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AMERICANTRIM

Press Release

Fuel Cell Technology Alive in Ohio

American Trim's Research into Forming of Metallic PEM Fuel Cell Bipolar Plates Honored at the 2013 Fuel Cell Seminar & Exposition in Columbus, Ohio

Lima, Ohio – November 13, 2013
Members of the American Trim Research and Development team presented at the 2013 Fuel Cell Seminar & Exposition in Columbus, Ohio this October 21-24. The Fuel Cell Seminar & Exposition has been the premier international gathering of fuel cell enthusiast for the past 37 years. The seminar features close to 250 presenters from universities and manufacturing backgrounds speaking about new discoveries that promote fuel cell technology. These presenters come from a variety of countries giving a global representation of fuel cell technology.

Jianhui Shang, Senior Research Scientist at American Trim, presented his research entitled ***Low-cost Manufacturing of Metallic Fuel Cell Bipolar Plates by Electromagnetic Forming.*** This research focused on achieving commercialization of PEM fuel cells through the development of a high volume and low-cost manufacturing process for bipolar plates. Shang's presentation was awarded by the committee with a first place honor. The selection panel comprised a team from the National Academy of Science along with industry leaders within the fuel cell industry. This honor shows the importance of the research American Trim is doing into low cost forming of PEM fuel cell bipolar plates.

Proton Exchange Membrane (PEM) fuel cells provide an alternative way to provide energy to vehicles which reduces pollution by eliminating the need for gas combustion. This solution is currently stifled by the high cost of building a fuel cell stack; thus the need to find lower cost methods to produce the PEM fuel cells.

To this end, American Trim has been doing extensive research for the past five years on how electromagnetic forming (EMF) is a suitable technology to manufacture metallic fuel cell bipolar plates, because of its low capital cost, flexible tooling and rapid prototyping capability.

EMF is a forming technology that utilizes the power of magnetic force to efficiently and quickly form intricate patterns, such as fuel cell flow fields, in a variety of metals. This technology can enable the forming of less expensive metals as well as supply a lower cost model for forming.

According to Jianhui Shang, Senior Research Scientist at American Trim," The biggest barrier to Proton Exchange Membrane (PEM) fuel cells becoming a mainstream technology is their cost. Fuel cell stack consists of around 42% of the total system cost. Bipolar plates are a major component to the overall cost of a PEM fuel cell stack. By electromagnetic forming, we developed a novel process to manufacture metallic PEM fuel cell bipolar plates to meet the high-volume and low-cost requirements. Electromagnetic forming has broad applications. We develop this technology not only for metallic bipolar plates but also for other applications in automotive, aerospace and military markets."

To find out more about the research into using EMF for forming PEM Fuel Cells we have published the abstract, ***Low-cost Manufacturing of Metallic Fuel Cell Bipolar Plates by Electromagnetic Forming*** on the American Trim website.

About American Trim
American Trim specializes in the forming, decorating, and coating of metal and composite substrates and is a Tier 1 supplier to the transportation and appliance markets. These core competencies are supported and enhanced by American Trim's Design and Research and Development activities ensuring the most advanced and cost effective solutions for its customers.