

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 light propagation 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: Topological dissipation in a time-multiplexed photonic resonator network and topological temporally mode-locked lasers



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, and the 2024 Charles H. Townes Medal (from the OSA), both for research on Quantum Optics, Quantum Electronics and Quantum Information.

Plenary Lecture 4: Materials manipulation with structured light fields



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.

Plenary Lecture 5: Localized states trapped by topological defects in photonic and hybrid metasurfaces



Daria Smirnova

Australian National University (Australia)

Daria Smirnova received her Ph.D. in Physics in 2016 from the Australian National University (ANU), followed by work experience in the USA, Russia, Japan, and Australia. Since 2019, she has consecutively held two prestigious fellowships supported by the Australian Research Council: the Discovery Early Career Researcher Award and, currently, the Future Fellowship at the ANU. In 2020, Daria was honoured as one of Australia's leading young researchers in The Australian's Special Report. Her research interests span over nonlinear physics, multipolar electrodynamics, nanophotonics, and topological photonics. The quality and impact of her works have been recognized through awards from international organizations, including the International Union of Pure and Applied Physics (IUPAP), MIT Technology Review, Elsevier, L'Oreal-UNESCO, the journal Nanophotonics, and the Australian and New Zealand Optical Society.