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POWER OF LIGHTNING

TO PARTICLE  
ACCELERATORS

EUROPEAN  
PLASMA RESEARCH  
ACCELERATOR WITH  
EXCELLENCE IN  
APPLICATIONS



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EUPRAXIA

# DESIGNING THE FUTURE

Particle accelerators are essential tools in science and technology. From huge colliders like the LHC to van-sized accelerators used in hospitals and factories, these machines are routinely used in a wide range of applications like cancer therapy, food sterilization, manufacturing, and fundamental research.

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# INTERNATIONAL COLLABORATION

The EuPRAXIA consortium is preparing a conceptual design for the world's first multi-billion volt laser-plasma accelerator with enough quality for industrial applications, x-ray sources and particle physics research.

EuPRAXIA brings together a consortium of 16 laboratories and universities from 5 EU member states, with the support of 22 associated institutions.

The consortium holds open international events on a regular basis to strengthen collaborations and to assess the development of the project.

# ADVANCED TECHNOLOGIES

A new technology has emerged that may reduce dramatically the size and cost of accelerators, facilitating the access of hospitals and universities to these tools and multiplying their applications.

So-called laser-plasma accelerators use high-power lasers to create a channel of plasma (like a lightning bolt) in a gas cell.

Generating several billion of volts in just a few millimeters, electrons can be accelerated to near the speed of light in a much smaller distance than in a conventional accelerator.

Image of a plasma cell.

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