

## Postdoctoral position on “Experimental Intense Laser-Plasma Interaction”

The [Intense Laser Irradiation Laboratory](#) (ILIL) at the National Institute of Optics (INO) of CNR is seeking candidates for a postdoctoral position in experimental intense laser-plasma interaction research. The ILIL group has a long expertise and an established track record in cutting-edge research devoted to the investigation and applications of high-intensity laser interaction with matter, including Inertial Confinement Fusion schemes as well as in laser-driven particle acceleration.

The postdoctoral position will allow the candidate to join experimental campaigns at world leader kJ–class laser facilities, collaborating with teams of scientists from leading European groups. The research will focus on the investigation of laser-plasma interaction in conditions relevant for direct-drive Inertial Confinement Fusion and, in particular, to the so-called Shock Ignition scheme. Studies will include the characterization of laser absorption mechanisms, laser-plasma instabilities, the generation of suprathermal electrons and the plasma emission in the optical and X-ray domain. The candidate will also join experiments devoted to laser-driven high energy density states and ion acceleration performed at ILIL facility using the 220 TW laser system [<https://doi.org/10.1017/hpl.2020.47>].

The candidate is also expected to carry out design of diagnostics and experimental setup and to be in charge of execution of experiments, as well as the data analysis/interpretation. The candidate is also expected to pursue publication of the results in top peer-reviewed scientific journals and to present the results at top plasma-physics conferences.

The initial duration of the contract is one year, with a possible extension depending on performance and funding availability.

### Minimum Job Requirements:

- Ability to carry out independent and collaborative research in experimental relativistic laser-matter interaction or a closely related discipline
- Sound academic training in fundamental laser-matter interaction physics.
- Significant hands-on research experience in a laboratory laser-matter physics environment.
- Willingness in taking part to experiments carried out in abroad facilities

### Desired Qualifications:

- Familiarity with GEANT4 simulations.
- Experience with data analysis using software tools such as Matlab or Python.

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For details on ILIL research and publications <http://ilil.ino.it>