

Plenary & Keynote Talks

META 2024 will feature several **Plenary Talks** and **Keynote Lectures** by world leading experts on nanophotonics and metamaterials providing insights into the latest trends and strategies actionable to deal with the practical challenges faced by the community.

Plenary Lectures

Plenary Lecture 1:



Harry Atwater

California Institute of Technology (USA)

Harry Atwater is the Otis Booth Leadership Chair of the Division of Engineering and Applied Science, and the Howard Hughes Professor of Applied Physics and Materials Science at the California Institute of Technology. Atwater's scientific effort focuses on nanophotonic light-matter interactions. His work spans fundamental nanophotonic phenomena and applications, including active wavefront shaping of light using metasurfaces, optical propulsion of lightsails, quantum and 2D nanophotonics as well as solar energy conversion, on earth and in space.

Atwater was an early pioneer in nanophotonics and plasmonics and gave a name to the field of plasmonics in 2001. He is Chair of the LightSail Committee for the Breakthrough Starshot program. Currently Atwater is also the Director for the Liquid Sunlight Alliance (LiSA), a Department of Energy Hub program for solar fuels, and was also the founding Editor in Chief of the journal ACS Photonics. Atwater is a Member of the US National Academy of Engineering, a Fellow of APS, MRS, SPIE and Optica, a Web of Science Highly Cited Researcher from 2014-2023, and is recipient of numerous awards, including the 2021 von Hippel Award of the Materials Research Society.

Plenary Lecture 2: Shaping the propagation of light in complex media



Hui Cao

Yale University (USA)

Hui Cao is the John C. Malone Professor of Applied Physics, a Professor of Physics, and a Professor of Electrical Engineering at Yale University. She received her Ph.D. degree in Applied Physics from Stanford University in 1997. Prior to joining the Yale faculty in 2008, she was on the faculty of Northwestern University for ten years. Her technical interests and activities are in the areas of mesoscopic physics, complex photonic materials and devices, nanophotonics, and biophotonics. Cao is a Fellow of IEEE, AAAS, APS and OSA, and an elected member of the National Academy of Sciences, and the American Academy of Arts and Sciences.

Plenary Lecture 3:



Franco Nori

Riken (Japan) and University of Michigan (USA)

Franco Nori is a Chief Scientist at RIKEN, with a concurrent position at the University of Michigan. He received his PhD from the University of Illinois, and afterwards became a postdoc at the Institute for Theoretical Physics, University of California, Santa Barbara. His research group has done pioneering interdisciplinary studies at the interface between nanoscience, photonics, quantum optics, dissipative quantum open systems, quantum information processing, superconducting quantum circuitry, opto-mechanics, and condensed matter physics. He has been listed by the Web of Science as a "Highly Cited Researcher" (less than 0.1% are selected) in Physics for the past seven consecutive years: from 2017 to 2023. He is an Elected Fellow of the American Physics Society (APS), Institute of Physics (IoP), American Association for the Advancement of Science (AAAS), and Optical Society of America (OSA) [this last one "for

fundamental contributions to quantum information science and optics, including circuit quantum electrodynamics, and the interface between quantum optics and quantum circuits"]. He received the 2014 Prize for Research in Physics, from the Matsuo Foundation, Japan; and the 2013 Prize for Science, by the Minister of Education, Culture, Sports, Science and Technology, Japan. Also, an "Excellence in Research Award" and an "Excellence in Education Award" from the University of Michigan. He is an Elected Member of the Academia Europaea, the Latin American Academy of Sciences, and a Foreign Member of the Swedish Royal Society of Arts and Sciences, in Gothenburg, Sweden. He won the 2023 W.E. Lamb Medal, for research on Quantum Optics, Quantum Electronics and Quantum Information.

Plenary Lecture 4:



Takashige Omatsu

Chiba University (Japan)

Takashige Omatsu received his BS and PhD degrees in applied physics from the University of Tokyo in 1983 and 1992, and he has been a professor at Chiba University since 2007. He is currently working as a director of Molecular Chirality Research Center, Chiba University. He has been investigating the generation of structured light on a nano/micron scale and pioneering nano/micro fabrications using structured light. He has already published 200+ journal papers, 250+ international conference papers, and 14 patents (including 2 US-patents), and he has performed 150+ invited presentations. Prof. Omatsu is working as the founding editor-in-chief of Optics Continuum (Optica), and he is also serving as a chair of the CLEO Pacific Rim Steering Committee. He was elected Optica, SPIE and JSAP fellow. Also, he was awarded Prize for Science and Technology, MEXT in 2016.

