TAU Systems Collaborates with Global Pioneers ELI Beamlines & University of Texas on Laser-Driven Particle Acceleration

Collaboration brings together TAU Systems' expertise in industrializing laser-driven particle acceleration with global academic excellence in the field.

TAU Systems Collaborates with Global Pioneers ELI Beamlines and University of Texas on Laser-Driven Particle Acceleration

AUSTIN, TX, UNITED STATES, October 22, 2024 /EINPresswire.com/ -- TAU Systems, the producer of ultrafast, compact laser-plasma accelerators and secondary radiation sources, announces a research collaboration with ELI ERIC and University of Texas (UT) at Austin. The collaboration brings together TAU Systems' expertise in industrializing laser-driven particle acceleration with global academic excellence in the field.

The collaboration will consist of a series of experiments based on Laser Wake Field Acceleration (LWFA) using the Texas Petawatt laser system (housed at UT Austin), with the goals to generate multi-GeV electron beams for applications such as radiography and muon production.

> We are excited to bring together global pioneers in laser-driven particle acceleration and forge a collaboration to drive forward this exciting field of science."
>
> *TAU Systems CEO, Bjorn Manuel Hegelich*

The scientists will also make use of the "nanoparticle-assisted Laser Wake Field Acceleration", a novel technique which recently allowed researchers from TAU Systems together with UT Austin, several national US laboratories and European Universities to generate and accelerate electrons to record energy of 10 GeV over a distance as short as 10 cm.

Throughout these experiments, a new upgrade at the Texas Petawatt will be tested, under which the repetition rate of the system was increased three

times, up to a shot every 20 minutes which means a significant increase in the number of experiments to be performed Tripling the amount of research that can be done in a day. Further experiments are foreseen using ELI's Petawatt beamlines available in Czech Republic, at the ELI-Beamlines facility.

The collaboration began in June 2024 and will take place over the course of one year, consisting of several experimental campaigns with the teams collaborating at the Texas Petawatt facility. During this time period, a mutual exchange of personnel and expertise will take place between members of TAU, several research groups from UT and ELI.

TAU Systems CEO, Bjorn Manuel Hegelich said of the collaboration, "We are excited to bring together global pioneers in laser-driven particle acceleration and forge a collaboration to drive forward this exciting field of science. Our team here at TAU Systems will provide the gas targets used for the experiments, and the expertise in Laser Wake Field Acceleration

ELI ERIC Director General Allen Weeks said "ELI ERIC, with its unparalleled infrastructure and expertise, is excited to join forces with TAU Systems and the University of Texas at Austin. By pooling our capabilities, we are accelerating innovation in laser-driven particle acceleration, a field critical to the future of science and industry alike."

This collaboration can accelerate the path towards democratizing access to laser driven particle and radiation sources, from both electrons and neutrons to X-rays and Gamma rays. The development of these products aligned with innovative "pay-to-play" beam access at TAU Labs application centers will accelerate research, both fundamental and applied, into many exciting and relevant areas such as radiation testing for space-bound electronics, higher resolution 3D materials imaging, battery development, biomolecules structure determination and engineering, material testing for nuclear fusion reactors and nuclear waste reduction.

Jules Tipler
Influence emobility
email us here
Visit us on social media:
LinkedIn
