



CALL FOR PAPERS

“Fractional Horsepower Electric Drives”

The Theme: Today, the most widely deployed electric motor drives are in the low-power range. According to the 2009 IMS research, the world market for motors having a continuous power rating between 1W and 500W is worth \$3018.1 million per year. Small electric machines are used in many fields. Consumer electronics, including desktop computers, palmtops and mobile devices use one or more small power electric drives, while medical and industrial automation account for 39 percent of all small motor sales worldwide. Other applications include the automotive sector, household appliances, aeronautics and robotics. Fractional horsepower machines are also used in microgeneration plants, especially for renewable energy conversion. The perspectives of all these markets are ever expanding. The layout types of fractional horsepower machines and drives are manifold: fractional horsepower drives can be of the induction machine, PM synchronous and DC types, but other, less conventional machine and drive layouts are being developed to the aim of reducing production costs and to improve performances. The research on this subject follows four main directions: unconventional converter layouts, machine layouts, control logic and control techniques are currently being developed. Components with low switching and conduction losses are currently deployed, axial-flux, transverse-flux and tubular-linear machine layouts are used in many applications, ASICs and FPGAs are increasingly used in consumer applications and sensorless control strategies are being envisaged. The push towards the increase of the power density and fault tolerance is prompting a rush towards higher integration and miniaturization of drives.

Topics of interest of this Special Section include, but are not limited to:

- Power converter topologies for fractional horsepower drives
- Drive control methodologies
- Fractional horsepower electrical machine design, construction and verification
- Dedicated control logics
- Microgeneration
- Fault tolerant drives.

Manuscript Preparation and Submission

Follow the guidelines in “Information for Authors” in the IEEE Transaction on Industrial Electronics <http://tie.ieee-ies.org/tie/>
Please submit your manuscript in electronic form through Manuscript Central web site: <http://mc.manuscriptcentral.com/tie-ieee>.
On the submitting page #1 in pop-up menu of manuscript type, select: “SS on Fractional Horsepower Electric Drives”.

Timetable

Deadline for manuscript submissions	May 31, 2010
Information about manuscript acceptance	November 2010
Estimated publication date	January 2011

Guest Editors

Carlo Cecati, University of L’Aquila, Department of Electrical and Information Engineering, L’Aquila, Italy,
email: carlo.cecati@univaq.it

Fabrizio Marignetti, University of Cassino, Department of Automation, Cassino, Italy
email: marignetti@unicas.it

Editor-in-Chief:
chow@ncsu.edu

Mo-Yuen Chow
Tel: +1-919-515-7360

Journal Administrator:
tieadm@auburn.edu

Sandra McLain
Tel: +1-334-844-1887

North Carolina State University, ECE Department, Raleigh, NC 27695-7911, USA