

ARBOR PHOTONICS

EMPLOYMENT OPPORTUNITY

Fiber Laser Design Engineer

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The position of Fiber Laser Design Engineer will be a key member of the research and development team with primary responsibility for developing and utilizing theoretical models to predict and analyze the performance of novel fiber designs, state of the art fiber lasers and amplifiers and fiber laser systems. Key objectives for this position are:

1. **Develop and refine numerical model of light propagation in 3C fibers based on fundamental electromagnetic theory and material science.**
2. **Utilize 3C numerical models to guide improvements for existing fiber designs, and to conceive and develop novel fiber designs.**
3. **Develop and refine numerical models for 3C fiber laser and amplifier performance that include effects such as gain saturation, SBS, SRS, SPM and quenching.**
4. **Develop numerical models into useful simulation tools that are readily usable by other optical engineers.**
5. **Utilize raytracing and finite element analysis software to assist in the design and development of fiber optic amplifiers and subsystems.**
6. **Contribute expertise to proposal writing and execution of advanced development activities associated with government or other customer sponsored projects.**

In this position, you will be part of a focused team headed by a VP of Engineering. The team will drive technology and design choices to create competitive advantage in product performance, cost and time to market. A strong theoretical background grounded with real-world experience is preferred. We're seeking a highly motivated individual who is comfortable and excited about working in a start-up environment.

Qualifications:

- Ph.D. in Electrical Engineering or Physics with a concentration in optics and 3+ years of experience in a research environment. Industrial experience preferred.
- M. Sc. with 8+ years of industrial and academic experience will be considered.
- Strong background in programming, algorithm development and numerical methods.
- Experience using and deep understanding of Maxwell's equations.
- Familiarity with optical modeling software and methodologies including ray tracing, FDTD and BPM.
- 3+ years of experience with commercial waveguide, fiber optic and/or electromagnetic propagation simulations.
- Demonstrated understanding of the physics that limit fiber laser performance: SRS, SBS, SPM, surface and bulk damage, and thermal mechanisms.
- Familiarity with Comsol, raytracing, Matlab, Labview, and thermo-mechanical FEA analysis is desirable.
- Must be self-motivated with good interpersonal and communication skills

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- ❑ Must be able to work as a team member and across functional boundaries inside the company.

Key Responsibilities:

- ❑ Contribute to development of numerical optical propagation algorithm for 3C fibers that is being developed from first-principle Maxwell equations.
- ❑ Develop the numerical propagation algorithm into a general software tool that can be used by other engineers.
- ❑ Refine existing 3C fiber designs and develop 3C fiber designs with larger mode sizes and novel functionality.
- ❑ Refine numerical models for simulating fiber laser and amplifier performance. Work with the R&D team to develop optimal laser and amplifier architectures for 3C fiber.
- ❑ Utilize commercial optical software packages to investigate designs and issues relevant to ongoing R&D efforts.
- ❑ Contribute expertise to developing concepts for proposals and executing advanced government or customer sponsored projects.
- ❑ Work independently and complete complex tasks without step-by-step instructions while working with team to meet project goals.
- ❑ Work to meet schedule and budget requirements of projects.

This position will be located in the Ann Arbor, Michigan area. Relocation is available for the right candidate and salary will be commensurate with qualifications.

About ARBOR PHOTONICS, Inc.

Arbor Photonics is committed to providing high power laser solutions that increase productivity and enable new capabilities for advanced laser materials processing and defense applications. We are developing highly reliable fiber lasers that feature an unmatched combination of beam quality and optical power. Our proprietary 3C fiber technology vaults the performance of single-mode fiber laser systems into the domain of average and peak power levels currently attainable only with multimode systems that have suboptimal beam quality. 3C fiber lasers can enable dramatic improvements in throughput and processing speed in microelectronics manufacturing, solar cell processing and industrial materials processing applications.