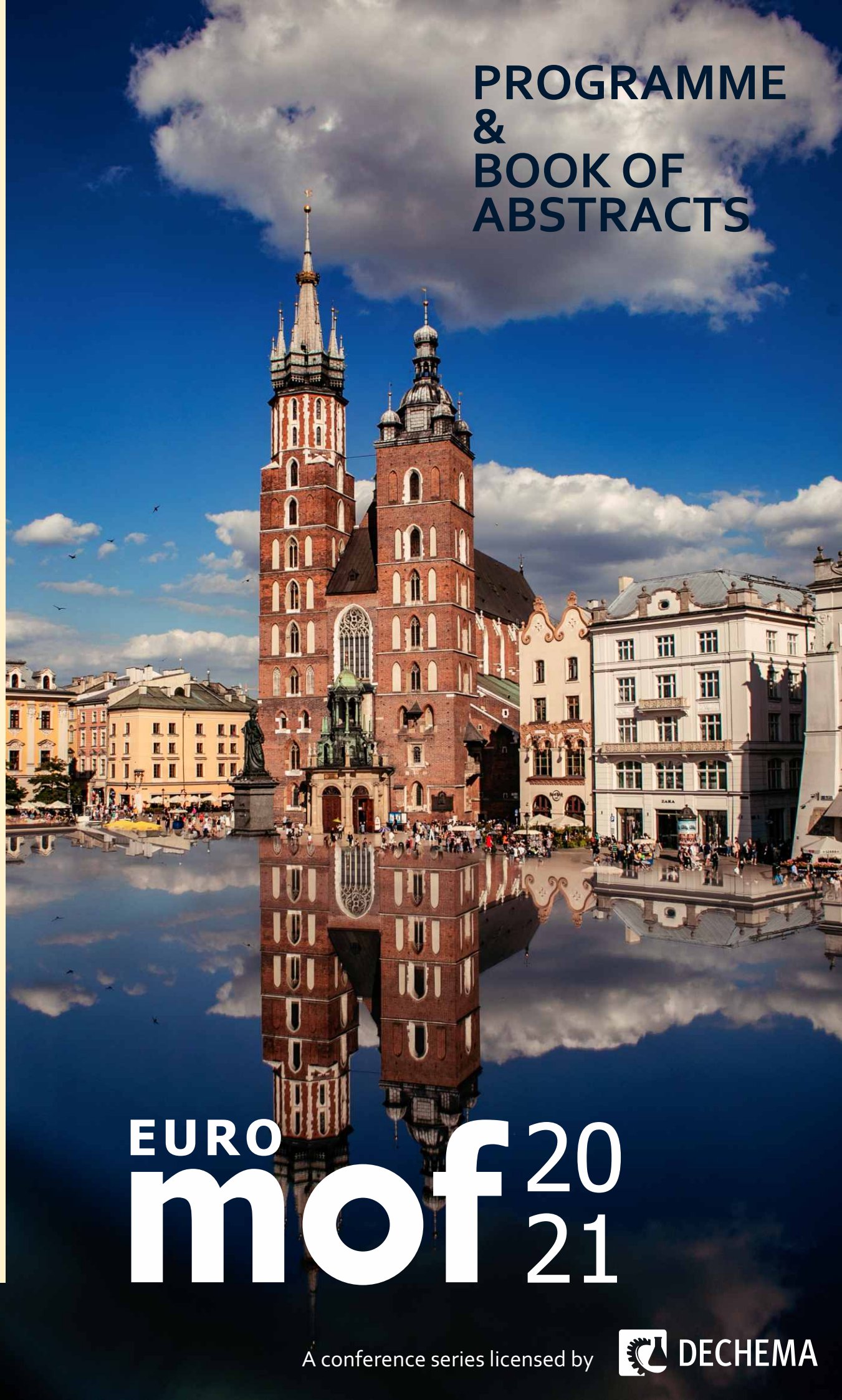


4th European Conference on Metal Organic Frameworks and Porous Polymers
13-15 September 2021, Jagiellonian University in Kraków, Poland

PROGRAMME
&
BOOK OF
ABSTRACTS



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DECHEMA

EuroMOF2021, 4th European Conference on Metal Organic Frameworks and Porous Polymers, 13-15 September 2021, Kraków, Poland, Programme & Book of Abstracts
Kraków 2021

Publisher: Faculty of Chemistry, Jagiellonian University in Kraków, Poland

Editor: Agnieszka Węgrzyn

ISBN 978-83-951195-7-6

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Materials prepared on the basis of abstracts sent by the Authors.

