

## 25-28 April 2021 Online

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### Dear SCOM 2021 participants

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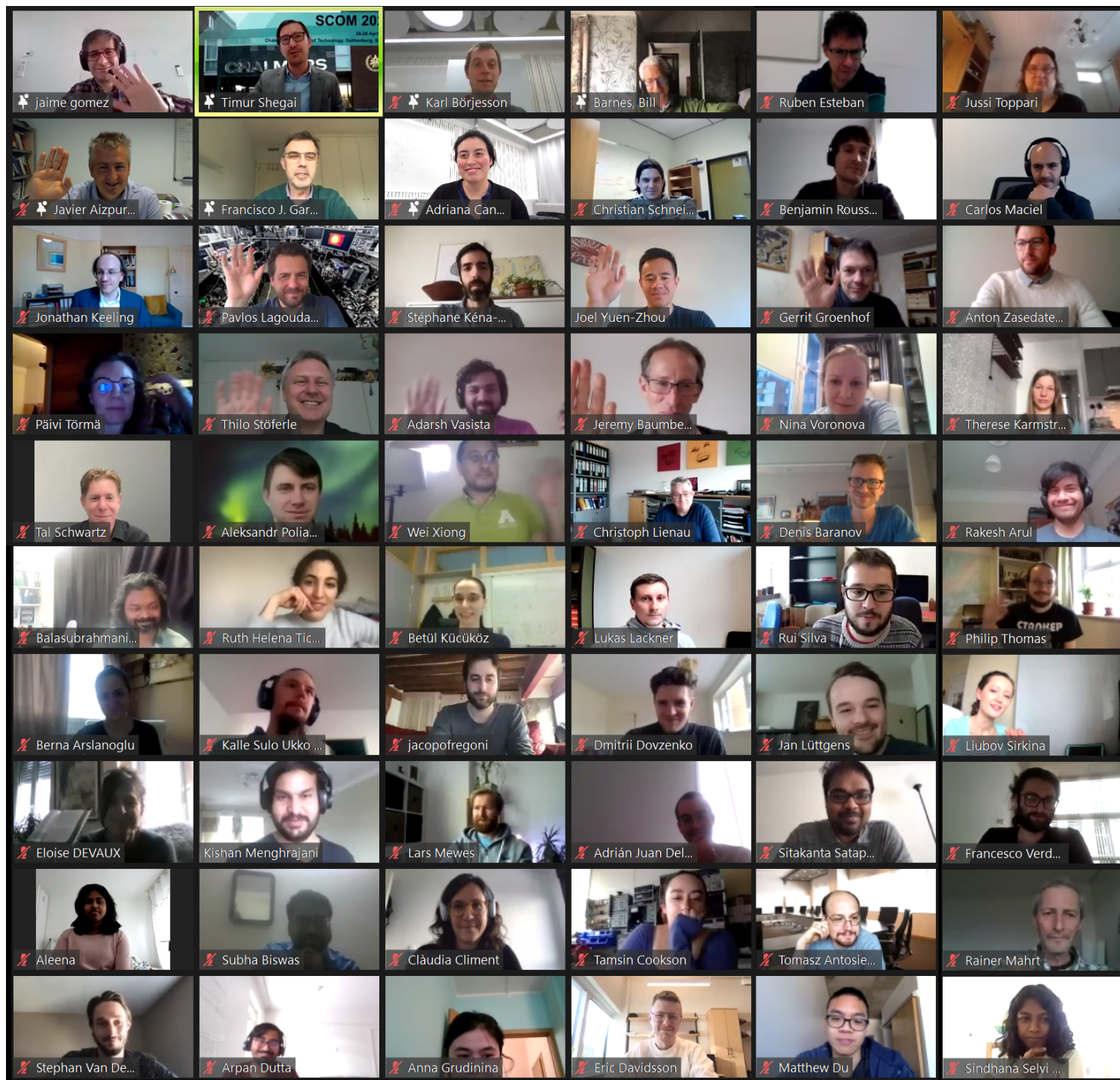
Thank you for your engaged participation!

With your help it became great despite the restrictions. We had an average of about 130 participants in the meeting at all times.

We hope you enjoyed it as much as we did!

See you (hopefully, in real life) in 2023 in San Diego!

Here is a picture of everyone with the camera on during the closing ceremony!



The meeting took place FULLY ONLINE on ZOOM (tutorials here) during 26-28 April 2021

- The meeting will be full 3 days
- A PhD school before the meeting will also take place online
- The **poster session** will take place on zoom breakout rooms
- The event is free of charge
- **Important: the conference will not be recorded**

**About Strong Coupling with Organic Molecules (SCOM)**

"SCOM 2021 is the third international workshop on strong coupling in organic materials. It will be held in Gothenburg in Sweden on 26-28 April 2021. It builds on the very successful workshops, SCOM16 and SCOM18, held in San Sebastian and in Eindhoven in 2016 and in 2018, respectively.

