

Positions Available

**Supervisory Research
Physicist, GM-15
\$64,233 to \$83,502**

(salary dependent on qualifications)

The Center for Bio/Molecular Science and Engineering, Naval Research Laboratory seeks Ph.D. (or equivalent experience) in physics who will be responsible for coordinating, managing, and performing research in the areas of self-assembly, molecular materials, ferroelectric displays, pyroelectric detectors, non-linear optic systems, and structural studies. Specialized experience required in: liquid crystals, ferroelectric polymers, critical phenomena and phase transitions, two dimensional systems, magnetic tubule composites, self-assembly of organic and biological materials, order/ disorder phenomena, re-entrant phenomena in condensed matter, and incommensurate lattices. Demonstrated skill in the following techniques required: high pressure calorimeter, optical and x-ray diffraction, dielectric techniques applied to material systems, x-ray scattering light correlation spectroscopy, and surface tension measuring techniques. Call (202) 767-3030 to request a copy of Vacancy Announcement #61-0166-91 before submitting Application for Federal Employment (SF-171). Applications must be received by 30 November 1992.

**the Naval Research Laboratory is
an Equal Opportunity Employer
US citizenship required**

Positions Wanted

Materials Engineering/Metallurgist: PhD Materials, BS Metallurgy. Seeking R&D position in materials/metallurgy. Research: fracture mechanics, failure analysis, STEM, SEM, EDS, XRD, metallography, solidification, welding, corrosion, FEA, Al-Cu-Li alloys, lead-acid batteries, powder metallurgy and HSLA steels. Publications. Computer and teaching experience. Excellent communication and written skills. Location open. Please reply to **Box No. 104.**

Electron Microscopy Scientist: PhD 1991, China resident, seeks Postdoctoral or visiting scholar position in USA for one or two years. Specializes in HRTEM, CTEM, EDS, XRD. Experienced in surface atomic profile imaging and HRTEM (TEM) studies of the ultra-microstructure of ultrafine ceramic powders; ceramic whiskers; metal matrix composites (interfaces). Published more than twenty scientific papers. Please reply to **Box No. 103.**

TO REPLY TO BOX NUMBER, WRITE:

Box No. _____, c/o MRS Bulletin, Materials Research Society, 9800 McKnight Road, Pittsburgh, PA 15237

POSTERMINARIES

Mother Nature Makes the Best Materials

There are some things in this world that are beyond our control. I suppose this helps us keep our perspective on life. In my case, I have to live with the fact that Mother Nature makes better materials than I do.

I accept as a motivating principle the idea that new materials with unique properties can lead to new technologies. In my lifetime, the unique properties of pure elemental silicon have been exploited to give us toasters that talk, watches that beep in chorus to signal to seminar speakers that their time is up, and calculators that are cheaper than a six-pack of beer, freeing us to forget everything we ever knew about addition and multiplication. More exotic materials, like the alloy superconductor Nb-Ti, have allowed our medical doctor friends to take remarkable pictures of the insides of our bodies without making any holes. New materials have truly changed the world.

The continued contribution of new materials to progress requires that we explore the properties of a wide variety of materials of suitable size and quality to figure out if they can do something of value. Now, measures of sample quality are quite subjective; when considering size, what is "large" to the eye of the grower of high T_c cuprates is "nonexistent" to the eye of the grower of silicon.

Yet, the best efforts of the most accomplished materials person pale in compari-

son to the work of Mother Nature. Certainly, the comparison is not quite fair. Mother Nature has bigger ovens (volcanos, for example) and more time (years to decades instead of days to weeks) than I can manage, and she mostly stays within a limited subset of the periodic table for her phase equilibria studies. (I keep wishing that the periodic table contained a few more entries such as an alkaline earth, intermediate in size between magnesium and calcium).

I try to be inspired by the materials Mother Nature has prepared. The quartz swords from Brazil that are bigger than I am, take my breath away. Recent reports from the former Soviet Union indicate that Mother Nature was indeed the first to make buckyballs (C₆₀) in bulk.² I don't mind admitting that I am in awe of Mother Nature's abilities. Still, I hope to be able to make a useful contribution in this materials business. I console myself with the realization that experience counts for a lot and that Mother Nature has been at it a couple of billion years longer than I have. (And, as far as I know, she hasn't made any cuprate superconductors yet.)

L.F. SCHNEEMEYER

References

1. *Rocks and Minerals*, C.A. Sorrell (Golden Press, New York, 1973).
2. P.R. Buseck, S.J. Tsipursky, and R. Hettich, *Science* 257 (1992), p. 215. □

**1993
MRS
Spring Meeting
San Francisco,
California**

April 12-16, 1993

