

## Thesis Topic Proposal

Institute of Physics, Czech Academy of Sciences

**ELI Beamlines laser centre**

Degree Level: Bachelor, Master

Starting date: Upon an agreement

### Simulation of the Induced Activation of Irradiated Material

#### Topic Characteristics/Abstract:

The lasers installed at ELI Beamlines are powerful enough to generate ionizing radiation. This radiation is able to activate the materials used for the various experimental devices. In order to drive the identification of the most suited material for each specific task and to envisage possible mitigation measures, the Monte Carlo group has started creating an "Activation Database". The work consists of simulating the irradiation of several materials with different particle beams having different energy and different irradiation profile. Running simulations for different configurations (material, particle type, particle energy, and irradiation profile) will provide an overall view of the induced activation problem. Furthermore, it will be necessary to identify a suitable format for storing the results and making them available for the wider radiation protection community.

#### Scope:

Population of an activation database, analysis and comparisons of the response of different materials.

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ELI Beamlines		University
Supervisor:	Roberto Versaci	Co-supervisor: tbd
E-mail:	roberto.versaci@eli-beams.eu	
Phone:	+420266051332	
Position:	Senior researcher	
Department:	96	

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#### Application:

Send your application including your CV/Resume and motivation letter describing why are you interested in this particular topic to Ms. Andrea Fürst via [andrea.furst@eli-beams.eu](mailto:andrea.furst@eli-beams.eu)