

Position: Nanofabrication Scientist
Job Status: Regular Full Time
Department: R&D
Location: Burnaby, BC, Canada
Reports to: Director, Research & Development

The Position:

Reporting to the Director, Research & Development, the Nanofabrication Scientist will be responsible for developing and executing nano and micro-fabrication process steps for optical devices in a cleanroom environment. The position is heavily hands-on and requires the ability to attentively follow cleanroom protocols and in-house standard operating procedures. The Nanofabrication Scientist will have the opportunity to contribute to the team's research by developing new fabrication procedures or improving the previously developed process steps. Nanotech's R&D Team will draw on your strong expertise in the cleanroom as well as your critical thinking and obsession for documentation to develop reliable nanofabrication processes. The position involves detailed execution of successive nano-fabrication processes ranging from wet-chemistry to electron beam lithography. A record of experience in different areas of nanofabrication is considered an important asset.

Key Responsibilities:

- Nanofabrication – Learning and developing micro and nano-fabrication processes while operating in a Class 100 cleanroom environment, including operating a JEOL JBX-6300 100kV EBL system.
- Process development – Conduct experiments to improve, discover, and test nano/microfabrication processes. Resolve technical process issues with innovation and pragmatism, while mitigating delay and process waste.
- Device and material analysis – Characterizing nanostructures and materials in and out of a cleanroom. Collecting and measuring data and developing characterization models.
- Maintenance – Perform scheduled and unscheduled maintenance on laboratory tools in and out of the cleanroom.
- Reporting – Maintaining and writing rigorous and complete documentation such as standard operating procedures (SOPs). Delivering biweekly or monthly reports on the development progress and the measured data.
- Organization – Ensure all materials are filed following agreed conventions and are easily accessible.

Qualifications and Experience:

- Education – Ph.D. in Electrical Engineering or Photonics.
- Experience – 5+ years of hands-on experience in the nanofabrication including electron beam lithography.
- Technical – Wet bench and chemical processing; Thin-film deposition (thermal, e-beam, sputtering deposition); Electron beam resist and photoresist spin coating; Electron beam lithography and photolithography; Reactive ion dry etching (RIE or DRIE); Characterization (optical microscopy, profilometry, SEM, AFM); Familiar with cleanroom safety and hazardous materials handling protocols.
- Characteristics – Motivated, self-driven professional. Ability to prioritize work and meet deadlines while working on multiple tasks – often under pressure with shifting priorities.

Bonus Qualifications:

- Knowledge of photonic design and simulation using finite difference time domain (FDTD).
- Familiar with nanoimprinting techniques using photopolymer resin.

About us

Where ideas and innovation meet.

Nanotech Security Corp. is a leading innovator of nano-optic image technologies used in anti-counterfeiting applications. With billions of security features in circulation, Nanotech's products include secure and memorable security labels, stripes, patches, and colour-shifting films for currency authentication and brand protection.

KolourOptik is a patented technology that is exclusive to the government and banknote market and combines sub-wavelength nanostructures and microstructures to create modern overt security features with a unique and customizable visual effect. KolourOptik pure plasmonic colour pixels produce full colour, 3D depth, and movement used in security stripes and threads that are nearly impossible to replicate. At less than 5 microns thick, KolourOptik products seamlessly integrate into banknotes and other secure government documents.

LiveOptik is a patented technology that utilizes innovative nano-optics one tenth the size of traditional holographic structures to create next generation overt security features customized to our customers' unique requirements. LiveOptik delivers multi-colour, 3D depth, movement, and image switches for secure brand protection stripes, threads, and labels that are nearly impossible to replicate.

Nanotech strives to create a corporate culture that values input and encourages individuals to express themselves in a team environment.

To Apply

Applications will be accepted until the position is filled. Please email your resume to careers@nanosecurity.ca, include a cover letter, and use the position title in the subject line of your email. Only candidates considered for an interview will be contacted. Thank you for your interest in this position, we look forward to hearing from you!

Note: We will **not** be accepting candidates from **recruitment agencies** at this time. Only Candidates who are eligible to accept employment in Canada **WITHOUT** sponsorship will be considered.