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Kraków, September 8, 2021

Welcome to the EuroMOF2021 conference!

Dear Colleagues and Science Enthusiasts,

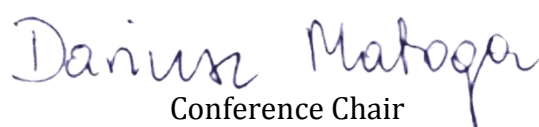
On behalf of the Conference Organizing Committee, we welcome you with great pleasure to the 4th European Conference on Metal Organic Frameworks and Porous Polymers (EuroMOF2021).

The conference is aimed at bringing together scientists and other enthusiasts of open framework materials and related compounds to share and discuss their recent research in a friendly and inspiring atmosphere. It was preceded by three successful EuroMOF events in Potsdam (2015), Delft (2017) and Paris (2019). The fourth conference in the series was to be held physically in Kraków, Poland; however, due to the unexpected outbreak of the COVID-19 epidemic, we have decided to organize this event virtually.

Nevertheless, we strongly believe that the conference in this form will enable the EuroMOF community hold together, evolve and grow, despite difficult times.

Thanks to your commitment and positive responses, we have managed to create a diverse and exciting scientific programme, including a mix of invited and contributed presentations, a satellite Young Investigator Symposium and social activities, that will hopefully turn into a memorable virtual conference.

We look forward to meeting you on the conference platform and in person in the near future!


Conference Chair

Dariusz Matoga, Jagiellonian University, Kraków; **Conference Chair**

Wojciech Bury, University of Wrocław

Barbara Gil, Jagiellonian University, Kraków

Paweł Kozyra, Jagiellonian University, Kraków

Dorota Majda, Jagiellonian University, Kraków

Wacław Makowski, Jagiellonian University, Kraków

Alicja Rafalska-Łasocha, Jagiellonian University, Kraków

Kornel Roztocki, Adam Mickiewicz University, Poznań; *Young Investigator Symposium*

Elżbieta Szostak, Jagiellonian University, Kraków

Agnieszka Węgrzyn, Jagiellonian University, Kraków



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Wrocławski

- Philip Llewellyn**, University of Provence, France, **Committee Chair**
- Seda Keskin Avci**, Koc University, Istanbul, Turkey
- Pascal Dietzel**, University of Bergen, Norway
- Paolo Falcaro**, Graz University of Technology, Austria
- George E. Froudakis**, University of Crete, Greece
- Stefan Kaskel**, Dresden University of Technology, Germany
- Karl Petter Lillerud**, University of Oslo, Norway
- Francesc X. Llabres i Xamena**, Technical University of Valencia, Spain
- Dariusz Matoga**, Jagiellonian University in Kraków, Poland
- Guillaume Maurin**, University of Montpellier, France
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- Hana Bunzen**, University of Augsburg, Germany
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- Claire L Hobday**, University of Edinburgh, United Kingdom
- Paul Iacomi**, Université de Montpellier, France
- Paulo Mendonça Mileo**, Ghent University, Belgium
- Kornel Roztocki**, Adam Mickiewicz University, Poland
- Andreas Schneemann**, Dresden University of Technology, Germany

Main conference topics (sections):**S1 Synthesis****S2 Synthetic methods****S3 Theory and modelling****S4 Advanced characterization****S5 Adsorption, separation, gas storage****S6 Catalysis****S7 Physical properties****S8 Biological aspects****S9 COFs, glasses, cages, composites**



Susumu Kitagawa

Institute for Integrated Cell-Material Sciences, (WPI-iCeMS),
Kyoto University, Japan

Director of Institute for Integrated Cell-Material Sciences (WPI-iCeMS) at Kyoto University

Susumu Kitagawa received his Ph. D. at Kyoto University and is now Distinguished Professor of Kyoto University, and Director of Institute for Integrated Cell-Material Sciences (WPI-iCeMS) at Kyoto University.

His main research fields are coordination chemistry, in particular, chemistry of coordination space, and his current research interests are centered on synthesis and properties of porous coordination polymers (PCPs) /metal-organic frameworks (MOFs).

