



## *Mr. Brent M. Detering*

*Significant research in Plasma Fast Quench Reactor technology and hydrocarbon production, combustion and gasification processes*

**Phone:** 208.526.1720

**E-mail:** [brent.detering@inl.gov](mailto:brent.detering@inl.gov)

**Education:** Mr. Brent M. Detering received his B.S. in chemistry from Iowa Wesleyan College in 1981. He received his M.S. in inorganic chemistry from the University of Iowa in 1983.

**Work experience:** Mr. Detering has worked at the Idaho National Laboratory since 1987. Currently, his primary responsibilities include development and testing of hydrogen transport membrane technology and development of new business in the area of paper and pulp industry Kraft black liquor combustion and gasification processes. Previously, he was Principal Investigator on the INL's Natural Gas-to-Liquid Fuels Program (1994-1998). He has 20 years of experience in conducting applied research, development and

commercialization of technology in advanced materials, alternative fuels and energy efficiency and utilization. His work during the last 14 years has focused on development of commercially viable technologies related to the use of thermal plasmas for synthesis and production of advanced nanomaterials and production of alternative fuels from natural gas.

**Professional endeavors:** Mr. Detering's research interests include the synthesis of commercially important ultrafine metal powders, ceramic powders, carbon powder, and the production of hydrocarbons from natural gas. The latter interest is presently engaged in his work on paper/pulp production and Kraft black liquor combustion and gasification processes.

### **Patents:**

U.S. Patent No. 5,749,937 -- Fast Quench Reactor and Method

U.S. Patent No. 5,935,293 -- Fast Quench Reactor and Method

U.S. Patent No. 6,606,855 -- Plasma Reforming and Partial Oxidation of Hydrocarbon Fuel Vapor to Produce Synthesis Gas and/or Hydrogen Gas

U.S. Patent No. 6,187,226 -- Thermal Device and Method for Production of Carbon Monoxide and Hydrogen by Thermal Dissociation of Hydrocarbon Gases

U.S. Patent No. 6,395,197 -- Hydrogen and Elemental Carbon Production from Natural Gas and Other Hydrocarbons

### **Licensing information**

For information on licensing INL technologies such as those developed by Mr. Detering, contact the Lead Account Executive for Non-Nuclear Energy:

**David Anderson**

Phone: 208.526.0837

E-mail: [david.anderson@inl.gov](mailto:david.anderson@inl.gov)