The University of North Dakota is actively seeking industry partners to license, develop and commercialize its technology consisting of a system to create metal ion-sensitive silica nanoparticle sensors combined with novel metal-binding compounds and their use as a diagnostic, analytical and/or treatment tool for medical and environmental use.

Suggested Uses:
- Rapid, simple and sensitive detection of trace amount of metal ions in biological or environmental samples
- Selective sequestration of unwanted metal ions in drinking water

Advantages:
- Biocompatible—tested non-cytotoxic in cultured human lung epithelial cells
- Provides a highly sensitive and rapid method for selective detection of target metal ion analytes
- The target element-dependent fluorescent property of the compounds minimizes background signals
- Longer-lasting signals due to increased photostability of fluorescent molecules

Our Technology:
This is an opportunity to license a technology comprising silica nanoparticles associated with target element-dependent fluorescent compounds and a group of metal ion-sensitive compounds. Fluorescent dye molecules are often used as probes or indicators for detection of target elements, but the handling and usage of such molecules require special care due to their photosensitivity. In addition, they tend to produce relatively high background signals because of their intrinsic fluorescent property. Our present nanotechnology was developed to address these issues, and can be used as a sensor for detection of metal ions or a binder for removal of unwanted metal ions for medical and environmental use.

Patents: US 7,629,179 (UND1029); US 7,384,789 (UND1039)