

**Position:** Senior Nanoimprint Lithography Engineer / Scientist  
**Job Status:** Regular Full Time  
**Department:** R&D  
**Location:** Burnaby, British Columbia, Canada  
**Reports to:** Director, Research & Development

### The Position:

Reporting to Director, Research and Development, you will be working with nanofabrication scientists and engineers, including electron beam lithography and nanoimprint lithography experts to develop new nanoimprint lithography techniques or improve the existing ones. This will include lab-scale plate-to-plate and roll-to-plate prototyping as well as helping with roll-to-roll pilot-scale process development and troubleshooting for translation to our high-volume manufacturing facility. You will work with internal and external R&D resources to source and develop polymer formulations with required optical, mechanical, adhesion, chemical stability, durability requirements along with compatibility considerations with our existing roll-to-roll manufacturing line. Establishing cutting-edge nanoimprinting techniques with new materials and challenging nano-scale structures is part of your daily job. The scope of the research may combine experimenting with industry-standard polymers, finding the optimal curing parameters, designing required fluid rheology and surface chemistry properties, fabricate rapid prototypes of imprinted micro- and nano-structures, and fine-tuning the existing SOPs.

### Key Responsibilities:

- Technical
  - Own the nanoimprint lithography process development using advanced techniques with plate-to-plate, roll-to-plate lab-scale and R2R pilot-scale imprinting machinery.
  - Explore, experiment and establish novel polymer imprinting processes to reduce defectivity and optimize the replication throughput at nano-scale.
  - Facilitate failure mode analysis and implement corrective actions to expedite the prototyping phase.
  - Employ optics sense and nanoimprinting know-how to improve optical performance during prototyping and manufacturing steps.
  - Establish quality control protocols for thermoplastic polymer and photopolymer materials.
  - Engage with thin film deposition on flexible substrates toward realizing end products.
- Organizational
  - Customize new and existing SOPs based on different material inventories and process conditions and create a comprehensive library of processing materials and parameters.
  - Ensure all documents and materials are filed following agreed conventions and are easily accessible.
- Teamwork – Work effectively within a team of scientists and train, mentor and supervise junior employees performing work on specific tasks.

### Qualifications and Experience:

- Education – PhD in chemical engineering, materials science or relevant disciplines.
- Experience
  - 8+ years of industry experience in nanoimprint lithography using thermoplastic and photopolymer materials.

- Hands-on experience with micro- and nano-replication using plate-to-plate, roll-to-plate, and roll-to-roll nanoimprinting lithography techniques with ultraviolet or thermal polymer resin on flexible substrates.
- Demonstrated skill with UV-NIL of micro- and/or nano-structures, together with adhesion and release properties at both lab and pilot scales.
- Solid background in liquid rheology and surface chemistry.
- Experience with rapid prototyping and product development in fast-paced industry environment.
- **Communication** – Strong ability to communicate clearly orally and in writing, with the ability to adapt content and style to various audiences. Excellent interpersonal skills with the ability to foster collaborative working relationships among internal teams and external auditors.
- **Characteristics** – Positive, dedicated, self-driven, hard-working professional. Ability to prioritize work and meet deadlines while working on multiple tasks – often under pressure with shifting priorities. Ability to work both independently and as a member of a team, under tight deadlines. Have a great sense of humour.

## About Us

*Where ideas and innovation meet.*

**Nanotech Security Corp.**, a subsidiary of Meta Materials Inc., 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.

**Meta Materials Inc.** "META®" (NASDAQ: MMAT) is a developer of high-performance functional materials and nanocomposites. META delivers previously unachievable performance, across a range of applications, by inventing, designing, developing and manufacturing sustainable, highly functional materials. Our broad electromagnetic technology platforms enable leading global brands to deliver breakthrough products to their customers in consumer electronics, 5G communications, health and wellness, aerospace, automotive, and clean energy. Our nano-optic technology provides anti-counterfeiting security features for government documents and currencies and authentication for brands. Our achievements have been widely recognized, including being named a Lux Research Innovator of the Year in 2021. Learn more at [www.metamaterial.com](http://www.metamaterial.com).

META is a fast-growing company with a positive and committed work culture and a phenomenally talented workforce. Our employees are inspired to do exceptional and innovative work, are proud to contribute to the success of the company and are our greatest asset.

## To Apply

Applications will be accepted until the position is filled. Please email your resume to [careers@nanosecurity.ca](mailto: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.