NRL BAA Announcement
#61-09-05

APPLICATIONS OF MOLECULAR BIOLOGY, BIOCHEMISTRY, ANALYTICAL CHEMISTRY AND ADVANCED LASER TECHNIQUES

The Naval Research Laboratory (NRL) Chemistry Division (Code 6100) conducts research in a number of areas related to detection of biological, chemical and other hazardous materials. In addition, the Division conducts research in developing tools and methods to transfer, preserve and characterize chemical and biological based materials.

Areas of primary interest include:

1) Characterization of environmental processes and their application to remediation and restoration technologies;
2) Detection, sampling and characterization of chemical and biological agents, toxic metal ions and explosives;
3) Unique analytical chemistry tools for more efficient and cost effective sampling processing;
4) Genetic- and molecular biological-based tools (4a) techniques for the preservation and characterization of cells, tissue and biomaterials;
5) Improved and alternative fuel sources;
6) Atmospheric propagation of femptosecond pulses;
7) Electromagnetic induction sensors and analysis for detection and classification of unexploded ordinance;
8) Advanced laser techniques;
9) Microfluidic structures with application to microchip separations, sampling and detection;
10) Chemometrics, and;
11) Volume sensing through image analysis and machine vision.

Key words describing these research interests include, but are not limited to: chemical sensors, biosensors, biosurfactants, gene probe technology, biofilms, freeze-drying, lyophilization, cryopreservation, contaminated sediments, corrosion and biofouling, remote sensing, methane hydrates, carbon cycling, laser pressure, optical techniques, biocollector, MTADS, capillary electrophoresis, microchip, laboratory-on-a-chip microfabrication, microfluidics, video-based detection, machine vision, workspace monitoring, damage control, multivariate analysis, mobility fuels, thermal stability, antioxidants, and metal

catalysis. NRL is interested in receiving proposals which address innovative technologies or fundamental approaches related to these research areas.

White Papers (WP) of 2-3 pages should be addressed to Code 6110, or e-mail, telephone (202) 404-6392. Allow one month before requesting confirmation of receipt of WP, if confirmation is desired. Contact between the applicant and NRL should not take place prior to evaluation of a WP by NRL. If necessary, NRL will initiate substantive contact.