Kitagawa was the first to demonstrate “porosity” for coordination networks with gas sorption experiments (1997). He pioneered a new type of MOFs with structural flexibility and coined soft porous crystals for them, which show unique porous properties dissimilar to those of conventional porous materials. To date, MOFs are classified as a new category of porous materials, as opposed to the conventional classifications of inorganic and carbon materials. He received many awards such as Humboldt Research Award (2008), The Chemical Society of Japan Award (2009), Thomson Reuters Citation Laureate (2010), The RSC de Gennes Prize (2013), Japan Academy Award (2016), Fred Basolo Medal (2016), Chemistry for the Future Solvay Prize (2017) and Grand Prix of the Fondation de la maison de la chimie, France(2018)



Marek Samoć

Advanced Materials Engineering and Modelling Group, Wroclaw University of Science and Technology, Poland

Professor of Materials Science and Head of Advanced Materials Engineering and Modelling Group

Degrees and Titles:

PhD. in Chemistry - Technical University of Wroclaw, Poland, Institute of Organic and Physical Chemistry, 1977

Habilitation (D.Sc.) - Technical University of Wroclaw, 1985

Professor of Chemical Sciences – title awarded by the President of the Republic of Poland, 2007

Scientific Community Service:

Member of the Council of the National Science Centre, Poland (NCN) for 2018-2022

Corresponding Member of the Polish Academy of Sciences.

Corresponding Member of the Polish Academy of Knowledge

Member of the European Academy of Sciences (EurASC)

Research Interests and Expertise:

Nonlinear optical materials and effects: Nonlinear absorption and refraction; second-order nonlinear optical effects and materials; third-order nonlinear optical effects and materials; nonlinear chiroptic effects.

Nanophotonics and biophotonics: Nanoconfined structures and metamaterials; colloidal semiconductor nanocrystals; upconverting nanoparticles; plasmonic nanostructures; markers for nonlinear microscopy; light-activated theranostic systems.

Electrical and related properties of organic solids: Photoconduction, photovoltaics and charge carrier mobility; photorefractive effect.

Membership of Learned Societies: SPIE, Optical Society of America, Polish Chemical Society.

Track Record: ~380 publications, >10000 citations, h-index=58.

Major Awards:

Foundation for Polish Science “Welcome” award (2009)

Poland Prime Minister Science Prize for outstanding achievements in scientific research (2015)

City of Wroclaw Science Prize (2016)

Foundation for Polish Science Prize (2016)
 Polish Chemical Society Jan Zawidzki Medal (2017)
 Sapientia Sat Medal from J. Sniadecki, K. Olszewski and Z. Wroblewski Association (2018)
 French-Polish Award in Chemistry awarded by the French Chemical Society (2019)
 Polish Chemical Society Jędrzej Śniadecki Medal (2020)



Stefan Kaskel

TU Dresden, Germany

Full professor for Inorganic Chemistry at Technical University Dresden

Stefan Kaskel studied chemistry at Eberhard Karls University, Tübingen (Germany), and received his Ph.D. degree in 1997 from the same University. He was a group leader at the Max-Planck-Institut für Kohlenforschung in Mülheim a.d. Ruhr (2000-2004) in the group of F. Schüth. In 2004 he became full professor for Inorganic Chemistry at Technical University Dresden and 2008 also business field manager Chemical Surface Technology at Fraunhofer IWS, Dresden.

His research interests are focused on porous and nanostructured materials (high surface area MOFs and carbons) for applications in energy storage, catalysis, batteries and separation technologies. Stefan Kaskel has authored more than 500 publications with > 37000 citations (google scholar h-index 103) and has contributed as inventor to more than 50 patent applications. In 2016, 2017, 2018, and 2019 he was recognized as a Highly Cited Researcher by Thomson Reuters and Clarivate Analytics. He is a distinguished visiting professor at Tsinghua university and chair of the IZA MOF commission.



Patricia Horcajada

Advanced Porous Materials, IMDEA Energy, Móstoles, Spain

Head of the Advanced Porous Materials Unit at IMDEA Energy Institute

With an unconventional and multidisciplinary scientific background (Pharmacy BCs, 2001 and Material Science Ph.D, 2005; University Complutense of Madrid, Spain), her pioneered PhD work (awarded with PhD distinction) was focused on porous materials for bone replacement and drug release. She then (2005) joined the Institut Lavoisier-France, as CNRS researcher, initiating a totally new field, the biomedical application of MOFs. Since 2016, Dr. Horcajada is Senior Researcher and the Head of the Advanced Porous Materials group in IMDEA Energy (Madrid, Spain).

