

MOQS Molecular Quantum Simulation

15 Phd positions open in an international research project – apply now!

About the project

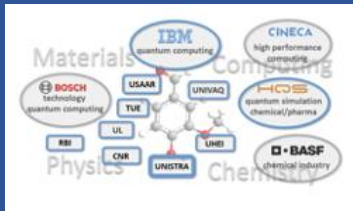
An international consortium will train together 15 phd students ('early stage researchers', ESRs) in the fields of quantum simulations of molecular structure and dynamics, at the crossroad of chemistry, solid-state and quantum optical physics, materials, classical and quantum computer science.

An EU project

The MOQS programme has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement number 955479.



- Simulation of electronic structure properties in NISQ devices (IBM Research, Switzerland) ESR 1
- High quality and hardware-efficient wavefunctions for the VQE (Università dell'Aquila, Italy) ESR 2
- Towards simulations of coupled nuclear and electronic dynamics using q. hardware (University of Heidelberg, Germany) ESR 3
- Theoretical investigation of hardware-optimized multi-qubit Rydberg gates (University of Strasbourg, France) ESR 4
- Towards quantum computing for pharmaceutical applications (HQS, Germany) ESR 5
- Exact tensor-network based methods for interacting many-body dynamics (University of Ljubljana, Slovenia) ESR 6
- Tailoring control to efficiently solve molecular chemistry problems (WMI, Germany) ESR 7
- Programmable atomic q. registers with fast multiqubit interactions via stroboscopic Rydberg excitation (University of Strasbourg, France) ESR 8
- Hardware-optimized state preparation and benchmarking (University of Saarland, Germany) ESR 9
- Theoretical investigation of quantum transport in Rydberg open systems (University of Strasbourg) ESR 10
- Controlled dissipation for quantum simulations in Rydberg systems (CNR, Italy) ESR 11
- Hardware-specific multi-qubit entanglement for efficient molecular q. computation (TU Eindhoven, Holland) ESR 12
- Frustration effects in molecular quantum simulations with long-range interactions (RBI, Croatia) ESR 13
- Strongly correlated models on quantum computers (IBM Research, Switzerland) ESR 14
- Hybrid quantum-classical quantum simulations for molecular spectra and dynamics (University of Strasbourg, France) ESR 15



An international, interdisciplinary and intersectoral training and research project

- Apply and benefit from a full training programme including secondments to our network partners, an individualized career development programme and the enrollment in the local grad school.
- MOQs offers full positions with a competitive salary according to EU provisions.

Requirements

- Candidates must not have resided or carried out their main activities (work, studies, etc.) in the country of their future host organisation for more than 12 months in the 3 years immediately prior to the recruitment.
- Candidates cannot yet hold a PhD and must be in the first four years of their research experience.
- The positions are open from Nov. 1st 2020 to Dec. 1st 2020.
- Expected starting date from March 1st 2021 to Oct. 2021 or upon agreement.
- Further information and application process via the website www.moqs.eu

Our consortium



Further information

www.moqs.eu

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