

Phoebus Optoelectronics Job Posting for Metamaterial Scientist:

Position Title:	Metamaterial Scientist (Level 2)
Planned Start Date:	Spring 2010
Educational Requirements:	PhD in Material Science related field
Experience Level:	3 – 4 years of graduate-level research
Supervisor:	Michael Crouse, PhD

Job Responsibilities:

The metamaterials scientist will be responsible for leading the development of metamaterial prototypes, which includes device simulation, fabrication and optical/electrical performance characterization. The metamaterial scientist will work both independently and as a team with other senior engineers at Phoebus to deliver prototypes against a challenging schedule. The currently active metamaterial projects are in the fields of solar energy, advanced IR sensing and solar-driven biofuels. A diverse range of skillsets and responsibilities will be developed including, but not limited to, the following:

1. Advanced E-M modeling using industry leading finite element analysis to define and optimize the metamaterial device designs.
2. Metamaterial modeling using Phoebus' own proprietary software for rapid near field optics simulation.
3. Designing and executing a prototype fabrication plan that includes thin film deposition, lithographic patterning, pattern transfer via plasma etching and planarization techniques.
4. Materials and structural characterization using a wide range of analytical techniques including SEM, AFM, TEM, NSOM, XRD, EDAX and other materials characterization techniques.
5. Designing and executing the optical performance testing of prototype devices including the use of laser optical benches, FTIR, ellipsometry and additional optical methods.
6. Electrical performance testing using I-V probe stations and solar efficiency using standardized photovoltaic testing equipment.

The metamaterial scientist will be asked to span the work scope of Phoebus to lead and/or contribute to the core areas of prototype development: device simulations, fabrication and performance characterization. The majority of this work will be located in New York City for simulations and optical/electrical performance characterization. The expected fabrication effort will be a smaller but equally important role that will require travel to the Cornell Nanoscale Fabrication facility in Ithaca NY. The current plan is to not exceed ~30% travel to the Cornell facility as a yearly average.

Required Experience:

The candidate must have a diverse skillset in the nanoscale materials field with a graduate-level publication record. The candidate must display a functional knowledge of a diverse range of nanomaterials fabrication and characterization techniques as discussed above. Additionally, the candidate must be able to quickly come up to speed in the simulation and performance characterization areas. Lastly, knowledge of project management, statistical design of experiments and the ability to lead a project team is required.

Required Education:

The candidate must have a PhD in Engineering or Science degree and a graduate-level publication record in a materials related field such as: Materials Engineering, Chemical Engineering, Electrical Engineering, Applied Physics, Optics and/or Chemistry.

Recommended Experience:

Candidates with additional levels of experience in materials characterization, NSOM microscopy, photovoltaic devices and optical characterization will be highly considered.

About Phoebus:

Phoebus Optoelectronics was founded in 2003 to commercialize various high potential nanostructured materials research being done at The City University of New York (CUNY). The company is largely focused on “metamaterials” and their applications to renewable energy, environmental monitoring and defense related applications. The company holds several key patents in the metamaterial field for the commercialization of these structures. Additionally, Phoebus partners with the CUNY Center for Advanced Technologies to access state-of-the-art simulation capabilities using CST Microwave studios and HFSS E-M modeling on a high performance computer cluster. The company has seen significant growth in the past 2 years with over \$3 million in committed funding in SBIR and STTR grants.

Recruiting Contact:

Please email all resumes to Michael Crouse at: crousem238@gmail.com.