



Information for **visitors**

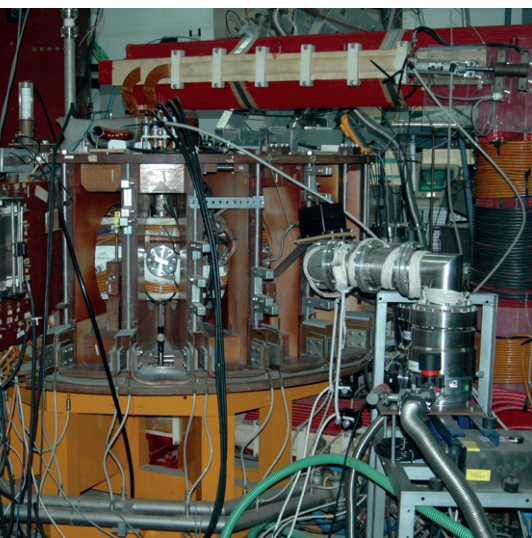
Instituto de Plasmas
e Fusão Nuclear

IPFN is a research unit of Instituto Superior Técnico, in Lisbon, and one of the largest research units in physics in Portugal.

It has the status of Associate Laboratory in the thematic areas of controlled nuclear fusion, plasma technologies and intense lasers.

IPFN researchers develop their activities in several areas, covering a range of topics in science and technology. Several of IPFN's laboratories are open to external visitors by appointment.

This document presents the essential information for you to prepare and enjoy your visit.



ISTTOK Tokamak

The ISTTOK tokamak is the only Portuguese fusion device, in operation since 1990. At ISTTOK several physics studies are being conducted, from material science with liquid metals to edge turbulence. Its main goals, in addition to education and training in nuclear fusion, are focused on cutting-edge technology and engineering, reinforced by the development of new diagnostic techniques, control and data acquisition concepts and physical modelling.



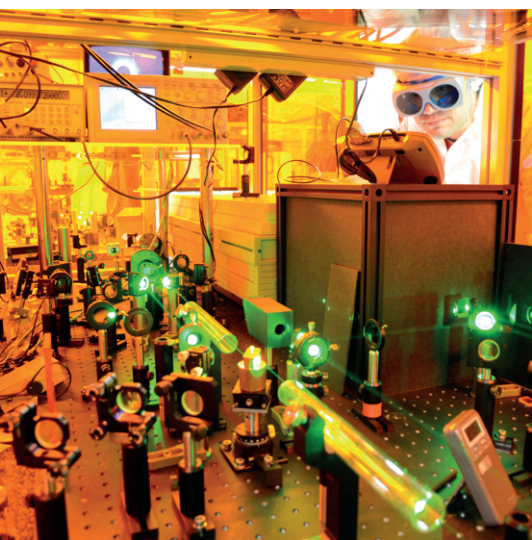
Alameda Campus



7th grade & above



25 people



L2I • Laboratory for Intense Lasers

L2I is dedicated to the study of laser-matter interaction at very high optical powers. The main research areas are laser sources, plasma physics, high harmonic generation, diode-pumped lasers and optical parametric amplification. L2I is a fundamental stepping-stone in the preparation of high-intensity experiments to be carried out at large-scale facilities, while also playing an important role in the advanced training of young researchers and technological development.



