Half-day workshop

Fault Management and Reliability in Power Electronic Converters

مدیریت خطای قابلیت اطمینان در مبدل های الکترونیک قدرت

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Description:
In power electronics applications, reliability has been and will continue to be one of the important performance factors in many applications. To address the challenges, power electronic engineers and scientists have started to apply various reliability tools for reliability prediction and reliability oriented design for power electronic converter systems. Several strategies to improve reliability of power electronic systems and design for reliability for power electronic systems have been presented in the last few years. Respective research in different applications is also presented such as three phase converters for aircraft, power inverters for railway traction and hybrid electric vehicles. Besides these applications the last decade also saw much pioneering work on the reliability of power converters for wind turbines and inverters for photovoltaic systems.

Main topics:
- Reliability engineering in power electronic converter systems
- Anomaly detection and remaining life prediction for power electronics
- Reliability of DC-link capacitors in power electronic converter
- Reliability of power electronic packaging
- Modeling for the lifetime prediction of power semiconductor modules
- Minimization of DC-link capacitance in power electronic converter systems
- Wind turbine systems
- Active thermal control for improved reliability of power electronic systems
- Lifetime modeling and prediction of power devices
- Power module lifetime test and state monitoring
- Fault tolerant adjustable speed drive systems
- Reliability of power conversion systems in photovoltaic applications

Nader Sargolzaei was born in Mashhad, Iran. He received the B.Sc. and M.Sc. degree from Ferdowsi University of Mashhad, Iran, and Ph.D. degree from Sharif University of Technology, Tehran, Iran all in Electrical Engineering, he is assistance professor in Electrical Engineering Department, Mashhad Branch, Islamic Azad University where he taught various courses and conducted research on power systems and electrical machines. His main research interests include fault management and reliability of power systems, distributed generation systems, Electrical Machines, stochastic processes.