

**Virtual Prototyping & Virtual Testing of Electrical Machines**  
**covering design, analysis and optimization of**  
**Motors, Generators, Busbars, Switchgears**  
**on 8th May 2010 @ Bangalore**

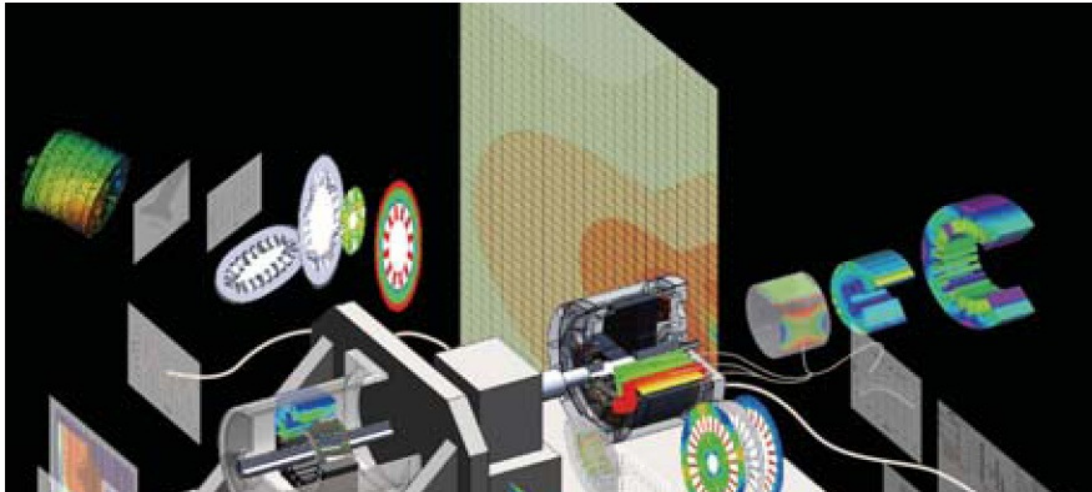
**For PG/UG Students and Faculty members of Electrical Engineering**

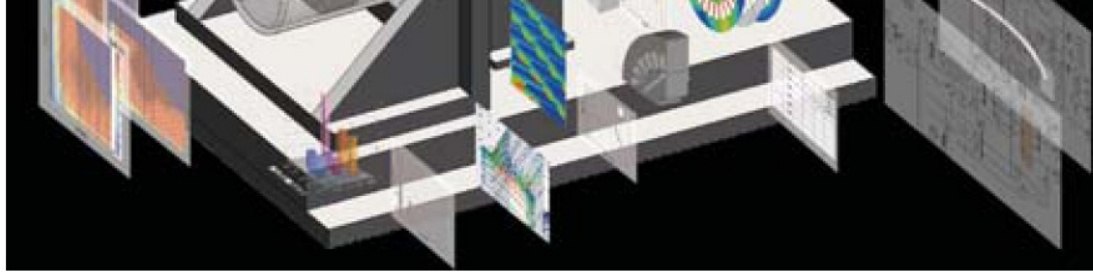
**Preamble:**

Industry today is fast moving towards virtual product development, virtual prototyping and virtual testing to reduce the time and cost of development. ProSIM is a R&D computer simulation technology based R&D company providing engineering solutions to complex industrial problems. ProSIM has a tie up with M/S Japan Research Associates, makers of Finite Element Analysis based electro-magnetic-mechanical simulator JMAG.

Today, FEM analysis based design verification is an increasingly common practice in the industries in India as well. ProSIM is striving to bridge the gap between the academia and the industry, by conducting a series of awareness seminars.

There will be follow up **Hands on Workshop for Interested Students and Faculty at Later Date**. Those attending the workshop will be provided a **free license of JMAG for one month to carryout their projects**. **There might be opportunities for selected PG students to do there project at ProSIM**. **For registration details visit [www.pro-sim.com/events.html](http://www.pro-sim.com/events.html)**





