Special Issue

Superconducting Machines Performance Optimization

Message from the Guest Editor

Superconducting machines are being considered and proposed for high-power-density or high-torque-density applications, such as propulsion motors for aviation and marine and power generators for wind turbines. The method of designing superconducting machines has not yet been agreed upon since there are many options under consideration, such as partial or full superconducting, iron or ironless core, distributed or concentrated windings, various superconductor types and their prices, cryogenic cooling methods, etc. It is necessary to devise the best designs for certain conditions. Otherwise, this technology will be unable to advance to commercialization. Identifying the best designs requires the optimization and quantitative comparison of the optimum designs of all the possible options. However, optimization of superconducting machines is rather challenging since analytical methods may not be sufficient and finite element methods may be involved in the optimization program.

Guest Editor

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