Postdoctoral Research Opportunity at NIST

The Materials Measurement Science Division at the National Institute of Standards and Technology (NIST) is searching for a postdoctoral researcher to join a multi-disciplinary team of scientists working to advance our capabilities in nanocalorimetry and develop methods for applying the technique to in-situ monitoring of semiconductor processes. The major responsibilities of the candidate will include nanocalorimeter fabrication and applications in semiconductor materials. This includes, but is not limited to, design and fabrication of nanocalorimeters for different applications, developing data acquisition and analysis systems, and performing measurements to determine thermal properties of nanoscale materials commonly found in semiconductor devices. The candidate will be expected to publish findings and present at conferences, where appropriate.

Project Details: Nanocalorimetry is a microchip-based thermal measurement metrology capable of making thermal property measurements on small samples at very fast heating and cooling rates, and its extraordinary sensitivity provides insights into thin film materials, interfaces, and reactions down to monolayer thicknesses that are ubiquitous in micro- and nanoelectronics. NIST is a world leader in the design, fabrication, calibration, and application of nanocalorimetry for advanced materials research. This project will develop nanocalorimetry methods for semiconductor specific materials, devices, and data as well as in-process and hybrid-metrologies.

Qualifications: This position requires hands-on experience in nanofabrication. Some experience with LabVIEW programing, thermal analysis or analog circuits would be a plus.

- Ph.D. or equivalent experience in materials science, physics, chemistry, or related.
- Experience in designing, fabricating, and characterizing devices in a clean room environment.
- LabVIEW experience or knowledge of electronics/analog circuit would be a plus.
- Strong written and oral communication skills.
- Ability to work as part of a team and independently.
- US citizenship not required.

Anticipated annual salary: $80,000-$120,000, based on experience.

The work is primarily on site at the NIST campus in Gaithersburg, MD, USA. Limited travel should be expected, including to technical conferences.

If interested, please contact Dr. Feng Yi at feng.yi@nist.gov.

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