Additional plenary lectures will be announced shortly...

Keynote Lectures

Keynote Lecture 1:



Gerrit Ernst Wilhem Bauer

Delft University of Technology (The Netherlands) & Tohoku University (Japan)

Gerrit Ernst Wilhem Bauer (*1956) was raised in the Gronau/Westfalen, Germany. He studied chemical engineering at Twente University in the Netherlands (M.Sc. 1980), experimental physics at the Hahn-Meitner Institute in Berlin (Ph.D. 1984) and theoretical physics as a JSPS Postdoctoral Fellow at the University of Tokyo. He spent 6 years at the corporate Philips Research Laboratories in Eindhoven (NL). He became professor in Theoretical Physics at Delft University of Technology in 1992, at the Tohoku University in Japan in 2011, and at the UCAS in China in 2022. He is presently Chair Professor at the Kavli Institute for Theoretical Science in Beijing as well as Professor and PI at the Advanced Institute of Material Science of Tohoku University on a shared basis. He is a Fellow of the American Physical Society and The Japan Society of Applied Physics. He received a.o. the Humboldt Research Award 2023. His published oeuvre in (mainly) theoretical condensed matter physics can be found under his Researcher ID F-8273-2010.

Keynote Lecture 2: Metamaterials with architected instabilities



Davide Bigoni

University of Trento (Italy)

Davide Bigoni has been holding a full professor position at the University of Trento (Italy) since 2001, where he is leading a very active group in the field of Solid and Structural Mechanics. He was elected in 2009 Euromech Fellow (of the European Mechanics Society), received in 2012 the Ceramic Technology Transfer Day Award (of the ACIMAC and ISTECCNR), and in 2014 he was awarded the Doctor Honoris Causa degree at the Ovidius University of Constanta. He has received the Panetti and Ferrari Award for Applied Mechanics (from the Accademia delle Scienze di Torino), in 2018 he was Guest Lecturer for the Midwest Mechanics Seminars, in 2019 he was nominated Fellow of the Istituto Lombardo, Accademia di Scienze e Lettere, he was awarded a 60th Anniversary Issue of the Journal of the Mechanics and Physics of Solids. His research has been featured on 8 covers of International Journals. He has coordinated and has been involved in 3 European grants between academia and industry. He has been awarded 2 ERC advanced grants from the

European Research Council, the first in 2013 and the second in 2021. He is co-editor of the Journal of Mechanics of Materials and Structures, is associate Editor of Mechanics Research Communications and member of the editorial boards of: Archives of Mechanics, International Journal of Solids and Structures, Journal of Elasticity, Journal of the Mechanical Behavior of Materials, Acta Mechanica Sinica, and International Journal of Applied Mechanics. He is reviewer for more than 150 international journals. He was vice chair of the panel PE8 for the European Research Council Starting Grants.

Keynote Lecture 3:



Konstantin Bliokh
RIKEN (Japan)

Konstantin Bliokh received the M.Sc. and Ph.D. degrees in physics from the Kharkov National University (Ukraine) in 1998 and 2001, respectively. After that, he worked at the Institute of Radio Astronomy (Ukraine). He was a post-doctoral fellow at Bar-Ilan University (Israel, 2003–2005), a visiting research scientist at Technion–Israel Institute of Technology (Israel, 2007), a Linkage International research fellow at the Australian National University (Australia, 2008–2009), and a Marie Curie research fellow at the National University of Ireland (Ireland, 2009–2011). Starting from 2011, he is a Senior Research Scientist at RIKEN (Japan). He has co-authored over 130 scientific papers, reviews, and book chapters.

Keynote Lecture 4:



Javier García de Abajo
ICFO-Institut de Ciències Fòtoniques (Spain)

Javier García de Abajo received his PhD from the University of the Basque Country (1993) and then visited Berkeley National Lab for three years. He was a Research Professor at the Spanish CSIC and in 2013 moved to ICFO-Institut de Ciències Fòtoniques (Barcelona) as an ICREA Research Professor and Group Leader. He is a Fellow of both the American Physical Society and the Optical Society of America. García de Abajo has co-authored 400+ articles cited 59,000+ times with an h index of 116 (Sept. 2023 Google Scholar data), including contributions on different aspects of surface science, nanophotonics, and electron microscope spectroscopies.

