

# Motors and Motion Meet in St. Louis

## SMMA 2014 Fall Technical Conference Held

Jack McGuinn, Senior Editor

The motors might be small, but the big-brain technology driving these electrical wonders was on full display at the 2014 Small Motor & Motion Association Fall Technical Conference, convened November 4-6 in St. Louis, MO.

SMMA, the manufacturing trade association (120 members strong) that tends to the best interests of the electric motor and motion control industries — including manufacturers, suppliers, users, consultants and universities — played gracious host to a wide array of presenters from an equally diverse range of sources — from academia to the federal government. Like gears, motors are most everywhere, as evidenced by SMMA's membership (consumer-, public interest-, national defense- and commercial-oriented) demographic which includes: appliance; transportation; medical equipment; office automation and computers; aerospace; and industrial automation. The association's mission: To "serve as the principal voice of the electric motors and drives industry" and to provide a forum to "develop, collect and disseminate technical and management knowledge."

"Collect" and "disseminate" indeed; check out this sampling of Abstracts of Conference presentations. They reflect the findings of many hours, days, months — maybe years in some cases — of pre-competitive R&D conducted in conjunction with — and on behalf of — SMMA's members. Even a cursory glance confirms that many of these presentations — some works-in-progress — conjure and explicate new motor-and-motion technologies attending numerous applications/industries of intrinsic value and importance of some kind to various sectors of the U.S. economy and security. Such as:

**The Use of Thin Lamination Materials in Motors.** Kamran Ramezani, President, Ramezani and Associates.

**Fluorinated Greases for Extended Bearing Life in Motors.** Carl Walther, Senior Technical Service Engineer, Dupont.

**Designing Small Brushless Servo Motors.** Daniel B. Jones, President, Incremotion Associates Inc.

**Permanent Magnet Motors for Industrial Applications.** Emmanuel B. Agamloh, PhD, Senior Motors and Drives Consultant, Advanced Energy.

**Challenges in the Design of Very High RPM Motors.** George Holling, Technical Director, Rocky Mountain Technologies, Inc.

**Mosolver: Robust Feedback for Harsh Environments.** Don Labriola, PE, President, QuickSilver Controls Inc.

**Smaller - Faster - Hotter: Market Direction and Material Advancements.** Aaron Williams, Project Manager-Machine Applications, Arnold Magnetic Technologies.

**Magnetic-Mechanical Co-Simulation for Electric Machines.** Adrian Perregaux, Consulting Representative, Infolytica.



**EMERF PCEMRC Update: Design of Ferrite Assisted Synchronous Motor (Fa-SrnRM) with Aluminum Conductors in Stator.** Research project of the EMERF Pre-Competitive Electric Motor Research Consortium (PCEMRC) with Texas A&M University John Calico, Senior Research Engineer, Moog Components Group, and EMERF President.

**Control Aspects of Various Electric Motors.** Dal Y. Ohm, PhD, President, Drivetech Inc.

**Effects of Magnetic Laminate Processing on Core Losses and Permeability.** Aleta Wilder, PhD, Wilder Innovations LLC and The University of Texas; and Tapan Shah, Tanjore Jayaraman and Stephen Marr, Carpenter Technology Corp., Specialty Alloys Operations.

Meanwhile, as all of this was going on, a handful of short-but-informative motor courses was being presented on-site by industry luminaries. They included:

**Evaluating Motor Power Efficiency in Small and Large Electric Motors.** Instructor: Daniel B. Jones, President, Incremotion Associates Inc., and winner of the 2014 EMERF Award for "Outstanding Contributions (54 years) to the Electric Machines Industry."

**Fundamentals of Brushless DC Motor Design.** Instructor: William H. Yeadon, PE, president of Yeadon Energy Systems Inc. He is the author of many motor-related short courses and editor of the *Handbook of Small Electric Motors*.

**Fundamentals of Materials for Electric Motors.** Instructor: Aleta T. Wilders. Wilder has over 30 years of experience in process development and performance improvement based on materials science & engineering.

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