



PRESS RELEASE

More efficient batteries with quantum photonics

Politecnico di Milano coordinates the EU QLASS project

Milan, 17 December 2024 – The **QLASS** project, coordinated by **Politecnico di Milano**, aims to develop a quantum photonic computer, a computer that utilises the quantum properties of photons, the elementary particles that make up light. The QLASS project, which has received **€6 million in funding** from the European Union, under the “Quantum Flagship” program, will **last 3 years**.

Quantum computers are computing devices that utilise the properties of quantum mechanics to accelerate the resolution of numerous computational problems. The advantage of these computers is that some problems, such as the development of new drugs, which would take millions of years to solve on the most powerful conventional computer, could be solved in minutes on a quantum computer.

No quantum computers currently exist that are large and accurate enough to solve problems of industrial importance. A global effort, involving governments, universities, start-ups and large technology companies, is underway to build one.

“The QLASS project will make an important contribution to the development of versatile modular components that can be widely used in industry and research, as well as to training a new generation of quantum technology experts,” explains **Giulia Acconcia**, coordinator of the QLASS project.

QLASS will develop **novel algorithms** capable of exploiting the features of the innovative quantum photonic processor. To demonstrate the potential of the new hardware and software, the photonic quantum computer will be used to **design high-capacity, efficient** lithium batteries.

The development of lithium batteries that are increasingly compact, lightweight, fast-charging and long-lasting is a highly complex challenge that can showcase the potential of a quantum computer compared to a traditional one. Nevertheless, batteries are now a key area of research due to their wide range of applications, from smartphones to cars and electric bicycles.

QLASS is coordinated by Politecnico di Milano and brings together experts from European academia and industry. The partners are: Centre National de la Recherche Scientifique, Ephos, Fondazione Politecnico di Milano, Pixel Photonics, Sapienza University of Rome, Schott AG, Unitary Fund France and Université de Montpellier.

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