

Master Thesis– Further Development of a Tool for Partial Discharge Inception Voltage Prediction in Electrical Machines for Aerospace Applications

Key accountabilities:

- Conduct literature research on available models for PDIV prediction from the basis of an already available literature set
- Further development of the current existing tool by coupling an FEA electrostatic environment (FEMM) controlled through Matlab with relevant gas discharge equations (e.g. Streamer or Townsend) for PDIV estimation
- Execution of experimental measurements in-house to validate / correct the developed models
- Sense of ownership of the given experimental tasks, taking initiative and carrying out experimental work with minimal supervision
- Documentation and reporting results insightfully

Qualifications:

- Electrical or Materials Engineering student, alternatively Natural Sciences
- Experience in electrical laboratories
- Familiarity with electrical testing equipment (transformers, signal generators, etc.) as well as with measurement equipment (oscilloscopes, voltage dividers, etc.)
- Experience in the processing of materials such as silicone rubber or epoxy resins
- Experience with simulation software (Matlab & Simulink)
- Solid knowledge of electrical machine architecture
- Knowledge in the basic use of workshop tools
- Strength in decision making and priority setting
- Strength in problem solving
- Fluent in either German or English, good command of English writing

If you are interested, please contact Dr. Diego Machetti <Email: Diego.Machetti@Rolls-Royce-Electrical.com Mobile: +49 (0)1522 1747131>.