

# Seminar general

## Setup at the Michigan Ion Beam Laboratory to Conduct Simultaneous Dual and Triple Ion Beam Irradiation Experiments



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Ion beam irradiation experiments, if properly conducted, can simulate the radiation damage that occurs in materials inside a nuclear reactor. A few facilities are already in existence around the world that can provide simultaneous ion beam irradiations for this purpose (JANNUS –Joint Accelerators for Nano-science and Nuclear Simulation – in France and TIARA – Takasaki Ion Accelerators for Advanced Radiation Applications – in Japan, to name just a couple). These facilities can basically replicate radiation damage that occurs inside reactors during decades of operations, in a matter of days. The simultaneous multiple ion irradiation alternative, offer a very cost effective way for radiation damage research to using materials irradiated in a reactor. Michigan Ion Beam Laboratory (MIBL) at the University of Michigan in Ann Arbor Michigan, USA, has recently added the capability to simultaneously run multiple ion beams from three particle accelerators. The laboratory is equipped with a 3 MV Tandem (NEC), a 400 kV Ion Implanter (NEC) and a 1.7 MV Tandem (HVEE). During the upgrade, the lab has also increased the number of beamlines from three to six with two more that will connect to a TEM, in the planning stages. In parallel, full remote control to the accelerators and the experimental stations from a location situated outside the perimeter of the laboratory is in the final stages. The talk will present challenges encountered in the process of building these new capabilities and the recent status of the experiments.

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**Biblioteca Națională de Fizică, sala etaj 1**