Mainstream Engineering Corporation, is a solutions-oriented research, development and manufacturing organization founded in 1986. Our mission is to develop and implement emerging technologies into military and private sector products that provide a technological advantage. Areas of expertise include thermal control, energy conversion, power electronics, turbo-machinery, chemical technology and materials science.

For more info on our firm, please visit us on the web at www.mainstream-engr.com/research/powerelectronics

Mainstream offers competitive salaries and complete benefits packages, including medical, dental, life, 401(k) with employer match, paid training and continuing education.

Minimum Requirements:  
BS, MS or Ph.D. in Electrical Engineering  •  GPA > 3.3 at all degree levels  •  U.S. citizenship  •  Internship experience required for entry level candidates

JOB DESCRIPTION

ELECTRICAL POWER and CONTROLS ENGINEER

Due to continued growth, our firm is seeking to employ talented Electrical Engineers for a variety of roles including power electronics design, control algorithm development, embedded system design, and analog circuit design. Electrical Engineers play a critical role in developing not only our power electronics products, but provide vital sub-system design support for products related to thermal control and energy conversion. Successful candidates will provide innovative engineering in the design and layout of PCBs, programming of microcontrollers, development of control algorithms for power converters, work with state-of-the-art wide-bandgap semiconductor devices, and design analog circuitry.

Specific Duties and Competencies:

- Design and test power electronic converters (AC-DC, DC-AC, DC-DC) from 1 kW to 150 kW
- Design and test high speed (10 kRPM - >150 kRPM) motor drives
- Design, implement, and test advanced digital control algorithms, advanced digital filtering techniques, and the general control MIMO systems
- Design and test power stages, sensor electronics, and gate drives circuits for SiC and GaN semiconductors
- Design and test high power SiC and GaN semiconductor modules that incorporate advanced cooling schemes
- Design, layout, fabricate, and test printed circuit boards
- Design, build, and test digital control systems using microcontrollers, DSPs, and FPGAs

Mainstream Engineering is a research and development firm ideally located on the Florida's Space Coast, convenient to all of Florida's desirable activities. Several unique aspects of employment at Mainstream Engineering are:

- Opportunities to explore your own interests, manage your own projects, diversify your experience as well as carve out a niche for yourself in applied research and development
- Publish technically and peer-reviewed manuscripts as well as patent innovations
- Exposure to the full product development process from conception to manufacturing
- Potential to advance technologies beyond the current state of the art
- Freedom of movement between multiple projects and technology areas
- Work on challenging problems for government and private-sector clients

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