

William R. Wiley

EMSL In Brief

Environmental Molecular Sciences Laboratory

EMSL Researcher Selected for Presidential Early Career Award

Yanwen Zhang, a researcher in the Environmental Molecular Sciences Laboratory's (EMSL's) Interfacial and Nanoscale Science Facility, has received a prestigious Presidential Early Career Award for Scientists and Engineers (PECASE).

Zhang, whose research is supported by the U.S. Department of Energy's (DOE's) Office of Basic Energy Sciences, was nominated and selected in recognition of her research in the fields of ion-beam physics and ion-solid interactions, especially in the field of electronic stopping in solids. She developed a novel approach based on high-resolution time-of-flight spectrometry for accurately measuring electronic stopping over a wide range of energies and for validating theoretical predictions in ceramics. Zhang's studies of complex oxides have potential applications to sensors, fuel cells, oxygen pumps, and nuclear power, while studies of silicon carbide—a material for application in the semiconductor industry and as a structural component in harsh nuclear environments—have yielded critical new understanding and models of defect configurations, damage accumulation, and recovery processes. This fundamental research supports DOE's missions in advanced nuclear power, nuclear nonproliferation, national security, nuclear waste, hydrogen storage, and energy-efficient electronic devices. The broad range of Zhang's research has led to numerous national and international collaborations and has resulted in an extensive publication record.



Yanwen Zhang

The award is the highest honor bestowed by the U.S. government upon outstanding scientists and engineers beginning their independent careers and is administered by the President's Office of Science and Technology Policy. Each year, eight federal departments and agencies—DOE, the National Aeronautics and Space Administration, the National Science Foundation, as well as the Departments of Agriculture, Commerce, Defense, Health and Human Services, and Veterans Affairs—join together to nominate scientists and engineers whose work is of greatest benefit to the nominating agency's mission. These agencies award their selected researchers up to 5 years of funding to further their research in support of their critical missions.

Zhang, an EMSL researcher since 2003, joined three other DOE recipients at a July 26 White House ceremony and reception to accept her award. Since the award was instituted in 1996, the Pacific Northwest National Laboratory, on whose campus EMSL resides, has claimed one other PECASE recipient—Mari Lou Balmer, who received the honor in 1998.

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