

Fuel-cell leadership wins DOE merit award



Piotr Zelenay, of Los Alamos National Laboratory's Materials Synthesis and Integrated Devices group, has been recognized with a 2020 Department of Energy (DOE) Hydrogen and Fuel Cells Program merit review award for his leadership in the Electrocatalysis Consortium (ElectroCat), a research group created in 2016 as part of the Energy Materials Network (EMN).

"We congratulate Piotr and the entire ElectroCat team for this important recognition," said John Sarrao, Associate Laboratory Director for Science, Technology & Engineering. "Fuel cell research in general and platinum-free catalyst work in specific have a long and celebrated history at Los Alamos. We're proud that these efforts are continuing through ElectroCat, and we appreciate the collaborative partnership of the entire ElectroCat team and the sustained support of DOE's Hydrogen and Fuel Cells Technologies Office." The Fuel Cell R&D Award was presented to consortium co-leaders Zelenay and Deborah Myers (Argonne National Laboratory) and steering committee members KC Neyerlin (National Renewable Energy Laboratory), and David Cullen (Oak Ridge National Laboratory) for their exemplary teamwork and technical prowess demonstrated in leading ElectroCat. The four honorees lead a large team of scientists from [Los Alamos National Laboratory](#), Argonne National Laboratory, National Renewable Energy Laboratory, and Oak Ridge National Laboratory, as well as the wider platinum-group metal (PGM)-free fuel cell catalyst community.

The Electrocatalysis Consortium (ElectroCat) is aimed at increasing U.S. competitiveness in manufacturing fuel-cell electric vehicles and other fuel-cell energy conversion devices by addressing the primary challenges to the widespread implementation of this technology. The precious-metal electrocatalysts that are the current standard in fuel-cell systems are expensive, representing more than 40 percent of the fuel-cell stack cost, and they restrict the ability to develop fuel cells that are cost-competitive with traditional hydrocarbon-based power sources.

The team works together to develop and validate PGM-free test protocols, essential to benchmarking and advancing the state of the art in PGM-free catalysts. In addition, they lead efforts to improve catalyst and electrode performance and durability and they oversee an expansive effort in modeling and characterization of PGM-free catalysts. Since the ElectroCat inception in 2016, the team has nearly doubled the kinetic performance of PGM-free electrodes to achieve the highest performance reported at this time. The ElectroCat success is a testament to the collaborative spirit and rigorous technical efforts of its leadership.

Zelenay, a Los Alamos Laboratory Fellow, has been at Los Alamos since March 1997 and holds Ph.D and D.Sc. (habilitation) degrees in chemistry from the University of Warsaw, Poland.

Each year, the DOE Hydrogen and Fuel Cell Technologies Office presents awards for outstanding contributions to the overall efforts of the DOE Hydrogen and Fuel Cells Program and for achievements in specific technical areas. Established under the DOE's Clean Energy Manufacturing Initiative, ElectroCat is funded by the Hydrogen and Fuel Cell Technologies Office in the DOE Office of Energy Efficiency and Renewable Energy.