

A Survey of Fuel Cell Research at The University of Alabama

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As the 20th century came to a close, fuel cell research began to blossom here at The University of Alabama. A group of UA faculty began studying on-board hydrogen generation, bipolar plates, electrocatalysts, and proton exchange membranes, and creating computer simulations of the process. The early years of the 21st century were heady times for fuel cell research. President Bush declared major support for fuel cell research in his State of the Union address, Daimler-Chrysler drove the NECAR 5 fuel cell car with hydrogen from methanol reforming across the country, and teams of UA engineers and scientists were collaborating with Argonne National Laboratories and the US Army National Automotive Center to develop and demonstrate automotive fuel cells with support from UA's Center for Advanced Vehicle Technologies. By mid-decade, fuel cell researchers at UA recognized that the Pt alloy nanoparticles created by MINT researchers could make excellent electrocatalysts. The two research teams, with the help of a large DOE EPSCoR implementation grant, began improving all aspects of fuel cell design with a particular focus on the electrocatalyst. Today 'materials for energy storage' has become a new research focus area for MINT and over 20 faculty members from the Colleges of Engineering and Arts and Sciences are working to build the hydrogen economy and improve fuel cell performance.