

## Collaboration

The network's main scientific and technological objectives are split into three closely interlinked work packages

- Laser and Plasma,
- Facility Design and Optimization,
- Applications.

EuPRAXIA-DN brings together teams with world-class expertise in an interdisciplinary area of research. To achieve our research objectives, the network requires methods and skills from physics, engineering, optics, IT, materials sciences, electronics and advanced sensor technologies.

## Beneficiary Partners



## Associated Partners



Doctoral Network

## Project Management

The Steering Committee is responsible for the overall network strategy and takes all the decisions concerning the network. It comprises the scientific coordinator, representative members from universities, research centers and industry, as well as one elected Fellow representative.

The representatives from academia and industry will also act as training coordinators, overseeing the training of all Fellows.

## Contact us

EuPRAXIA-DN Coordinator

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**ACCELERATING  
RESEARCH  
AND TRAINING**



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## About EuPRAXIA

EuPRAXIA is the first European project that develops a dedicated particle accelerator research infrastructure based on novel plasma acceleration concepts and laser technology. It focuses on the development of electron accelerators and underlying technologies, their user communities, and the exploitation of existing accelerator infrastructures in Europe. It was accepted onto the ESFRI roadmap for strategically important research infrastructures in June 2021 as a European priority.

## Doctoral Network

To fully exploit the potential of this breakthrough facility, advances are urgently required in plasma and laser R&D, studies into facility design and optimization, along a coordinated push for novel applications.

The EuPRAXIA Doctoral Network (EuPRAXIA-DN) is a new Horizon Europe Marie Skłodowska-Curie Actions Doctoral Network (MSCA-DN), offering 12 high level fellowships between universities, research centers and industry that will carry out an interdisciplinary and cross-sector plasma accelerator research and training program for this new research infrastructure

The network focuses on scientific and technical innovations and on boosting the career prospects of its Fellows.

“ Plasma accelerator research is at the cutting edge of technology. ”

Prof Dr Carsten P Welsch

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## Research Projects

The Fellows will work on the following research projects. Ten Fellows will be funded from the HE-MSCA-DN funds, while two Fellows will be funded by the UKRI guarantee funds:

### Istituto Nazionale di Fisica Nucleare

Theoretical and Experimental Studies of Plasma Formation in Capillary Discharge Waveguides for Plasma-based Accelerators

Theoretical and Technological Studies into Femtosecond Synchronization

### CVIDEC Instrumentation GmbH

Development of Integrated Diagnostics for Plasma Accelerators

### Consiglio Nazionale delle Ricerche – Istituto Nazionale di Ottica

Manipulation and Characterization of Ultrashort Laser Pulses for High-quality Electron Bunch Acceleration

### ELI Beamlines

Study laser-plasma interaction in a preformed plasma channel in a high repetition rate regime  
Laser-driven Undulator Coherent Radiation Source

### Instituto Superior Técnico

Superradiance from non-linear Thomson Scattering

### Instrumentation Technologies

Development and Validation of an X-band Low Level Radio Frequency prototype for EuPRAXIA

### Lunds Universitet

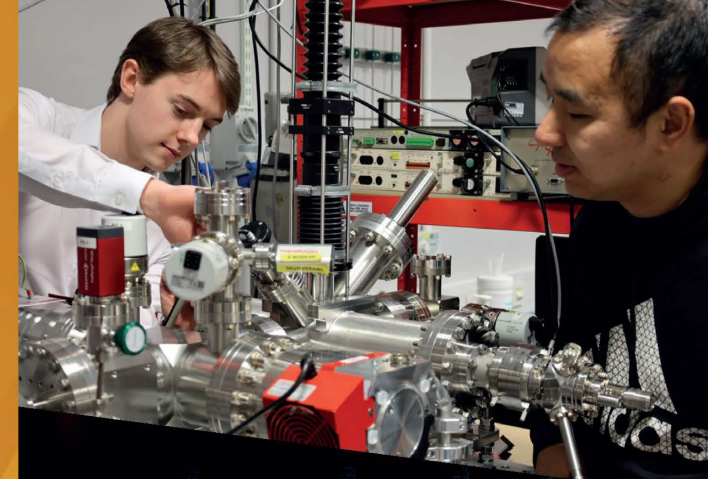
Short-pulse Laser-driven Injector

### University of Pécs

THz-driven Dielectric Accelerators

### University of Liverpool

Ultra-short Bunch Length Measurements with Femtosecond Resolution  
Laser-driven Proton Beam Therapy



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Instituto Superior Técnico, Lisbon

## Training & Events

The fundamental core of the training is a dedicated cutting-edge research project for each Fellow at their host institution.

The training program is designed to address a wide range of employment skills with the aim to provide all Fellows with the competences required for their future researcher careers in both, academia and industry. All students will be enrolled into a structured PhD program and benefit from a combination of local and network-wide trainings within EuPRAXIA-DN. This includes courses at the different host institutions, alongside network-wide trainings which will be made available to the wider scientific community.