

Real Time Simulation Lab (RTSL)

Smart Distribution Research Lab (SDRL)

Location

CPH 2382A

E5 5008

Management

Director: Ehab El-Saadany (@uwaterloo.ca; x33035)

Lab tours: Maher Abdelkhalek (maher.abdelkhalek@gmail.com ; x37056)

Users

- Graduate students
- Power Group members

Research

- Real time simulation and hardware in the loop studies
- Power quality studies
- Wind emulator, electronic interfacing, controllable electronic loads, and harmonic generators and analyzers

Selected Projects

Equipment

- Two RTS housing cabinets
- Three 12-core 3.33GHz each RTS PC's
 - Key features:
 1. Real-Time Digital Simulators and control prototyping systems for power grids, power electronics, motor drives and other mechatronic systems.
 2. Design and test controllers for a wide variety of applications including small power converters, hybrid electric drives, large power grids and renewable energy systems
- Compact cabinet for high levels of AC and DC power supply.
 - Key features:
 1. 30kVA
 2. Combines AC/DC source and power analyzer functions
 3. Powerful output transient generation

- 4. Arbitrary waveform generation
- 5. Harmonic analysis of Voltage and Current
- Host computer Intel® i5 CPU 4.00GB (RAM)
 - Includes:
 1. 14-core license for RTS
 2. Matlab (fully integrated with RTS)
 3. GAMS
 4. PSCAD
- Smaller current and voltage supplies (AC & DC)
- Measuring equipment (Voltage, Current, and Power AC and DC)
- Controllable AC/DC loads
- Harmonic Analyzer
- Controlled High power function generator
- Wind Emulator

Supporting Partners

- NSERC-CRC (support: funding)
- CFI/ ORF (support: funding)

Access Rights

Researchers

- Contact Professor El-Saadany

General Public

- None (Lab is not for general public)

If you haven't already supplied a list of key equipment in your lab, please list them below.

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