Nottingham Scientists Lead the Way in Laser Innovation Project

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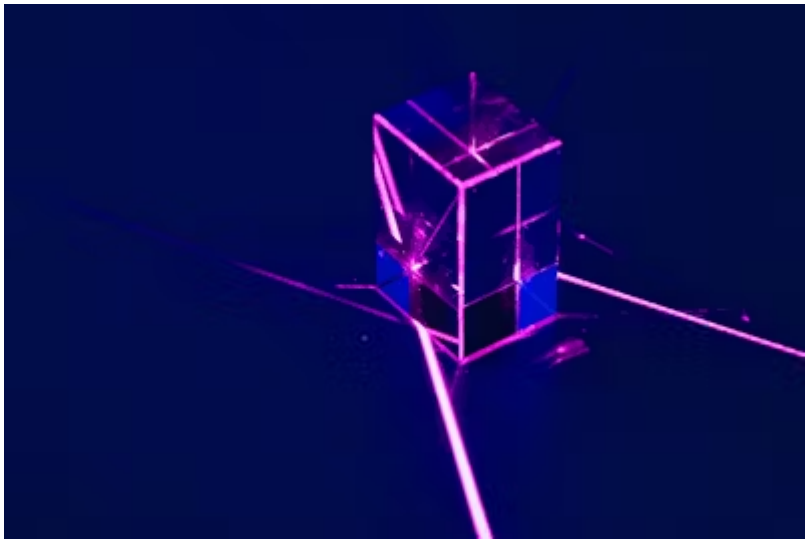

Researchers from the University of Nottingham's School of Chemistry are at the forefront of a groundbreaking new laser technology project, SUPERLASER. This EU-funded initiative aims to develop a new type of laser based on halide perovskite materials, offering superior performance and environmental sustainability.

The project, coordinated by the National Centre for Scientific Research "Demokritos" in Athens, seeks to address the limitations of current laser technologies, such as their reliance on critical raw materials and thermal noise instability. By harnessing the unique properties of halide perovskites, SUPERLASER aims to create lasers that are more stable, precise, and environmentally friendly.

Dr. Katherine Inzani's group at the University of Nottingham is leading the theoretical aspects of the project, using computational techniques to identify and predict the properties of optimal perovskite materials. This research will guide the experimental work of the project partners, enabling the development of highly efficient and environmentally friendly laser devices.

The SUPERLASER project is funded by the European Innovation Council (EIC) Pathfinder Programme and involves a consortium of nine partners from seven countries.

"This ambitious European effort will take us from theoretical materials predictions all the way to device fabrication, establishing a new type of laser that will be crucial to advance high-tech applications including quantum computing" **Dr Katherine Inzani**, School of Chemistry

"Creating lasers that are both powerful and have an extremely precise output while also being environmentally friendly requires highly innovative approaches in the development of new materials and the design of the devices. The interdisciplinary project SUPERLASER will address these challenges by

employing synergies across scientific, technological and ecological boundaries.
Dr. Maria Vasilopoulou, Director of Research at the Institute of Nanoscience and Nanotechnology
Throughout the project environmentally sound processes with zero carbon footprint will be applied and recyclability and reuse protocols will be implemented continuously to minimise e-waste and environmental impact.”

SUPERLASER’s ultimate goal is to realise the first electrically pumped perovskite laser, potentially paving the way for its application in quantum technologies, photovoltaics, and 6G communications, where coherent light plays a critical role in network synchronisation.