Keynote Lecture 5:



Costantino De Angelis
Brescia University (Italy)

Costantino De Angelis received his PhD from the University of the Padova (1993) where he served as Assistant Professor of Electromagnetic Fields and Photonics. In 1998 he joined Brescia University where he is Full Professor of Electromagnetic Fields and Photonics since 2004. He is the head of the NORA group at the University of Brescia (<https://nora.unibs.it/home>) and his current research interest include nonlinear optics, nanophotonics, and optical metamaterials. He is a Fellow of OPTICA (the Optical Society of America).

Keynote Lecture 6:



Ortwin Hess
Trinity College Dublin (Ireland)

Ortwin Hess currently holds the Chair Professorship of Quantum Nanophotonics and an SFI Research Professorship in the School of Physics and the CRANN Institute of Trinity College Dublin, The University of Dublin, Ireland. He is Editor-in-Chief of the gold open-access journal APL Quantum. Ortwin is a Fellow of the Institute of Physics (FIInstP), a Fellow of Optica (formerly OSA) and a Professorial Fellow of Trinity College Dublin. Previously, Ortwin held the Leverhulme Chair in Metamaterials in the Blackett Laboratory at Imperial College London, UK. From 2003 to 2010 he was a full

professor at the University of Surrey (Guildford, UK) and visiting professor at Stanford University, USA, and at the Ludwig-Maximilians University of Munich, Germany. Ortwin obtained the Dr-rer-nat. (PhD) degree from the Technical University of Berlin, Germany in 1993 and the Habilitation (Dr-habil.) at the University of Stuttgart, Germany in 1997. Ortwin's research interests bridge quantum nanophotonics with semiconductor and metamaterials physics, laser science and bio-medical photonics. He discovered the 'trapped-rainbow' principle, had the idea of stopped-light lasing and made defining contributions to the fields of spatio-temporal dynamics of semiconductor lasers, ultraslow light in metamaterials, complex quantum dot photonics and photonic crystals and strong coupling in nanoplasmonics. Ortwin pioneered active nanoplasmonics and optical metamaterials with quantum gain for which he has been awarded the Royal Society Rumford Medal.

Keynote Lecture 7:



Malcolm Kadodwala
University of Glasgow (UK)

Malcolm Kadodwala is the Gardiner Chair of Chemistry at the University of Glasgow. He has pioneered the use of chiral plasmonic metamaterials for the study of biomaterials. His seminal paper on the demonstration of the application of chiral near fields for biomaterial characterisation (Nature Nano) has been cited >1100 times (Google Scholar). He was awarded a JSPS visiting Professorship at the Institute of Molecular Sciences, Japan in 2015, was a visiting Professor at the Dept of Physics, Osaka Metropolitan University, in 2018, and was awarded a Leverhulme research fellowship (2019-2021).

Keynote Lecture 8:



Stefan Maier
Monash University (Australia) & Imperial College London (UK)

Stefan Maier is the Head of the School of Physics and Astronomy at Monash University and the Lee-Lucas Chair in Experimental Physics at Imperial College London. His main research interests lie in metasurfaces and nanophotonics for energy conversion, sensing, and optoelectronics. He is a Fellow of the Australian Institute of Physics, the Institute of Physics (UK) and Optica. He also currently serves as editor-in-chief for Nanophotonics. Stefan obtained his PhD in Applied Physics at Caltech, and held academic positions at the University of Bath and LMU Munich. He has been on the ICI Highly Cited list since 2017.

Keynote Lecture 9:



Nam-Gyu Park
Sungkyunkwan University (Korea)

