Modeling Expert in Fiber Optics
for Simulation Software Engineering

VPIphotonics, a premier provider of professional simulation software for optical communication systems, offers a mid-level position in our R&D team.

Responsibilities

- Development of mathematical models for various applications:
  - Single-Mode Fibers for short-reach and long-haul transmission (SMF, NZ-DSF, DSF, DCF)
  - Multimode Fibers MMF (OM3, OM4, OM5) for datacom applications
  - Few-Mode Fibers (FMF) and Multicore Fibers (MCF) for Space Division Multiplexing (SDM)
  - Fiber lasers and amplifiers based on rare-earth doped fibers and Raman amplification in single-mode, few-mode and multicore fibers.
  - Distributed sensing (OTDR, phase-sensitive OTDR, OFDR)
- Model prototyping, testing, documentation, and creation of application examples.
- Contribution to externally funded R&D projects and publications at conferences and in journals.

Skills & Experience

- Experience in multiple areas of the following:
  - Fiber optics theory: chromatic dispersion, polarization-mode dispersion, Kerr nonlinearity, Raman scattering, Brillouin scattering, Rayleigh scattering, coupled mode theory, spatial mode dispersion, mode-dependent loss, light emission by rare-earth ions.
  - Mathematical methods: linear algebra, calculus, complex analysis, differential equations, statistics & probability, discrete-time signal processing, group theory.
  - Numerical methods for optical signal propagation in fibers: Fourier-Domain and Time-Domain Split-Step Methods, PMD description in Jones and Stokes space, numerical integration of ordinary differential equations, root finding, optimization, data fitting.
- General knowledge of photonics, fiber technology, and optical communications.
- M.Sc. or Ph.D. degree in physics or electrical engineering.
- Experience creating mathematical models in Python, incl. NumPy, SciPy, Pandas, Matplotlib.
- Solid writing and presentation skills in English.

Further, we envision that the successful candidate will

- *work in our software development facility in* Lithuania, Poland or Latvia
- be self-disciplined and motivated to work in a team
- combine office and remote work
- have a valid EU residence and work permit

Join our team to work alongside an expert team of modelers and developers addressing the demand of tomorrow's research and industry. VPIphotonics will provide comprehensive training, flexible work hours, and a rewarding international career path.

Salary will be negotiated depending on a candidate's qualifications and experience. If you want to be considered, please send your resume to jobs.devel@VPIphotonics.com.

About VPIphotonics

VPIphotonics sets the industry standard for end-to-end photonic design automation comprising design, analysis and optimization of components, systems and networks. We provide professional simulation software and professional consulting services. Our award-winning solutions are used extensively in research and development by product design and marketing teams at hundreds of corporations and over 160 academic institutions worldwide. For more information, visit www.VPIphotonics.com