

# Symposium Quantum Cooperativity of Light and Matter (SYQC)

jointly organised by  
the Quantum Optics and Photonics Division (Q),  
the Atomic Physics Division (A), and  
the Molecular Physics Division (MO)

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Cooperative behavior is ubiquitous in nature. It can be understood as the enhanced response of a system of many particles with respect to isolated entities such that the ensemble behaves differently than a single unit. In the quantum domain the collective response is brought about by some mutual coupling among the particles establishing non-local and long-range quantum correlations in space and time. Quantum collective behavior induced by the buildup of quantum spatio-temporal correlations in mesoscopic light-matter systems is the topic of the Symposium Quantum Cooperativity of Light and Matter. The symposium brings together leading scientists with expertise in theoretical and experimental quantum optics and condensed-matter physics to investigate a wide variety of experiments and platforms.

## Overview of Invited Talks and Sessions

(Lecture hall Audimax)

### Invited Talks

SYQC 1.1	Thu	10:30–11:00	Audimax	<b>Super- and subradiant states of an ensemble of cold atoms coupled to a nanophotonic waveguide</b> — ●ARNO RAUSCHENBEUTEL
SYQC 1.6	Thu	12:00–12:30	Audimax	<b>Cooperative Effects in Pigment-Protein Complexes: Vibronic Renormalisation of System Parameters in Complex Vibrational Environments</b> — ●SUSANA F. HUELGA
SYQC 2.1	Thu	14:00–14:30	Audimax	<b>Quantum simulation with coherent engineering of synthetic dimensions</b> — ●PAOLA CAPPELLARO
SYQC 2.6	Thu	15:30–16:00	Audimax	<b>Quantum Fractals</b> — ●CRISTIANE MORAIS-SMITH

### Sessions

SYQC 1.1–1.6	Thu	10:30–12:30	Audimax	<b>Quantum Cooperativity of Light and Matter - Session 1</b>
SYQC 2.1–2.6	Thu	14:00–16:00	Audimax	<b>Quantum Cooperativity of Light and Matter - Session 2</b>
SYQC 3.1–3.8	Fri	10:30–12:30	Q-H15	<b>Quantum Cooperativity (joint session Q/SYQC)</b>