





### Project Handbook

Project title: Deep Ultraviolet Lasers For Quantum Technology

Grant agreement ID: 101080164





## Consortium



The Fritz Haber Institute of the Max Planck Society (FHI), was founded in Berlin, Germany in 1911. The institute focuses on investigating the fundamental principles underlying the chemical conversion of matter and energy at surfaces and interfaces and it has a longstanding history of manipulating atoms and molecules with laser light. The PIs have pioneered the use of electric, magnetic and electromagnetic fields to manipulate, cool and trap diatomic, polar molecules.

Pls: Stefan Truppe, Sidney Wright, Gerard Meijer



The University of Bonn is a public research university located in Germany founded in 1818. It has 6 Clusters of Excellence including the Matter and Light for Quantum Computing cluster. The PI, Simon Stellmer, leads the Quantum Metrology research group and his research is focused on the development of optical clocks and other high-precision sensors (e.g. gyroscopes) to be applied outside of the research lab, e.g. for geodesy and network synchronisation.

PI: Simon Stellmer





The University of Florence is an Italian public research university located in Florence, Italy, was first established in 1321, it subdivided into 12 schools including Physics. The PI, Nicola Poli has more than 20 years of experience in experimental research in atomic, molecular, and optical physics, and in high-resolution spectroscopy, atomic frequency standards, laser-cooling of alkaline and alkaline earth atoms, ultracold atoms in optical lattices, atomic interferometry, non-linear optics.

PI: Nicola Poli



Chalmers University of Technology (<u>Swedish</u>: *Chalmers tekniska högskola*, commonly referred to as Chalmers) is a private research university located in Gothenburg, Sweden. leads the Quantum Technology and Materials research group at the Chalmers University of Technology. The PI, Yasmin Sassa, focuses her research towards the advanced characterisation of a wide scope of materials ranging from correlated electron systems (e.g., superconductors) to quantum materials for energy-efficient electronics/spintronics (e.g., silicene, skyrmions) as well as sustainable energy compounds (e.g., sodium and potassium-based battery materials).

#### PI: Yasmin Sassa





#### Consortium



Vexlum is a spin-off from the Optoelectronics Research Centre (ORC), Tampere University of Technology. The company has been a leading research group in VECSEL technology for more than a decade. The group has focused on developments concerning optoelectronics materials enabling VECSELs at new wavelengths, scalable manufacturing processes, and application-specific systems engineering.

Researchers Involved: Jussi-Pekka Penttinen (CEO/CTO), Mircea Guina (CSO)

Agile Optic GmbH was founded in 2019 to make customized high-quality optomechanical systems accessible for a broad range of research groups and companies.



The PI, Stephan Hannig, became head of the clock lab at the Hannover Institute of Technology (HITec) to concentrate on the development of compact and robust hardware for the next generation of optical clocks. He founded Agile Optic GmbH in 2019 as a Spin-Off. AGILE produces high-quality customised optomechanical systems for customers from all over the world, especially research institutes and high-tech companies. At present, systems for nonlinear optical frequency conversion are their primary business.

Researchers Involved: Stephan Hannig



EKSMA Optics is a manufacturer and global supplier of precision optical components, optical systems, laser & nonlinear frequency conversion crystals, opto-mechanics and electro-optical Pockels cells with drivers used in lasers and other optical instruments. The PIs involved are, the director of marketing and business development at EKSMA, Daugirdas Kuzma, the thin f il m expert Sabina Kuprenaite and optical engineer and phycisist Vidas Nagreckis

Researchers Involved: Daugirdas Kuzma, Sabina Kuprėnaitė, Vidas Nagreckis





## Work Plan

- The purpose of UVQuanT is to demonstrate new DUV laser systems and leverage advantages of DUV light in emerging quantum technologies (QT).
- UVQuanT combines industrial and scientific expertise to develop new, cost-effective lasers and optics for the ultraviolet, closing the technology gap between the visible and the DUV.







## Work Plan







# The UVQuanT Consortium