Her research activity is focused to the development of new porous materials with advanced functionalities, from their synthesis design and specific shaping/formulation to their applications in diverse industrial and societal strategic fields, including energy, environment and health.

Dr Horcajada (h=57) is coauthored of 145 publications (130 in Q1), 7 book chapters, 1 edited book and 9 patents, with >18200 citations and >2000 citations per year in the last 5 years; 37 articles cited > 100 times (according with WoS; Jan. 2021). She has participated in >120 conferences, including 27 invited presentations and 4 plenary lectures.

Her large frame of collaborations has made possible to be involved in 56 highly multidisciplinary projects (38 National, 8 European, 4 International and 6 industrial contracts; coordinating 1 International, 4 EU and 18 National projects, and 1 industrial contract).

She has also large experience in mentoring students: 16 (9 in progress) PhDs. She has also supervised 22 postdoctoral researchers (from which 12 have got a permanent position either in academia or industry, and 3 got the MSCA-IF), 4 technical engineers, 14 MSc, 15 BSc and >30 undergraduate students.

Finally, along her career, she has been awarded with several prizes and awards, including the “Young Researchers Leading Groups” award from Spanish Royal Society of Chemistry (RSEQ; 2020), Leonardo award from BBVA Foundation (2017), “Miguel Catalan” Price for researchers younger than 40 years (2016) and the CNRS Scientific Excellence Prize (PES; 2011-2014).

**Berend Smit**

Laboratory of molecular simulation (LSMO),
 Institut des Sciences et Ingénierie Chimiques, Valais Ecole Polytechnique Fédérale de
 Lausanne (EPFL), Switzerland

Full Professor of Chemical Engineering at the School of Basic Sciences

Berend Smit received an MSc in Chemical Engineering in 1987 and an MSc in Physics both from the Technical University in Delft (the Netherlands). He received in 1990 cum laude PhD in Chemistry from Utrecht University (the Netherlands). He was a (senior) Research Physicists at Shell Research from 1988-1997, Professor of Computational Chemistry at the University of Amsterdam (the Netherlands) 1997-2007. In 2004 Berend Smit was elected Director of the European Center of Atomic and Molecular Computations (CECAM) Lyon France. In 2007 he was appointed Professor of Chemical Engineering and Chemistry at U.C. Berkeley and Faculty Chemist at Materials Sciences Division, Lawrence Berkeley National Laboratory.

Since July 2014 he is full professor at EPFL.

Berend Smit's research focuses on the application and development of novel molecular simulation techniques, with emphasis on energy related applications. Together with Daan Frenkel he wrote the textbook Understanding Molecular Simulations and together with Jeff Reimer, Curt Oldenburg, and Ian Bourg the textbook Introduction to Carbon Capture and Sequestration.

**Omar M. Yaghi**

Department of Chemistry, University of California, Berkeley, CA 94705, USA

James and Neeltje Tretter Chair Professor of Chemistry University of California, Berkeley

Omar M. Yaghi is the James and Neeltje Tretter Chair Professor of Chemistry at University of California, Berkeley. He is widely known for his pioneering work of several extensive classes of new materials: Metal-Organic Frameworks (MOFs), Covalent Organic Frameworks (COFs), and Zeolitic Imidazolate Frameworks (ZIFs). Yaghi established the chemical foundation of the MOF field through his successful crystallization of the first of MOFs with the strong bond approach in 1995, where metal ions are joined by charged organic linkers exemplified by carboxylates, followed by the use of multi-metallic clusters as secondary building units (SBU), the proof of permanent porosity in MOFs by gas adsorption isotherm in 1998, and achieving ultrahigh porosity in 1999 with MOF-5. His discoveries of the first 2D COFs in 2005 and 3D COFs in 2007 vastly expand the scope of organic materials beyond 0D (molecular solids) and 1D (polymers) to 2D (layered COFs) and 3D (network COFs). He termed this field 'Reticular Chemistry' and defines it as the 'linking of molecular building blocks by strong bonds into crystalline extended structures'. Yaghi has also been leading the effort in applying these materials in clean energy technologies including hydrogen and methane storage, carbon dioxide capture and storage, as well as harvesting water from desert air.

