

## Postdoctoral Need at the U.S. National Institute of Standards and Technology near Washington D.C.

A highly motivated PhD level researcher is sought to fill a need in the *Nanoparticle Metrology for Health and the Environment* project team situated within the Nanomaterials Group, Materials Measurement Science Division at the NIST campus near Washington, D.C. The requirements for consideration include comprehensive experience in the development and application of flow field flow fractionation (particularly asymmetric flow) for the separation and characterization of engineered and hybrid materials (in particular, nanomaterials, liposomes, drug formulations and other complex functional species) coupled with a strong foundation in analytical science and chemistry. Applications may include drug delivery, measurements in complex media, development of validated and transferrable methods, development of new or novel applications, development of calibration procedures for quantification of analytes by FFF coupled to multiple detectors including ICP-MS, and/or physico-chemical transformations of nanomaterials and their progeny.

Skills should include good command of the English language in written and oral forms, experience/familiarity with ICP-MS and analytical separation methods (e.g., SEC, HPLC, Field Flow Fractionation, Capillary Electrophoresis). Experience with hyphenated forms of FFF, including FFF-MALS-UV/Vis-ICPMS is particularly beneficial, as is experience with single particle ICP-MS. Principal research will focus on the development and validation of methods to fractionate and analyze components of real and model nanoscale drug delivery systems in order to assess the uptake, release, and activity of drug formulations and their correlations to structural and surface chemical properties. Drug formulations may include both soft and hard materials. Research will focus on method development, mechanistic studies, problem solving and drug system design improvements for efficacy.

The postdoctoral candidate will work within a multidisciplinary team, with opportunities to collaborate with researchers across NIST and at other US agencies, in particular the US Food & Drug Administration and the National Cancer Institute. Available equipment includes dual asymmetric-flow field flow fractionation systems with detection by MALS, DAD/UV-VIS, DLS, fluorescence and ICP-MS; scanning XPS; ATR-FTIR with flow cell; UV-Vis-nearIR spectrometer; electrospray differential mobility analyzer; DLS; electrophoresis/zeta potential; laser diffraction spectrometer; capillary electrophoresis. Fully equipped chemistry labs with state of the art equipment are available. Additional capabilities are accessible outside the immediate project space, including TGA, fluorescence spectrometer, NMR, BET/nitrogen gas sorption, XRD, AFM, TEM and SEM.

Candidates need not be US citizens, but must have received their PhD within the past year or plan to graduate in the near future to be eligible; The position is intended for recent graduates without prior postdoctoral experience. Additionally, US citizens will be encouraged to apply for a NRC Fellowship through research opportunity 50.65.21.B7020 or 50.65.21.B7765 (<http://sites.nationalacademies.org/pga/rap/>). Salary and benefits (including travel) for this position are commensurate with a typical US University postdoctoral researcher and will be determined based on level of experience and other factors. The position is intended for a 2 year period, although extension beyond 2 years is possible, contingent on available funds and research progress. The candidate will be required to pass a security screening in order to work at the NIST campus.

NIST is the U.S. National Metrology Institute, located in Gaithersburg, Maryland, approximately 15 miles outside of Washington, D.C. For information about NIST, go to <http://www.nist.gov/> .

The position is available beginning in February 2016. Send letters of interest with CV to:

Dr. Vince Hackley  
Project Leader, Federal Program Officer  
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