



IAEA

International Atomic Energy Agency

Atoms for Peace

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Expanding microanalytical capabilities in Slovenia

The challenge...

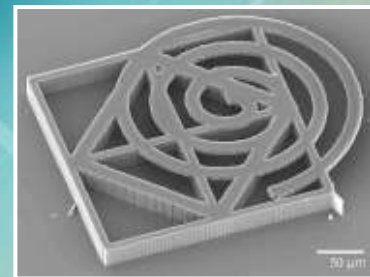
Several Slovenian companies are interested in the application of micromechanical structures to their products. These structures can be produced by a technique referred to as proton beam micromachining or deep ion beam lithography and are complementary to optical, X ray, electron and ion beam lithography. The demand for products developed through microengineering is on the rise. In order to remain competitive in the world market, it is essential that Slovenian companies utilize improved microstructure fabrication techniques.

The project...

This project aimed to help the microanalytical centre (MIC) in the Department for Low and Medium Energy Physics of the Jožef Stefan Institute to increase its participation in microengineering research and development. IAEA assistance focused on the procurement of equipment. The ion microbeam station at the MIC in Ljubljana was equipped to function as an ion microbeam micromachining centre that would provide for the micromechanical engineering needs of industrial and research activities.

The impact...

The capabilities of the ion microbeam micromachining tool were enhanced, facilitating the development of devices for industrial applications. New equipment is providing an expanded and higher quality microengineering capability that is being utilized in industrial and research activities involving the prototyping of novel devices, such as microscopic magnetic field sensors. The industrial sector will benefit from locally produced micromechanical structures, creating new opportunities for exports. The enhanced ion microbeam station at the Jožef Stefan Institute is now available for physics and applied research.



Three dimensional microstructure produced at the Jožef Stefan Institute



Ion microbeam facility

SLO/1/005: *High-energy Ion Microbeam Micromachining Tool*