FIRST PRINCIPALS
Technology Transfer & Commercialization

MICRO-MACHINING TECHNOLOGIES

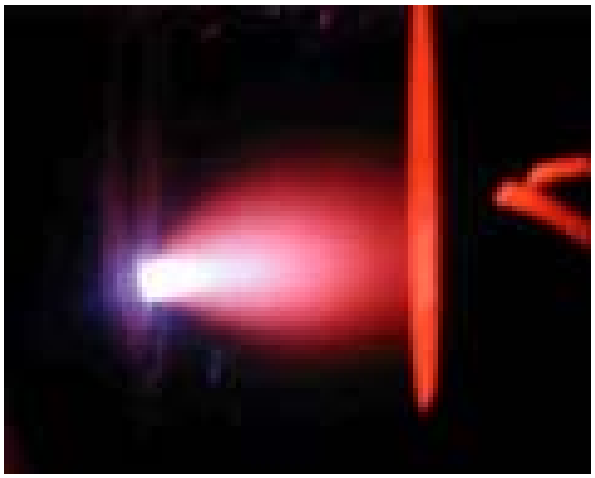
THE OPPORTUNITY

The National Institute of Advanced Industrial Science and Technology (AIST) of Japan has developed and patented several novel machining technologies.

PATENTED TECHNOLOGY

Current U.S. patents granted that protect the technology include:

US Patent	Features
6,294,224	• Method for arranging non-magnetic substance. • Easy & cost-effective formation of materials useful for micro grinding and other decorative applications. • Useful in magnetic recording media.
5,935,454	• Ultrafine fabrication method. • Dry etching of 10 nm ultrafine structures. • Order-of-magnitude improvement vs. X-ray, E-beam, and optical lithography techniques; e.g. STM (scanning tunneling microscopy).
5,805,971	• Method of producing three-dimensional forms. • Gas-particle deposition of high melting point metals (e.g. Mo, W, Ir; m.p. ~1500 degC) in combination with FeCo, FeNi, and other alloys. • Useful for constructing complex shapes in small production lots. • Overcomes limitations of metal spraying and sintering. • Good mechanical strength and electrical & optical functions.
5,368,898	• Method of generating micro-topography on a surface. • Optical micromachining technique makes use of magnetic fluids to create textures in a highly controlled fashion.
5,208,431	• Method for producing objects by laser spraying and apparatus for conducting the method. • Enables metal, ceramic, or other material to be accurately shaped without the use of a mold. • Provides excellent abrasion and heat resistance.



These technologies provide enhanced capabilities in applications such as:

- MEMS microtopography;
- Optical media;
- Laser spraying of metals; and
- Ultrafine fabrication via dry-etching.

INTELLECTUAL CAPITAL

On April 1, 2001, the National Institute of Advanced Industrial Science and Technology began operations as the "new" AIST. As Japan's largest public research organization, AIST employs approximately 3,200 people. AIST comprises 15 research institutes previously under the former Agency within the Ministry of International Trade and Industry and the Weights and Measures Training Institute.

AIST is world-renowned for its expertise in high-precision, laser beam machining capabilities.

FOR MORE INFORMATION

AIST is seeking to license these technologies and assist with their commercialization success to qualified organizations.

Consideration will be provided to a range of financial, strategic, and commercial investment options.

Certain circumstances will warrant consideration for nominal funding from AIST.

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