Yaghi is an elected member of the National Academy of Sciences of the United States, and has been honored with many awards for his scientific accomplishments, including the Materials Research Society Medal (2007), the American Chemical Society Award in the Chemistry of Materials (2009), the King Faisal International Prize in Science (2015), the Royal Society of Chemistry Spiers Memorial Award (2017), the Albert Einstein World Award of Science (2017), the BBVA Foundation Frontiers of Knowledge Award in Basic Sciences (2017), the Wolf Prize in Chemistry (2018), the ENI Award for Excellence in Energy (2018), the Gregori Aminoff Prize by the Royal Swedish Academy of Sciences (2019), the August-Wilhelm-von-Hofmann-Denkünze of the German Chemical Society (2020), and the Royal Society of Chemistry Sustainable Water Award (2020).



Bettina Valeska Lotsch

Max Planck Institute for Solid State Research, Stuttgart
Department of Chemistry, University of Munich (LMU), Germany

Director at MAX-PLANCK-INSTITUT FÜR FESTKÖRPERFORSCHUNG

Bettina Lotsch is the Director of the Nanochemistry Department at the Max Planck Institute for Solid State Research (MPI-FKF) in Stuttgart, Germany. She studied Chemistry at the Ludwig-Maximilians-Universität München (LMU) and the University of Oxford and received her PhD from LMU Munich in 2006. After a postdoctoral stay at the University of Toronto she became a professor at LMU Munich in 2009 and was appointed Director at MPI-FKF in 2017. Bettina also holds honorary professorships at LMU Munich and the University of Stuttgart, and is PI of the Munich-based Cluster of Excellence e-conversion.

Bettina's research explores the rational synthesis of new materials by combining the tools of molecular, solid-state and nanochemistry. Current research interests include molecular frameworks for solar energy conversion and storage, solid electrolytes for all-solid-state batteries, and "smart" photonic crystals for optical sensing.

Bettina was awarded an ERC Starting Grant (2014) and has been elected a Fellow of the Royal Society of Chemistry in 2014. Her work has been recognized by a number of awards, including the EU-40 Materials Prize 2017 of the European Materials Research Society.



Mohamed Eddaoudi

KAUST, 4700 King Abdullah University of Science and Technology,
Saudi Arabia

Prof. Mohamed Eddaoudi is a Distinguished Professor of Chemical Science, and Director of the Advanced Membranes and Porous Materials Center at King Abdullah University of Science and Technology (KAUST).

Dr. Eddaoudi received his master's and doctorate in Chemistry from Denis Diderot University (Paris VII) in Paris, France.

Dr. Eddaoudi is a member of the American Chemical Society. He received the Outstanding Faculty Research Achievement Award (2004 and 2007) and the Chemistry Outstanding Teaching Award (2005 and 2008) from the University of South Florida.

Dr. Eddaoudi was selected in 2014, 2015, 2016, 2017, 2018, 2019 and 2020 as Thomson Reuters Highly Cited Researchers and world's most influenced scientific minds (2014).

Dr. Eddaoudi published over 250 publications with over 70000 citation and an h-index= 95 (google Scholar)

He was awarded Almaraii Prize for Distinguished Scientist (November 2020)

He was awarded the Abdul Hameed Shoman Prize for Arab Researchers, topic 'Renewable Energy'. (September 2019)

He was awarded the prestigious National Science Foundation Career Award in 2006.

Dr. Eddaoudi has given more than 150 invited talks at conferences and universities since 2002.

His contribution to the field of metal-organic frameworks (MOFs) has been highly visible in peer-reviewed journals, as evidenced through his recognition by ISI in 2007 as one of the top 100 most cited chemists of the past 10 years (ranked #68), <http://in-cites.com/nobel/2007-che-top100.html>.

Research Interests

Develop new strategies for the rational design and construction of functional solid state materials.

Design and synthesis of functional porous solids for Energy and Environmental Sustainability: including metal-organic frameworks (MOFs), covalent-organic frameworks (COFs), porous organic polymers (POPs) for Hydrogen storage, Methane storage, CO₂ capture & utilization, Energy storage, Sensing and catalysis applications, MOF based Adsorbents and Membranes addressing the energy-intensive gas or vapor separations.

