

QuantERA Funded Projects' Mid-term Strategic Conference

Granada, 13-14 November 2019

Universidad de Granada, Escuela Técnica Superior de Ingeniería de Edificación

Fuentenueva University Campus

Calle Dr. Severo Ochoa, s/n, 18001 Granada

Day 1: 13th November

Time	QUANTUM TECHNOLOGIES IN EUROPE	Speaker
08:30	<i>Welcome Coffee</i>	
09:00	Welcome	Enrique Playán Jubillar AEI Director Pablo Cortés Achedad (TBC) Junta de Andalucía Universidad de Granada (TBC) Sylwia Kostka QuantERA
9:45	Keynote: Quantum Technologies, Quo Vadis?	Nicolas Gisin
10:30	<i>Coffee Break</i>	
11:00	European Quantum Ambitions	Pascal Maillot European Commission
11:30	Quantum Technologies Flagship Unifying Vision	Tommaso Calarco Quantum Flagship
12:00	Linking National and Regional Quantum research and innovation through Europe <i>Panel discussion on how to create synergies on the European level between with the representatives from QuantERA, Quantum Technology Flagship, National Programmes and Quantum Research Institutes.</i> <u>QuTech Delft</u> <i>Connecting Research & Industry</i> <u>Network of Excellence Quantum Spain</u> <i>Spanish activities in Quantum. Platform created by CSIC.</i> <u>IFMIF-DONES</u> <i>Use of Structural funds and other funds to set up research infrastrucutres and centres</i> <u>The Institute of Photonic Sciences</u> <i>Innovation strategy</i> <u>National funding in Quantum Technologies</u> <i>Overview of national Quantum programmes</i> <u>The Quantum Flagship Ecosystem</u> <i>QT Flagship ecosystem and connections with national programs and Industry.</i>	Freeke Heijmann Juan José Ripoll Javier Praena Rob Sewell Marek Żukowski Thierry Debuisschert
13:45	Wrap up and conclusions Introduction to QuantERA Call 2019 poster session	Florence Quist, QuantERA Marlena Wosiak, QuantERA



14:00 **Lunch Break**
& Poster Session presenting projects funded within the QuantERA Call 2019

PRESENTATIONS of QuantERA PROJECTS

15:00	Introduction: QuantERA mid-term Evaluation	Nicoleta Dumitrache QuantERA
15:10	QuantERA Project presentations: Q-Information	Chair: Marek Kus Mehul Malik
	<ul style="list-style-type: none"> • Quantum Information Processing with Complex Media (QuompleX) • Theory-Blind Quantum Control (TheBlinQC) 	Florian Mintert
15:40	QuantERA Project presentations: Q-Communication	Chair: Marek Kus Thomas Fromherz
	<ul style="list-style-type: none"> • CMOS Compatible Single Photon Sources based on SiGe Quantum Dots (CUSPIDOR) • Hyper-entanglement from ultra-bright photon pair sources (HYPER-U-P-S) • Silicon Photonics for Quantum Fibre Networks (SQUARE) 	Ana Predojevic Karsten Rottwitt
16:10	<i>Coffee Break</i>	
16:40	QuantERA Project presentations: Q-Computation	Chair: Miguel Angel Martin-Delgado Roberto Osellame J�r�mie Roland Marco Salluzzo Lars Schreiber
	<ul style="list-style-type: none"> • High dimensional quantum Photonic Platform (HiPhoP) • Quantum algorithms and applications (QuantAlgo) • QUANTum Technologies with 2D-Oxides (QUANTOX) • Long-range quantum bus for electron spin qubits in silicon (Si QuBus) • Scaling Up quantum computation with MOlecular spins (SUMO) • 2D hybrid materials as a platform for topological quantum computing (Topoquant) • Quantum Code Design and Architecture (QCDA) • Topologically protected states in double nanowire superconductor hybrids (SUPERTOP) 	Fernando Luis Werner Wegscheider Earl Campbell Szabolcs Csonka
18:00	End of Day 1 of the Meeting	

19:00 **Dinner & Cocktail**
Restaurante Carmen de la Victoria: Cuesta del Chapiz, 9, 18010 Granada



Day 2: 14th November

9.00-14.30

PRESENTATIONS of QuantERA PROJECTS

08:30

Welcome Coffee

09:00

QuantERA Project presentations: Q-Metrology

- MICROwave quantum SENSing with diamond color centers (MICROSENS)
- Spin-based nanolytics – Turning today's quantum technology research frontier into tomorrow's diagnostic devices (NanoSpin)
- ORganic QUantum Integrated Devices (ORQUID)
- Optomechanical quantum sensors at room temperature (QuaSeRT)
- Trapped Atom Interferometers in Optical Lattices (TAIOL)
- Controlling EPR and Bell correlations in Bose-Einstein condensates (CEBECC)
- Scalable Electrically Read Diamond Spin Qubit Technology for Single Molecule Quantum Imagers (Q-Magine)
- Cavity-Enhanced Quantum Optical Clocks (Q-Clocks)

Chair: Timothy Duty

Thierry Debuisschert

Jens Anders

Costanza Toninelli

Francesco Marin

Franck Pereira dos Santos

Christoph Westbrook

Milos Nesladek

Matteo Barbiero

10:10

QuantERA Project presentations: Q-Simulation

- Polariton lattices: a solid-state platform for quantum simulations of correlated and topological states (InterPol)
- Non-equilibrium dynamics in Atomic systems for QUAntum Simulation (NAQUAS)
- Quantum Technologies For LAttice Gauge theories (QTFLAG)
- Towards Room Temperature Quantum Technologies (RouTe)
- Entangled Rydberg matter for quantum sensing and simulations (ERYQSEN)

Chair: André Xuereb

Jacqueline Bloch

Jérôme Beugnon

Simone Montangero

Guido Pupillo

Markus Hennrich

11:00

Coffee Break



11:30

Panel discussion: Strategic discussion on QuantERA

Strategic discussion on the future direction of QuantERA: with the representatives of QuantERA, Quantum Technology Flagship and National Quantum Network

Setting the scene: from QuantERA I to QuantERA II

Francesco Saverio Cataliotti QuantERA

Experiences from QuantERA funded projects

Ana Predojević, HYPER-U-P-S

National perspective: Quantum Community Network

Yasser Omar,
Quantum Community Network

QT Flagship: Strategic Research Agenda

Elisabeth Giacobino
QT Flagship Scientific Advisory Board

Quantum Flagship & QuantERA

Tommaso Calarco,
Quantum Flagship

13:00

Announcement industry focused 2020 Event for QuantERA projects

Ali Anjomshoaa, QuantERA

13:15

Final Conclusions

Konrad Banaszek, QuantERA

13:30

Lunch

Day 2:

INTERNAL QuantERA MEETINGS (14:30-18:30)

14:30

Introductory meeting for the Call 2019 funded projects Marlena Wosiak, QuantERA

15:30

Three parallel QuantERA Meetings (Closed sessions)

QuantERA CSC

Consortium Steering
Committee Meeting

QuantERA SAB

**Strategic Advisory
Board Meeting**

QuantERA Funded Projects

**Projects & QT Flagship
SEB Meeting**

18:30

End of Day 2 of the Meeting