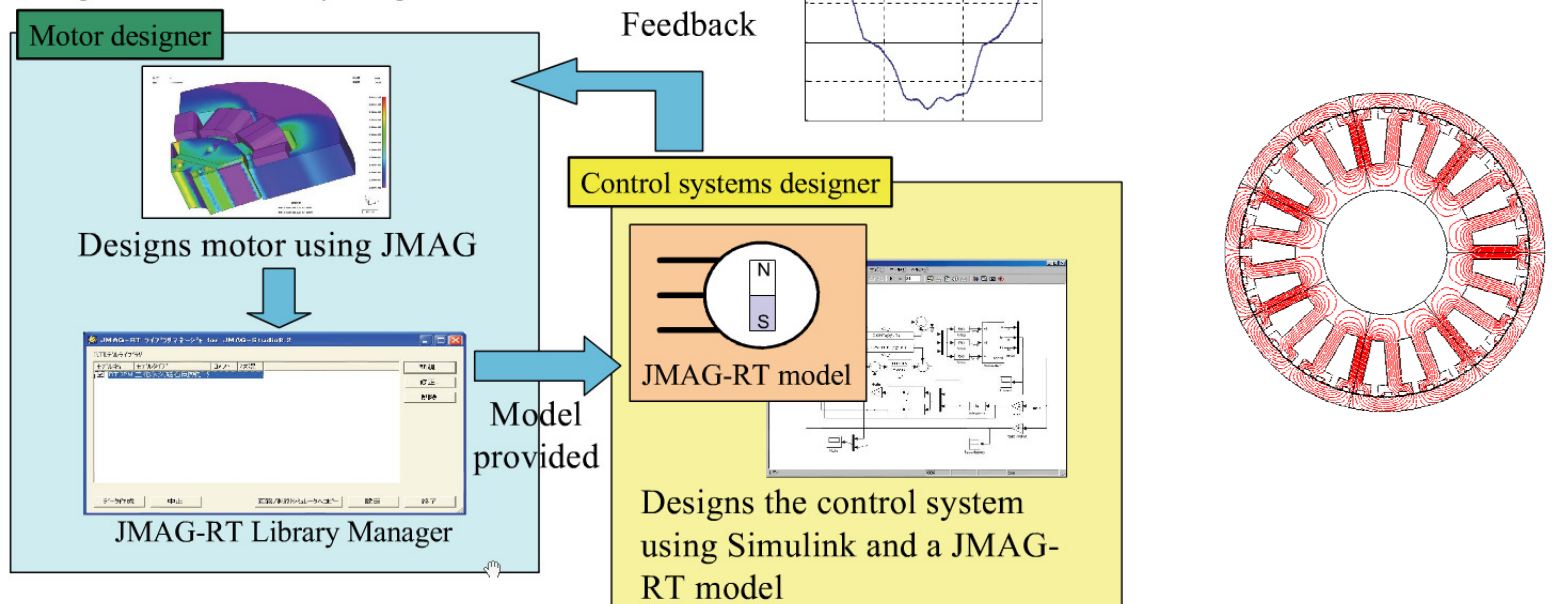
### What happens in the seminar?

Participants will be exposed to

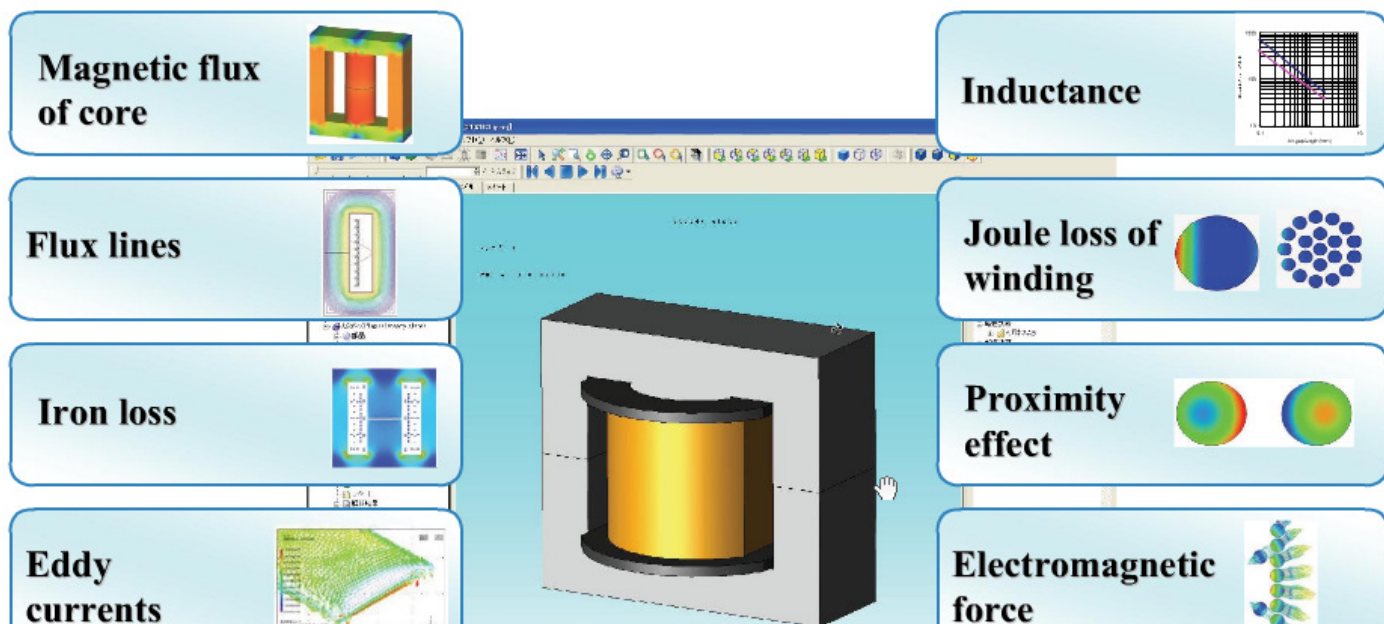
- > Power of simulation based design .
- > Several industrial case studies will be presented.
- > Theory of design, and design verification as well as design optimization of electrical machines will be presented.
- > Real time control and SIL/ HIL demonstrated
- > Procedure to build virtual prototype models demonstrated
- > Procedure for virtual testing and design optimization demonstrated

