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Probe for Analyzing Liquids and Solids in Vacuum Environments

SUMMARY

Many samples need to be analyzed in liquid form. However, many analytical devices operate in a vacuum environment, making analysis of liquids (particularly flowing liquids) problematic. Researchers at PNNL have developed a self-contained micro fluidic interface for vacuum-based analytical instruments that overcomes this problem. To date, the probe has been successfully used in studies of atmospheric aerosols by TOF-SIMS and SEM. However, with some modifications, the probe should also be applicable to analyses conducted with TEM and photon-based light sources. The self-contained nature of the probe allows it to be readily interfaced to the various instruments, without any substantial modification to the instrument.

The probe uses an electro osmotic pump to induce fluid flow in a series of micro channels. A specifically sized aperture is utilized to provide access to the flowing liquid sample by the instruments analytical beam. This allows liquid-solid interfaces present in a sample to be continuously analyzed. A partner is sought for manufacturing and distributing the probe in the applicable analytical instrument markets.



Technology Portfolio(s)

- » Other

Potential Industry Applications

- » Chemicals
- » Healthcare, Pharma, Biotech & Medical
- » Professional Services
- » Security

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