

Special Issue

Advanced Control Strategies for Multiphase Induction Generators: Design, Optimization, and Application

Message from the Guest Editors

To meet this challenge of producing continuously increasing quantities of electrical energy, the new generator types, whether they are low or high power, will have to ensure continuity of service by being ever more fault-tolerant. A suitable solution to increase the reliability of a generator is to use a multiphase machine with symmetrical or asymmetrical structure. Indeed, with this configuration, an electrical fault on the machine or on the converter does not induce the shutdown of the electrical energy production, since three phases are remaining; this lies in contrast to classical solutions designed around three-phase machines. Therefore, advanced control strategies must be applied to multiphase machines to cope with this unwanted behavior during fault mode. This Special Issue focuses on the development of fault-tolerant advanced control strategies for multiphase induction generators, whether they are low or high power. Contributions may concern, for example, self-tuning, intelligent control, fuzzy control, sliding mode control, or predictive control techniques, among others. Particular attention will be paid to the experimental applications of the proposed control techniques.

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