### Motors / Generators (synchronous / asynchronous)

- The motor design and control design can be engineered concurrently using JMAG-RT



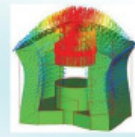
### Transformers (3-phase, 1-phase, Air Core, Iron Core)



Temperature distribution



Vibrations



## Induction Heating

Surface temperature distribution

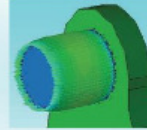


Leakage magnetic field

Interior temperature distribution



Magnetic flux density



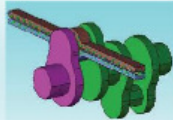
Speed the temperature rises

Heat generation density



Inductance

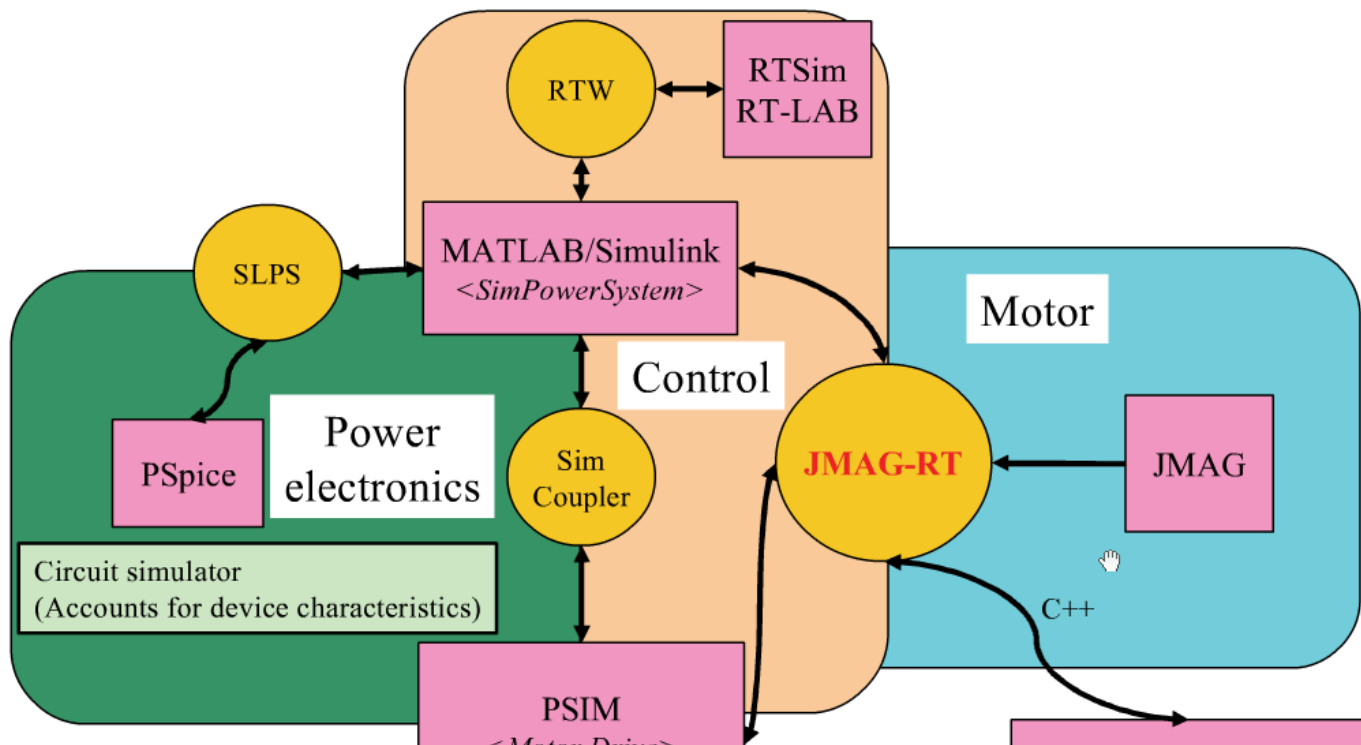
Current density distribution



Efficiency

Electromagnetic force

## Power Electronics



**Participants will get an insight into the industrial practice of the design procedure in the electrical machinery industry.**

### About Organizers:

#### **ProSIM R&D Center (www.pro-sim.com)**

ProSIM is a premier industrial R&D and engineering services company. ProSIM is assisting the industries in India, and abroad by adopting a variety of computer simulation techniques for their innovation, design verification, optimization, value engineering, failure analysis, virtual prototyping and virtual product development.

#### **ProSIM has centers of excellence in**

- > Design, FEM analysis, (including electro-magnetic analysis, seismic analysis, etc)
- > Multi-Body Dynamics
- > Manufacturing Process Simulation
- > Fatigue, fracture and durability
- > Materials modeling and materials technology
- > Multi Disciplinary Optimization

### Contact Details for Registration

#### **Registration Fee**

**Students : Rs 250.00**

**Faculty : Rs 500.00**

Registration fee to be paid in the form of DD/Cash/Cheque in favor of "**ProSIM R&D Pvt Ltd., Bangalore**" Payable at Bangalore

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