

# Canadian Research Chair in Electrical Power Conversion and Power Electronics CRC-EPCPE

*Titular*

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<http://www.etsmtl.ca/zone2/recherche/chaire/>

# Problematics

- A progressive increase of energetic consumption, at a residential scale as well as at commercial scale,
- Difficulty of providing energy to ensure social development,
- Extraction of the energy with a minimum of social and environmental impact,
- Developpement of new transmission lines, more and more problematic,
- Atmospheric pollution,

# Strategic importance

- A better utilization of the available energetic resources,
- A better integration of the alternative and energetic resources (solar, hydrogen, wind energy, etc.),
- The need for new solutions to increase the energetic efficiency,
- Nearly 70 % of the electrical energy is transferred by static power in the industrialized countries,
- A new technology is necessary to address the energetic needs,

# Objectives of the chair: technologies to be developed

- Design and implementation of **new efficient techniques of conversion** of the electrical energy,
- Reduction of the **pollution and interferences** generated by the industrial loads on both electrical grid and environment,
- Reduction of **losses** in electrical power conversion,
- Developpement of control techniques to increase **the operation safty** of power converters,
- Technologies transfer towards active entrerprises in the following fields: advanced electric propulsion, telecommunications, heating by induction, lighting, power supplies, non-dissipative loads, energy distribution, renewable energies, etc.
- **Skilling of a new generation of engineers** specialized in the domain of energy technologies.