Research group website: <http://fmd3.kaust.edu.sa/>



Satoshi Horike

Kyoto University, Japan

Associate Professor at Institute for Advanced Study, Kyoto University

Satoshi Horike received a Ph.D. in 2007 at the Graduate School of Engineering, Kyoto University. Subsequently, he moved to carry out postdoctoral research at the University of California, Berkeley. Upon completion of his postdoctoral studies in 2009, he began to work at Kyoto University, Graduate School of Engineering as an Assistant Professor. From 2017, he is working at the current position of Associate Professor at Institute for Advanced Study, Kyoto University. His research is based on synthetic coordination chemistry and solid-state chemistry, and it involves design of solid ion conductors, and molecular framework-based glass materials.



Mircea Dincă

Department of Chemistry
Massachusetts Institute of Technology, USA

W. M. Keck Professor of Energy and Professor of Chemistry, MIT

Mircea Dincă was born in Făgăraș, a small Transylvanian town in central Romania. He obtained his Bachelor of Arts degree in Chemistry from Princeton University in 2003, and did his graduate work at UC Berkeley, where he obtained a PhD in Inorganic Chemistry in 2008. After a two-year stint as a postdoctoral associate working on heterogeneous electrocatalytic water splitting at MIT, he became an Assistant Professor in the Department of Chemistry at MIT in July 2010. Promoted to Associate Professor in 2015 and to Professor of Chemistry in 2020, he currently holds the W. M. Keck Chair as Professor of Energy at MIT. His research interests focus on creating and manipulating microporous and low-dimensional solids with molecular precision for applications in various energy efficiency and environmental challenges. These include, but are not limited to: electrical energy storage and conversion, heterogeneous catalysis, fresh water harvesting, efficient air conditioning, and photophysical processes. He has been named to the world's most cited Chemists list since 2014 and has received a number of awards, most recently the ACS Award in Pure Chemistry (2018), and the Alan T. Waterman Award, NSF's most prestigious award in all sciences and engineering to any single person under the age of 35 (2016).



Tina Düren

Centre for Advanced Separations Engineering, Department of Chemical Engineering,
University of Bath, UK

Tina Düren received her PhD in 2002 from the Technical University Hamburg-Harburg, before spending two years as a postdoctoral researcher with Prof Randy Snurr's group at Northwestern University, USA. She joined the University of Edinburgh as a lecturer in 2004 and moved to the University of Bath, UK, in 2014 where she currently is a Professor in Chemical Engineering. In her research, Tina uses molecular simulation techniques to study porous materials such as metal-organic frameworks, zeolites and mesoporous silicas with properties tailored for specific adsorption applications.

Recent work includes combining machine learning and molecular simulation, the description of adsorption induced flexibility in MOFs and zeolites, as well as modelling synthesis and self-assembly processes of metal-organic framework. She is currently a member of the MOF commission of the International Zeolite Association and the chair of the British Zeolite Association.

**Daniel Maspoch**

Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC; Barcelona Institute of Science and Technology; ICREA Barcelona, Spain

ICREA Research Professor and Leader of the Supramolecular NanoChemistry & Materials Group at ICN2

He is a chemist who has always maintained a rewarding balance between fundamental and applied research, with pioneering developments in the field of reticular materials and delivery systems. He is author of over 160 manuscripts and 6 book chapters. In addition, in 2014, 2019 and 2021 he got a prestigious ERC Consolidator Grant, ERC Proof-of-Concept Grant and ERC Advanced Grant, respectively. In 2015, he was awarded the Premio Marcial Moreno Mañas Lectureship, and in 2020 he was rewarded with the Research Excellence Award from the Spanish Royal Society of Chemistry.

From the technology transfer side, several technologies and materials developed by his group have been transferred –through licensing patents or signing technology transfer contracts– to various companies. More specifically, Daniel has signed more than 22 research contracts with private companies and has filed 11 patents, from which 4 have been licensed. Moreover, he has been able to signed 4 technology transfer contracts. Interestingly, these technologies have given rise to families of products that are now on the market, as for example LuctaCaps® and Fungipol@CP. He is also co-founder of the spin-off company Ahead Therapeutics.

Dr. Maspoch graduated in Chemistry at the Universitat de Girona and obtained his PhD in Materials Science at the Universitat Autònoma de Barcelona & Institut de Ciència de Materials de Barcelona working in the group of Prof. Jaume Veciana and Prof. Concepció Rovira. He then moved to Northwestern University, where he worked as a postdoctoral fellow in the group of professor Chad A. Mirkin. Since September 2011 he is ICREA Research Professor and Group Leader at the Institut Català de Nanociència i Nanotecnologia (ICN2).



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