

introduced hybrid metasurfaces based on multiple-quantum-well substrates for giant, concentrated nonlinear response at mid-infrared frequencies, and he has initiated the concept and realization of magnetic-free integrated isolators and circulators for sound, radio waves, and

light based on mechanical motion and temporal modulation.

He received the 2016 Edith and Peter O'Donnell Award in Engineering, 2015 National Science Foundation Alan T. Waterman Award, 2014 IEEE Microwave Theory and Techniques

Outstanding Young Engineer Award, 2013 Optical Society of America (OSA) Adolph Lomb Medal, 2011 Issac Koga Gold Medal (URSI), and is a Fellow of the American Physical Society, IEEE, and OSA. Alù has written more than 320 papers and has edited one book.



Ellen D. Williams to present the Fred Kavli Distinguished Lectureship in Materials Science address

Ellen D. Williams, Director of the Advanced Research Projects Agency (ARPA-E) in the US Department of Energy (DOE), will give the talk, “Advanced Research Projects Agency-Energy: Innovation for Impact,” at the 2016 Materials Research Society (MRS) Fall Meeting in Boston.

Prior to Senate confirmation for her role in ARPA-E, Williams served as a senior advisor to the US Secretary of Energy on the DOE's technology transfer policies, issues, and plans. She recommended and helped establish the department's new Office of Technology Transitions to expand the

impact of the department's extensive research and development activities.

She joined DOE from BP, where she had been the chief scientist since 2010. There, she was responsible for assurance of technology programs, and strategic research and program development. Her priority actions included developing the Advisory Oversight structure for BP's Gulf Research Initiative, running a multi-university research program on natural resource constraints in the context of energy (the Energy Sustainability Challenge), and establishing cores of scientific excellence and innovation in

key disciplinary areas essential to BP's long-term technical competitiveness.

Williams worked for more than 30 years in academia, obtaining her PhD degree at Caltech in 1981, and then moving to the University of Maryland, where she became a Distinguished University Professor in the Institute of Physical Science and Technology and the Department of Physics. She founded the University of Maryland Materials Research Science and Engineering Center and served as its director for 15 years. In parallel, Williams has worked extensively in providing technical advice to the US government, primarily through the Departments of Energy and Defense.

Williams is a member of the National Academy of Sciences, a Fellow of the American Physical Society (APS), American Vacuum Society, and American Academy of Arts & Sciences, and has been recognized with awards from the APS and MRS. She has a distinguished history of professional service, including chairing the development of the National Academy of Sciences report on Technical Issues for the Comprehensive Test Ban Treaty.



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