IRMC Tutorials

Monday June 26th

Partial Discharge Theory & Interpretation - $150.00

Topics covered:

- Partial discharge phenomena and their causes in stator windings
- PD theory, PD detection, sensor installation, and calibration procedures
- Collection of off-line and on-line PD data
- PD characteristics of stator-failure mechanisms
- Case studies from continuous monitoring equipment and portable instruments

Instructor: Howard Sedding

Dr. Howard Sedding graduated with a BSc in electrical and electronic engineering at the University of Strathclyde and then acquired MSc and PhD degrees. His PhD Thesis was on the degradation of epoxy mica insulation used in rotating machines.

Stator Endwinding Vibration: Causes, Off-line Tests and On-line Monitoring - $150.00

Topics covered:

- Introduction to vibration
- Turbo Generator design considerations
- Forces in stator winding
- Failure mechanisms
- Offline testing
- Online monitoring

Instructor: Aaron Doyle

Aaron completed Bachelor of Science (B.Sc.) in Mechanical Engineering from the University of Calgary Schulich School of Engineering in 2008 and became a recognized as a Professional Engineer (P.Eng.) by APEGA (Association of Professional Engineers and Geoscientists of Alberta) in 2011. His specialty is vibration analysis including impact testing and modal analysis, Operating Deflection Shape (ODS) and Motion Amplification (MA) analyses, transient analysis for startups/shutdowns, dynamic balancing, torsional measurement and analysis.

Thursday June 29th

Advance Partial Discharge Interpretation - $150.00

Topics covered:

- PD interpretation one step further with pulse density linear plots to identify cross-coupled PD activity
- phase to phase activity, and general pulse phase pattern recognition
- behavior of PD activity over time
- defining reliable alerts based on PD activity
- Advanced Summary Numbers (ASN) and their diagnostic value
- PD interpretation on data where two or more different types of failure mechanisms are present

Instructor: Greg Stone

Dr. Greg Stone was one of the developers of on-line partial discharge test methods to evaluate the condition of the high voltage insulation in stator windings. From 1975 to 1990 he was a Dielectrics Engineer with Ontario Hydro, a large Canadian power generation company. Since 1990, Dr. Stone has been employed at Iris Power L.P. in Toronto Canada, a motor and generator condition monitoring company he helped to form.

AC Machine Stator Winding Maintenance - $150.00

Topics covered:

- Stator winding theory and construction for AC Motors and Generators
- Why does a stator winding fail?
- Preventive and predictive maintenance strategies
- Online monitoring in predictive maintenance
- Winding inspection and offline testing in preventive maintenance
- Typical winding repairs
- Time for a rewind? What your spec needs to include

Instructor: Nick Stranges, Mladen Sasic

Dr. Nick Stranges completed his Bachelor of Electrical Engineering degree at McMaster University in Hamilton, Ontario before obtaining an M. Eng and PhD in Electrical Engineering at McMaster's Power Research Laboratory. He worked in the Engineering Department of the Large Motor Technology group for General Electric in Peterborough, Ontario for 22 years prior to joining Andritz Hydro in 2018 as a Hydrogenerator Design Engineer. Dr. Stranges joined Iris Power in 2021.

Mladen Sasic has twenty years of international experience in design, production, installation, testing and maintenance of Power generation, transmission and distribution equipment. He obtained a Bachelor of Science degree in Electrical Engineering-Electrical Power Engineering from the University of Sarajevo.