

UTRCI Research Scientist, Power Electronics / Motor Drives

Grade: L6-L5

United Technologies Research Center (UTRC) delivers advanced technologies to the businesses of United Technologies Corporation (UTC). UTC (NYSE:UTX) is a diversified company that provides a broad range of high-technology products and services to the global aerospace and building systems industries. UTC's commercial businesses are Otis elevators and escalators and UTC Climate, Controls & Security, a leading provider of heating, ventilation, air conditioning, fire and security systems, building automation and controls. UTC's aerospace businesses are Sikorsky Aircraft Corporation and the new UTC Propulsion & Aerospace Systems, which includes Pratt & Whitney aircraft engines and UTC Aerospace Systems aerospace products.

UTRC partners with UTC business units and external research organizations to expand the boundaries of science and technology through research and innovation, delivering technology options that meet and anticipate the needs of the marketplace.

Founded in 1929, UTRC is located in East Hartford, Connecticut (U.S.), with an office in Berkeley, California, and research and development centers in Shanghai, China, and Cork, Ireland.

United Technologies Research Centre Ireland, Ltd. (UTRCI) is UTRC's European research hub, created to fully leverage a global network of innovation. UTRCI works with universities, research institutes, and industry throughout Europe and beyond to further its research and development mission. UTRCI invites qualified individuals to apply for the following position in its Cork office. A competitive compensation and benefits package will be provided to the successful candidates.

Learn more @ www.utrc.utc.com

Job Responsibilities

UTRCI seeks candidates with expertise in developing and delivering creative, integrated solutions in power electronics, electrical motors, and motor drives. In this position, researchers will work as part of multidisciplinary teams in developing new technologies that will provide a competitive advantage for UTC's business units.

The ideal candidate is a self-starter who works well in an international teaming environment, is extremely well-organized and has excellent interpersonal, leadership and communication skills. Besides technical excellence, an entrepreneurial attitude towards innovation is essential.

Education

A minimum of a doctoral degree in Electrical or Electronics Engineering, or a master's degree with a minimum of 5 years of industrial or academic experience in a field relevant to the design and operation of power conversion systems and/or electrical machines, drives, and actuation systems.

Essential Experience/Qualifications

- Expert knowledge in at least one of the following: (1) High density power converter design, (2) Electrical machines & motor drives, (3) EMI analysis & filter design, (4) Wide band-gap semiconductor devices, (5) Isolated electrical power generation & distribution systems.
- Expert in modeling, simulation, and validation of power electronics and related systems, including application of hierarchical and model-based design approaches, hardware build and test, and use of rapid prototyping / HiL systems (e.g. dSPACE, OpalRT, NI PXI).

- An applied background in more-electric aircraft systems such as electro-mechanical / electro-hydrostatic actuation, electrical / thermal system co-design, and/or novel electrical system architecture development will be a significant plus.
- Software skills preferred: C, C++, MATLAB/Simulink, PSIM, OrCAD, Saber, Modelica/Dymola, LabView, FPGA/DSP programming, PCB design, FEA / multiphysics tools (EM / thermal).

In addition, experience in the following areas will be highly regarded, but not essential:

- Development and application of advanced algorithms for fault diagnostics and prediction in power electronics / motor drives.
- Aircraft electrical architecture trade-space exploration.
- Model-based systems engineering, auto code generation, virtual prototyping.
- Aircraft hardware / firmware / software certification.

The successful candidate will work as part of a distributed multidisciplinary team, and will be expected to:

- Develop and execute technology research plans to successfully achieve desired technical outcomes within time and budget constraints.
- Demonstrate technical excellence in research activities and creative thinking that leads to innovative concepts.
- Assist in developing proposals for externally-funded research in the area of power electronics and power systems for building systems and aerospace applications, and collaborating with external partners such as companies, national labs and universities.
- Demonstrate excellent communication skills and provide timely, accurate reports and presentations to senior management and functional teams.
- Actively contribute concepts to technology roadmaps in areas related to power electronics technologies applied to aerospace and industrial systems, helping expand the portfolio of technology maturation projects.
- Enjoy working in the lab, implementing and testing control strategies, as well as designing and testing hardware prototypes.
- Software skills preferred: C, C++, MATLAB/Simulink, PSIM, OrCAD, Saber, Modelica / Dymola, Lab View, FPGA/DSP programming, PCB design.
- Some travel required.

Additional Comments

This position is based at UTRC's European hub in Cork, Ireland. To be eligible to apply, candidates must be legally entitled to work and reside in Ireland.

Candidates can apply online at:

<https://www.goodrich.apply2jobs.com/ProfExt/index.cfm?fuseaction=mExternal.searchJobs&searchCountryID=340>

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