

SIQS - Simulations and Interfaces with Quantum Systems



Simulations and Interfaces with Quantum Systems (SIQS) aims to use strong quantum correlations in order to develop systems, involving large-scale entanglement, that outperform classical systems in a series of relevant applications.

The best way to move towards this goal and to make it reachable on the medium term is to use or to design systems based on direct and deterministic interactions between individual quantum entities.

The objectives of the project are to:

1. Control direct and deterministic interactions between individual elements by

- improving known systems, from AMO as well as from solid-state physics
- developing new ones, including combinations across those two domains.

2. Exploit such interaction to develop and implement

- quantum simulations of both digital and analogue type
- quantum interfaces for communication and sensing.

SIQS objectives are then reflected in the structure of the workplan, which contains four closely related science and RTD sub-projects:

- **SP1: Enabling Technologies**
- **SP2: Quantum Simulation**

- **SP3: Quantum Interfaces**
- **SP4: Exploitation**

A fifth Sub-Project, **SP5: Management and Communication**, will ensure the smooth running of the project.

Source URL: <http://qurope.eu/projects/siqs>