

Positions Available

**THREE POST-DOC POSITIONS
Optoelectronics Materials Group
FOM-Institute AMOLF
Amsterdam, The Netherlands**

Three postdoctoral positions are available in the Optoelectronics Materials Group at the FOM Institute in Amsterdam, each for a period of two years. The three research projects are:

(1) "Synthesis and Characterization of Two-dimensional Photonic Bandgap Materials." A periodic refractive index modulation is made in a 2-D optical waveguide structure. The local optical density of states will be investigated by studying the spontaneous emission rate of rare earth probe ions in the waveguides, and miniature optical amplifiers and lasers will be made.

(2) "MBE Growth of Erbium Doped Group-IV Semiconductors," with the aim to achieve efficient photo- and electroluminescence at 1.5 micron from internal transitions in Er. SiGe and SiC quantum well structures will be grown on Si and the relation between optical properties and electronic structure studied.

(3) "Impurity Photovoltaic Effects in Silicon." The infrared spectral response of crystal Si solar cells can be enhanced by the addition of specific impurities or defects, due to the impurity photovoltaic effect. A systematic study will be made of the effect of various defects and impurities on the optical and electrical properties of Si solar cells.

Requirements for all positions: PhD degree in applied physics or materials science. For more information and application, contact:

Prof. A. Polman
FOM-Institute AMOLF
Kruislaan 407
1098 SJ Amsterdam
The Netherlands
phone: 31-20-6081234
fax: 31-20-6684106
e-mail: polman@amolf.nl
Word Wide Web: <http://www.amolf.nl>

**POSTDOCTORAL POSITION
Computational Materials Science
Sandia National Laboratories
Albuquerque, NM**

The Theoretical and Computational Materials Modeling department has an immediate opening for postdoctoral research in materials modeling and simulation. Responsibilities include utilizing atomic, mesoscopic, and continuum simulation techniques to study the microstructural evolution of polycrystalline materials. Research emphases include nucleation and growth processes, coarsening, solidification, and recrystallization. A particular focus is coupling computational models across length and time scales.

Modeling and simulation efforts within the department focus on collaborative projects with industry, academia, and other government laboratories. Participation in these projects will provide interaction with a broad network of scientists in the field. In addition, the resources being developed and used in this research represent the highest state-of-the-art in computational materials science.

Candidates must have a PhD degree in materials science, condensed matter physics, or related field with a solid background in general materials science and in modeling. While experience in particular modeling techniques is not necessary, a strong background in computational theory and practice is required. Excellent written and oral communication skills are essential. Since a security clearance is necessary, U.S. citizenship is required.

To apply, send a resume, publication list, and three references to:

Dr. Elizabeth A. Holm
Department 1841, MS 1405
Sandia National Laboratories
Albuquerque, NM 87185-1405

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**POSTDOC POSITION
Metallurgy, Material Science,
or Related Field
Sandia National Laboratories**

Seeking PhD graduate in metallurgy, material science, or related field for a postdoc position to work at Sandia National Labs. This position will require the development of modeling techniques to simulate induction hardening of steel.

Given a thermal profile, steel composition and starting microstructure, predictive models for microstructural evolution and phase transformations during on-heating and on-cooling cycle will need to be developed. The successful candidate must be fluent in an advanced programming language and be able to develop model simulations on UNIX workstations. This person will have to work with experimentalists to verify the models. This is a one-year appointment, renewable twice for a total of three years. Foreign nationals will be considered for this position, but U.S. citizenship is required.

To apply, send a resume, publication list and three references to:

Dr. Veena Tikare, Sandia National Laboratories
Dept. 1841, MS 1405, Albuquerque, NM 87185-1405

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**SENIOR CHAIRED POSITION
Materials Science and
Engineering Department
Northwestern University**

Applicants are being sought for a prestigious senior chaired professorship in materials science and engineering at Northwestern University. We are seeking the best possible candidates for this position, regardless of the field of research within the discipline of MS&E. Applicants should have a well-established international reputation for excellence in research and a dedication to teaching.

Interested candidates should send their resumes to:

Faculty Search Committee
Department of Materials Science
and Engineering
Northwestern University
Evanston, Illinois 60208-3108

If there are any questions about this opportunity, please call Julia Weertman at 847-491-5353; fax 847-467-6573. In order to ensure full consideration, applications must be received by **January 1, 1997**.

Hiring is contingent upon eligibility to work in the United States.

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**POSTDOCTORAL FELLOWSHIP
Ames Laboratory, Iowa State University**

The Ames Laboratory is seeking a postdoctoral research associate for work within the Magnetics Group. The research will investigate the development of new highly magnetostrictive materials for use in torque sensors. This will involve materials preparation, construction of equipment, and measurement of magnetic properties under torsional stress. The objective is to identify a material that can be used as a torque sensor in advanced electronic steering systems which will replace hydraulic power steering in automobiles. The project is suitable for a materials scientist, physicist or electrical engineer. Research experience to doctoral level in magnetism and/or magnetic materials is essential. Prior experience in magnetostriction, magnetomechanical effects or fabrication of magnetic materials is desirable. Send cover letter, resume, plus the names and addresses of three references to Dr. D.C. Jiles or Dr. R.W. McCallum, 204 Metals Development, Ames Laboratory, Iowa State University, Ames, Iowa 50011-3021. Fax: 515-294-8727; e-mail: gauss@ameslab.gov.

The Ames Laboratory is an EEO/AA employer.