SINCE THE PUBLICATION of the first Special Section on “Multiphase Machines and Drives” in the IEEE Transactions on Industrial Electronics in May 2008, the pace of developments in this area has further accelerated, especially in relation to applications where the highest overall system reliability and/or high power quality are required (e.g., more-electric transportation systems and remote offshore wind power electricity generation). As a consequence, substantial new knowledge has been generated with a high number of published papers during the last six years. However, this does not mean that the multiphase machines and drives area has reached the state of maturity. The difficulties in extending the three-phase conventional modulation techniques or control structures to multiphase systems, the limited work on the multiphase machine design and estimation of the electrical parameters, and the fault detection and isolation in combination with post-fault control strategies, are just some of the areas where there appears to be a scope for substantial new developments.

Editors invite original manuscripts presenting recent advances in these fields with special reference to the following topics:

- Design, finite-element analysis, and manufacturing of multiphase induction and synchronous machines
- Modelling of multiphase machines
- On-line and off-line parameter estimation techniques for multiphase machines
- Design and topologies of multiphase power electronic converters
- PWM strategies for multiphase power converters, including modulation of matrix and multilevel multiphase power converters and converter topologies for open-end-winding multiphase drives/generators
- Control strategies for multiphase drive systems, including vector, direct torque, direct power, predictive and sensorless control methods
- High-torque density multiphase motors and multi-motor drives
- Fault-tolerant operation of multiphase machines, including fault detection and isolation
- Multiphase generators for wind energy conversion systems and other applications
- Topologies and control of multiphase generators for remote offshore wind electricity generation
- Innovative methods of use of additional degrees of freedom, available in multiphase systems
- Applications of multiphase variable-speed drives and generators in traction, electric and hybrid electric vehicles, ‘more-electric’ aircraft, marine propulsion, offshore wind energy generation, other renewable electric energy generation plants, and general high-power industrial processes

Manuscript Preparation and Submission

Check carefully the style of the journal described in the guidelines “Information for Authors” in the IEEE-IES website: http://www.ieee-ies.org/publications.

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On the submitting page #1 in pop-up menu of manuscript type, select: “SS on “Multiphase Machines and Drives - Revisited” Energy Systems”, then upload all your manuscript files following the instructions given on the screen.

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