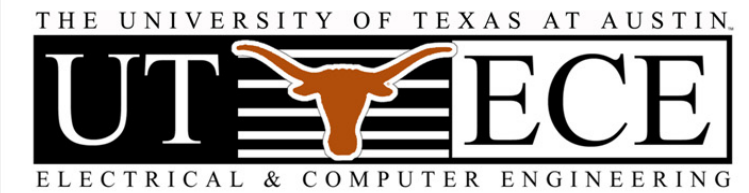
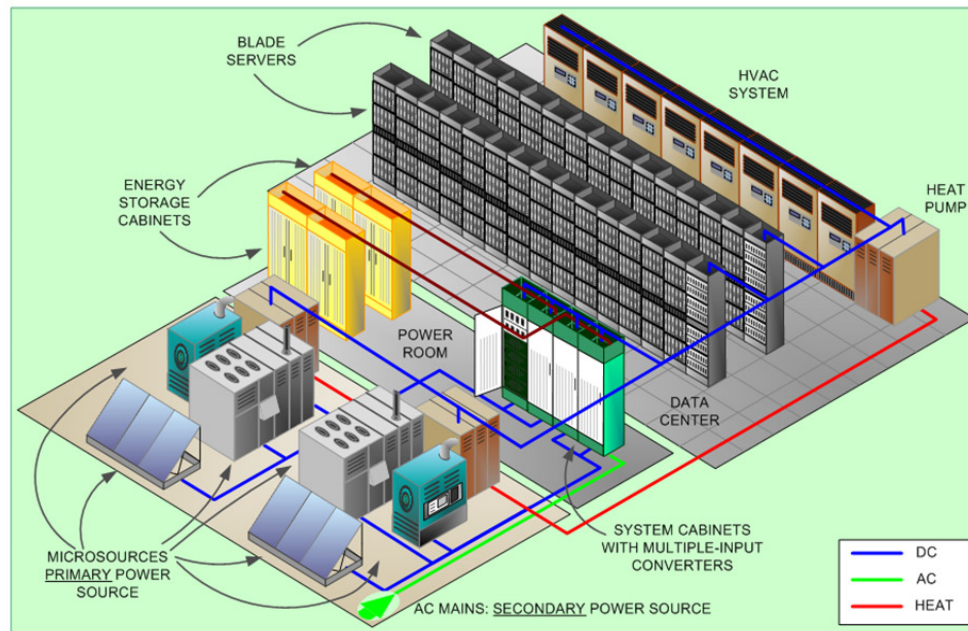


# The University of Texas at Austin Power Electronics Research Group (PERG)

Prof. Alexis Kwasinski  
Leading Investigator



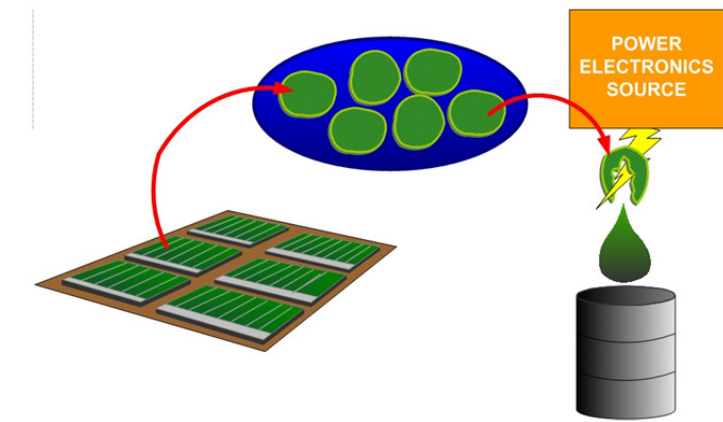
- **Vision:** Power electronics provides enabling technologies to address energy crisis and power availability during critical situations
- **Objective:** To develop highly available, flexible and efficient power systems and energy conversion interfaces without compromising cost.



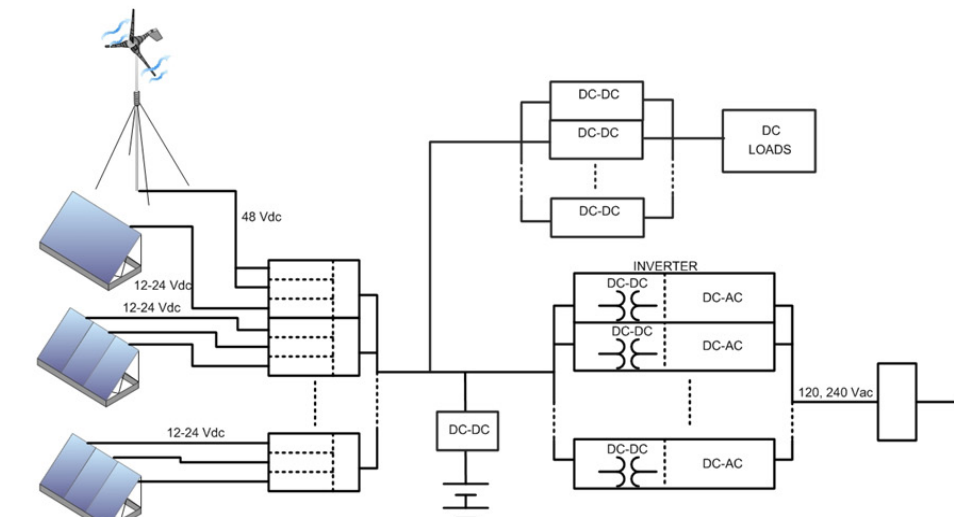
*Highly efficient and available data centers with integrated HVAC systems*

- Selected topics:
  - Renewable and alternative energy systems
  - Energy storage integration
  - Distributed generation technologies
  - High-performance controls
  - Multiple-input converter topologies
  - Grid interaction
  - Distributed architectures

- Selected applications:
  - Telecommunication sites and data centers
  - Residential power and utility power distribution
  - Transportation
  - Voltage regulation modules and energy harvesting
  - Disaster hardening, mitigation, and recovery



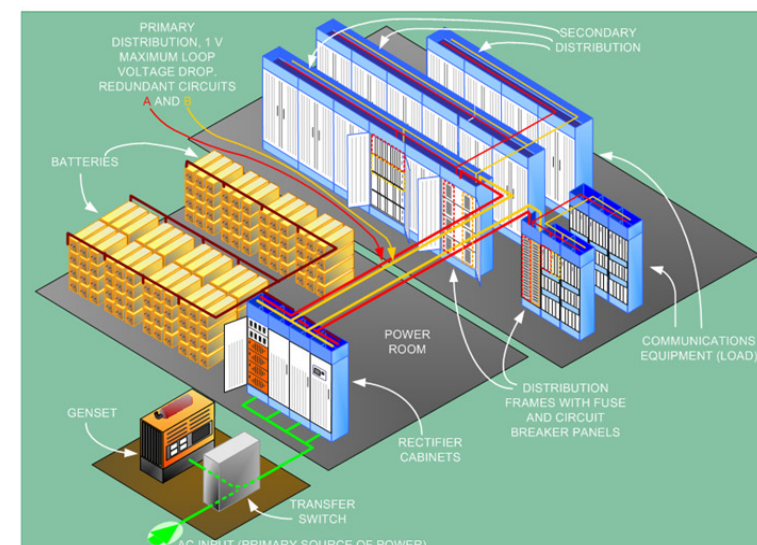
*Power electronics for algae oil production*



*Renewable energy systems integration, design, operation and control*



*Research facilities at the ENS building*



*Telecommunication sites evolution into microgrid-based architectures*