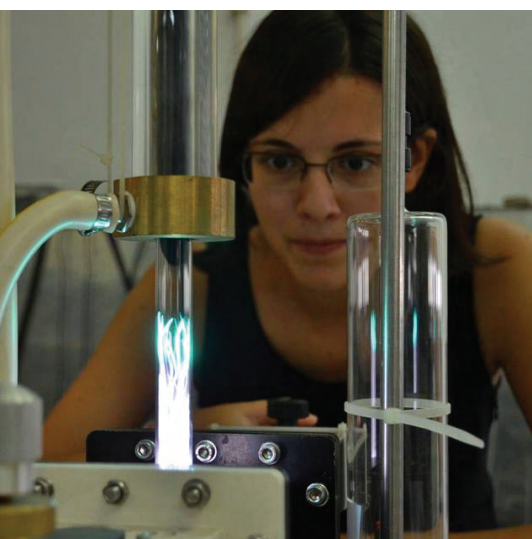
Alameda Campus



10th grade & above



8 people



PEL • Plasma Engineering Laboratory

PEL hosts several microwave plasma sources and diagnostic equipment for emission and absorption spectroscopy (atomic and molecular), UV and XUV spectroscopy, Fourier-Transform infrared spectroscopy, laser diagnostics, mass spectrometry, and electrical diagnostics. Current research at PEL focuses on plasma-based production of nanoscale materials, plasma technologies for renewable energy sources and environmental improvements, and plasma sources for biomedical applications.



Alameda Campus



10th grade & above



15 people

MotLab · Laboratory for Ultracold Atoms and Quantum Plasmas

MotLab hosts a large magneto-optical trap, capable of confining rubidium atoms at room temperature in a cubic quartz cell, and cooling them down to a temperature of 100 micro-Kelvin. The main research areas are ultra-cold atoms, collective atom-atom interactions, and Rydberg ultra-cold plasmas. MotLab also plays an important role in the advanced training of young researchers and technological development at IST.



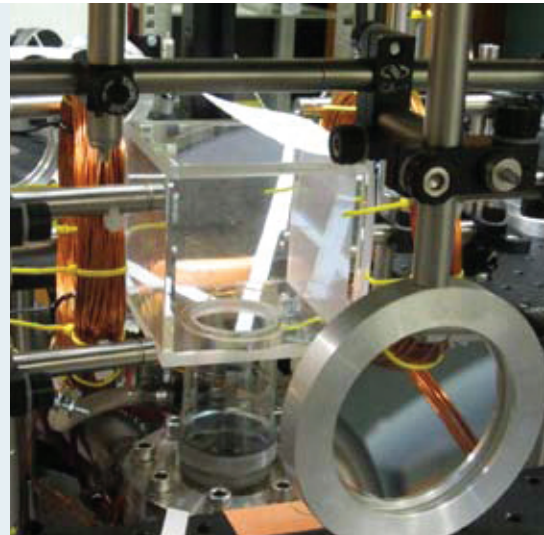
Alameda Campus



10th grade & above



10 people



LATR · Laboratory of Accelerators and Radiation Technologies

LATR researchers explore the multidisciplinary capabilities of ion beam techniques for studying and processing materials. The unit houses a unique set of equipment in Portugal, such as two electrostatic accelerators, an ion implanter, an Oxford ion microprobe and two high-resolution X-ray diffractometers.



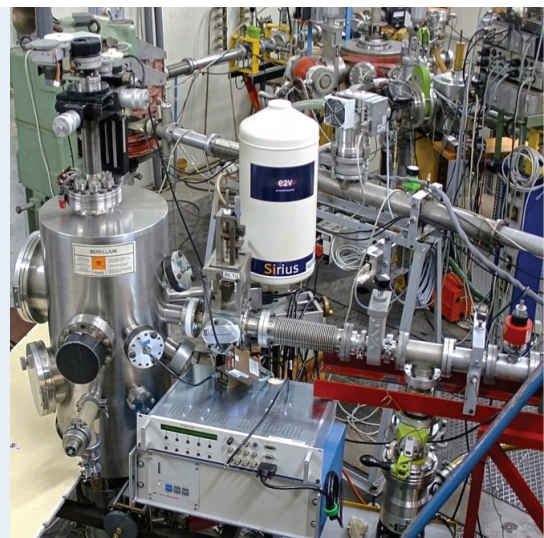
CTN



11th grade & above



20 people



ESTHER · European Shock-Tube for High-Enthalpy Research

ESTHER is a facility specifically designed for supporting European planetary exploration and Earth return missions. It was developed by an international consortium, under funding from the European Space Agency. As world-class high-performance facility, capable of reaching shock speeds in excess of 10 km/s, ESTHER employs a large array of state-of-the-art optical diagnostics, such as optical emission and absorption spectroscopy, laser spectroscopy, and microwave interferometry.



