

Company: [Attochron LLC](#)

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## POSITION: PHOTONICS TELECOMMUNICATIONS ENGINEER

Location: Lexington, VA [on-site work]

Full-Time Position

Compensation: Negotiable ([SPIE Reference](#))

Start Date: Immediately

Citizenship requirements: US Citizens and Lawful Permanent Residents Only



### Attochron Mission:

Attochron is the world-exclusive developer of Electro-Optical and Photonic technologies using *short coherence length* (SCL) optical sources (including ultrashort pulsed lasers 'USPL') as applied to free-space optical communications (FSOC), remote sensing, ranging (LIDAR) and power-beaming. An Attochron FSOC product is being developed now in response to successful, *real-world* proofs of concept (POC) Attochron performed with Tier 1 US carrier Lumen Technologies, Fortune 10 global retailers and others. Attochron's FSOC technologies have specifically demonstrated the positive aspects of optical communication (high speed, low latency, robust security) while – for the first time in history -- overcoming the key obstacles facing legacy FSO technologies – in particular, mid-to-heavy water aerosols (fog, clouds) and critically: clear air scintillation effects. Attochron is Series A private equity funded and performing real-world field testing while building Prototype pre-production links for distribution to stakeholders in the telecom, government, and aerospace sectors for evaluation and purchase. Attochron seeks team members who can interface cooperatively in a growing small team environment and work diligently in the laboratory/field to support the rapidly evolving product development process. The successful candidate would have an insightful mind, passion for the work, good work ethic and referrals, and a 'get-it-done' attitude.

### Photonics Engineer Job Description:

Attochron seeks a Photonics Telecommunications Engineer who has experience working with optical and high-speed (1-10 GHz+) RF electronic systems in telecommunications applications. The Photonics Engineer will perform testing and development of systems containing optical, electrical, electro-optical, and opto-mechanical components such as:

- Ultrashort pulse and continuous-wave lasers
- High-speed electro-optical modulators
- High-speed avalanche photodiodes
- Gigabit Ethernet network interface cards
- Motorized stages and position sensors

to support the design and validation efforts currently in progress on the prototype systems. The Photonics Engineer will also assist with design/specification decisions to support Attochron's manufacturing and engineering partners as they work to design and integrate components into a finished prototype.

The successful candidate will be able to skillfully use test equipment such as:

- Optical spectrum analyzers
- Optical power meters
- Variable optical attenuators
- Autocorrelators
- Electrical spectrum analyzers
- High-speed oscilloscopes
- Bit-error rate testers
- Network traffic testers
- Various equipment used in conjunction with the above

to examine the performance of components and configurations essential to the success of an Attochron prototype system. The successful candidate will have a deep understanding of optical phenomena and systems, coupled with well-developed troubleshooting and investigation capability allowing them to efficiently address problems and fully understand areas of improvement which need attention in the product development process. The Photonics Engineer should be able to work effectively alone and as part of a small team, able to design rigorous experiments using the scientific method, and skillfully collect meaningful data which supports or refutes proposed design changes.

A Photonics Engineer who can test a configuration, understand its behavior in the wider context of the system's performance, and effectively communicate that information to the rest of the team will be an excellent addition to a small but quickly-growing team at Attochron.

**Key Job responsibilities:**

- Test optical, electrical, & electro-optic components/assemblies with telecom, RF, and optical testing equipment.
- Formulate test plans for manufacturing/engineering partners to perform as part of product development efforts.
- Research and source components for controlled test and subsequent system integration.
- Examine test data collected by Attochron team and its partners to elucidate behavior of device under test.
- Effectively communicate results of investigations especially as they pertain to broader system performance.
- Maintain vital equipment to ensure continued operation of data-acquisition protocols.
- Formulate design concepts to advance performance of prototype system.
- Participate in discussions with design/engineering partners and stakeholders to advance prototype testing and development activities.
- Use software tools like Labview, Matlab, and Python to operate test setups and facilitate collection + processing of data.
- Writing reports on processes and accomplishments.

**Experience Desired:**

- Undergrad degree in Electrical Engineering, Physics, Optics, Photonics, or related field with deep practical experience (at least 2+ years significant internship/research and/or prior work experience) relevant to high-speed data communication systems.  
or
- Master's Degree with relevant thesis work or 1+ years prior work experience.  
or
- PhD with domain knowledge and relevant thesis work.

Additionally:

- Strong problem solving, technical, math and science skills.
- Strong written and verbal communication.
- Team player and self-starter