Nam-Gyu Park is a Distinguished Professor at the School of Chemical Engineering and Director of the SKKU Institute of Energy Science and Technology (SIEST), Sungkyunkwan University (SKKU). He received his B.S. degree in chemical education, and M.S. and Ph.D. degrees in chemistry from Seoul National University in 1988, 1992, and 1995, respectively. He worked as a postdoctoral researcher at ICMCB-CNRS, France, from 1996 to 1997 and at National Renewable Energy Laboratory, USA, from 1997 to 1999. He was director of the solar cell research center at the Korea Institute of Science and Technology (KIST) from 2005 to 2009 and senior researcher at the Electronics and Telecommunications Research Institute (ETRI) from 2000 to 2005 before joining SKKU as a full professor in 2009. He is a fellow of the Korean Academy of Science and Technology (KAST) since 2017. He has been working on photovoltaics since 1997. He was the first to report a long-term stable perovskite solar cell in 2012. This opened a new research area, so-called perovskite photovoltaics. He was selected as Citation Laureate (top 0.01% scientist); a New Class of Nobel Prize-Worthy Scientist on September 20, 2017, and included in highly cited researchers (HCR, top 1% scientists) from 2017 to 2023 by Clarivate Analytics. He received awards including the Scientist Award of the Month (2008), KIST Award of the Year (2009), Dupont Science and Technology Award (2010), SKKU fellowship (three times in 2013, 2018, and 2021), PVSEC Hamakawa Award (2015), Dukmyung KAST Engineering Award (2016), ACS-KCS Excellence Award (2018), Ho-Am Prize (Samsung, 2018) and Rank Prize (UK, 2022). Prof. Park has currently more than 390 refereed publications and more than 70 patents. He received an H-index of 116 from Google

Scholar (105 from Web of Science and 108 from Scopus). He is the Senior Editor of ACS Energy Letters and serves on the Editorial Advisory Board for Chem. Rev., ChemSusChem, and Solar RRL.

Keynote Lecture 10:

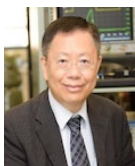


Vladimir M. Shalaev

Purdue University, USA

Vladimir M. Shalaev, Scientific Director for Nanophotonics at Birck Nanotechnology Center and Distinguished Professor of Electrical and Computer Engineering at Purdue University, specializes in nanophotonics, plasmonics, and optical metamaterials. Vladimir M. Shalaev has received several awards for his research in the field of nanophotonics and metamaterials, including the Max Born Award of the Optical Society of America for his pioneering contributions to the field of optical metamaterials, the Willis E. Lamb Award for Laser Science and Quantum Optics, IEEE Photonics Society William Streifer Scientific Achievement Award, Rolf Landauer medal of the ETOPIA (Electrical, Transport and Optical Properties of Inhomogeneous Media) International Association, the UNESCO Medal for the development of nanosciences and nanotechnologies, OSA and SPIE Goodman Book Writing Award. He is a Fellow of the IEEE, APS, SPIE, MRS and OSA. Prof. Shalaev has authored three books, thirty invited book chapters and over 500 research publications.

Keynote Lecture 11:



Din Ping Tsai

City University of Hong Kong (Hong Kong)

Din Ping Tsai is currently Chair Professor of the Department of Electrical Engineering, City University of Hong Kong. He is an elected Fellow of AAAS, APAM, APS, AAIA, COS, EMA, IAE, IEEE, JSAP, NAI, OSA, SPIE, and TPS, respectively. He is the author and co-author of 372 SCI papers, 65 book chapters and conference papers, and 39 technical reports and articles. He was granted 69 patents for 45 innovations. He was invited as an invited speaker for international conferences or symposiums more than 340 times (30 Plenary Talks, 62 Keynote Talks). He received more than 40 prestigious recognitions and awards, including “Global Highly Cited Researchers,” Web of Science Group (Clarivate Analytics) in 2020 and 2019, respectively; China’s Top 10 Optical Breakthroughs in 2020 and 2018, respectively; “Mozi Award” from International Society for Optics and Photonics (SPIE) (2018); etc.

Keynote Lecture 12:



Anatoly V. Zayats

King’s College London (UK)

Anatoly V. Zayats is a Chair in Experimental Physics and the head of the Photonics & Nanotechnology at the Department of Physics, King’s College London, where he also leads Nano-optics and Near-field Spectroscopy Laboratory (www.nano-optics.org.uk). He is a Co-Director of the London Centre for Nanotechnology and the London Institute of Advanced Light Technologies. His current research interests are in the areas of nanophotonics, plasmonics, metamaterials, optical spin-orbit coupling, plasmonically-derived hot carriers, scanning probe microscopy, nonlinear and ultrafast optics and spectroscopy, and optical properties of surfaces, thin films, semiconductors and low-dimensional structures. He is a founding co-editor-in-chief of Advanced Photonics journal. He is a Fellow of the Institute of Physics, the Optical Society of America, SPIE, the Royal Society of Chemistry and elected Member of Academia Europaea.

Additional keynote lectures will be announced shortly...