CTN



7th grade & above

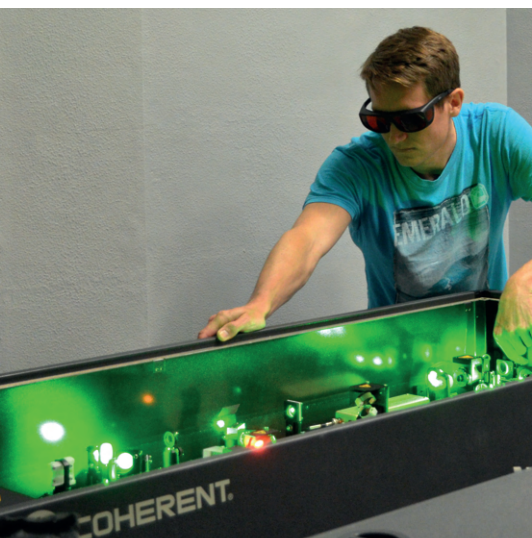


10 people



ipfn

INSTITUTO DE PLASMAS
E FUSÃO NUCLEAR



VOXEL

VOXEL hosts several lasers, being the most recent an ultra-short and ultra-intense infrared light source, whose main purpose is to calibrate de VOXEL camera prototype. The ultimate goal of VOXEL is to provide an alternative to tomography with a disruptive technology enabling 3D X-ray imaging at very low dose. VOXEL aims at prototyping new cameras working either in the soft or hard X-rays that will combine the X-ray penetration and nanometre spatial resolution, easiness to use, afforded by avoiding the rotation of the source or the sample, and extremely low dose for maximum impact on medicine and biology.



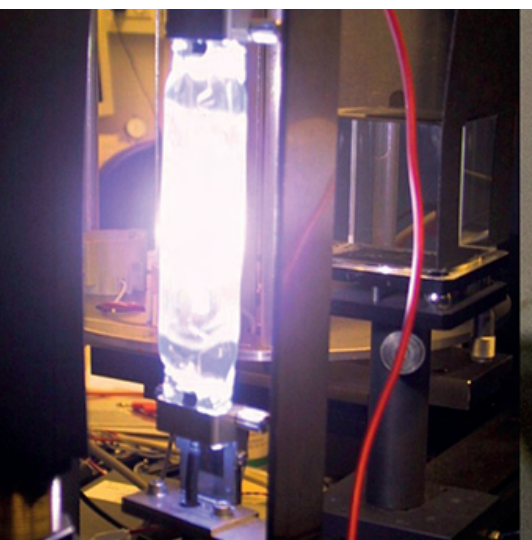
Alameda Campus



7th grade & above



6 people



PL • Plasma Laboratory

Operated by members of the High-Pressure Plasmas Group and established with support from FCT, COST and Phillips, PL includes experiments on high-pressure arc discharges and on dielectric barrier discharges for biomedical applications, performed jointly with biological and medical scientists.



Madeira Univ.



10th grade & above



5 people

How to get there

IPFN is headquartered at the IST Alameda Campus, in the heart of Lisbon. In addition, it has facilities at IST's Technological and Nuclear Campus and at the University of Madeira, as well as staff working at several other national and foreign universities and laboratories.

Campus Alameda

Instituto Superior Técnico,
Torre Norte
Avenida Rovisco Pais
1049-001 Lisboa

Subway

Saldanha (Yellow / Red lines)
Alameda (Green / Red lines)

Bus

Av. Rovisco Pais/Av. António José de Almeida
(side entries): 720, 742, 767
Alameda: 708, 717, 718, 720, 735, 767

Parking

There is a public car park near the Av. Alves Redol entrance

Contacts

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-  instagram.com/ipfnmedia
-  ipfn@ipfn.tecnico.ulisboa.pt
-  +351 218 417 618

CTN

Campus Tecnológico e Nuclear
Estrada Nacional 10 (km 139,7))
2695-066 Bobadela, Loures

Train

There are connections to the campus from the following railway lines:

CP - Azambuja Line, exit in Bobadela
CP - Cascais and Sintra Line, connection with Azambuja line
Fertagus - South Line, connection with Azambuja line

Metro

Oriente (Red Line), connection with the train.