The workshop brings together researchers from different disciplines including: Photonics, Quantum Optics, Plasmonics, Materials, Chemistry and Condensed Matter Physics to discuss the latest developments in the study of the strong coupling involving organic molecules and optical cavities. Leaders in the field discuss recent results on phenomena that involve polaritonic states, molecular excitations, molecular vibrations and their complex interactions, giving rise to a plethora of fascinating effects of both scientific and technological interest."

## Invited speakers

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Franco Nori (RIKEN)

*"Quantum Nonlinear Optics without Photons, how to excite two or more atoms simultaneously with a single photon, and other unusual properties of ultra-strongly-coupled QED systems"*

Jerome Faist (ETH Zurich)

*"Engineeering vacuum fields with metamaterials: effects of non-locality and breaking time-reversal symmetry"*

Ido Kaminer (Technion)

*"Strong Coupling by Nonlocal Light–Matter Interactions"*

Päivi Törmä (Aalto University)

*"Polarization textures, correlations and sub-picosecond thermalization of Bose-Einstein condensates in strongly coupled plasmonic lattices"*

Mikhail Noginov (Norfolk State University)

*"Control of Physical Phenomena with Nonlocal Metal-Dielectric Environments"*

Wei Xiong (University of California in San Diego)

*"Ultrafast Dynamics and Interactions of Molecular Vibrational Polaritons*

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Thomas Ebbesen (University of Strasbourg)

*"Chemical and material properties under strong coupling"*

Jenny Clark (University of Sheffield)

*"Triplet-triplet annihilation in films, crystals and microcavities"*

Ruben Esteban (DIPC, San Sebastian)

*"Bringing optomechanics to the molecular scale"*

Johannes Feist (University Autonoma de Madrid)

*"Ultrafast molecular polaritonics in lossy plasmonic & hybrid cavities"*

Matthew Pelton (University of Maryland)

*"Room-temperature strong coupling between plasmons and single quantum dots"*

Stephane Kena-Cohen (Polytechnique de Montréal)

*"Molecular strong coupling and novel structures for manipulating light"*

Pavlos Lagoudakis (University of Southampton)

*"Polaritonic computing: a versatile platform for full logic and analogue simulation"*

Christian Schneider (University of Würzburg)

*"Room temperature Exciton-Polaritons and their Condensates in Optical Lattices"*

Jonathan Keeling (University of St Andrews)

*"Modelling Organic polariton condensation: Mean-field and beyond"*

Jeremy Baumberg (Cambridge University)

*"Picocavities: Plasmonic Forces at the Picoscale"*

Koen Vandewal (Hasselt University)

*Organic opto-electronics enhanced with weak and strong light-matter coupling"*

Christoph Lienau (University of Oldenburg)

*"Two-dimensional electronic spectroscopy: A powerful tool for probing strong couplings in molecular aggregates"*

Joel Yuen-Zhou (University California San Diego)

*"Vibropolaritonic chemistry thorough dark modes and polariton condensation"*

### **Contributed talks**

David Zueco (Spain)

*"Strong coupling of magnetic molecules to superconducting circuits and its application in quantum technologies"*

Girish Lakhwani (Sidney)

*"Organic Polariton Lasing with Molecularly Isolated Perylene Diimides"*

Marco Dusel (Würzburg)

*"Room temperature organic exciton-polariton condensate and topological polariton laser in a lattice"*

Jan Lüttgens (Heidelberg)

*"Radiative Pumping of Exciton-Polaritons by Luminescent sp<sup>3</sup> Defects in Single-Walled Carbon Nanotubes"*

Lars Mewes (Lausanne)

*"Energy relaxation in molecular cQED systems: Insights from coherent two-dimensional spectroscopy"*

Thilo Stöferle (IBM Zurich)

*"Polariton condensation in a 2D Lieb lattice with a tunable microcavity at room temperature"*

Ora Bitton (Weizmann Institute of Science)

*"Vacuum Rabi splitting of bright and dark plasmonic cavity modes in the limit of a single quantum emitter"*

Kenji Hirai (Hokkaido, Japan)

*"Vibrational Strong Coupling in Organic Reactions and Self-assembly"*

Gerrit Groenhof (Jyväskylä)

*"Multi-Scale Molecular Dynamics Simulations of Molecular Ensembles Strongly Coupled to Low-Quality Dispersive Optical Cavities"*

Jussi Toppari (Jyväskylä)

*"Effect of molecular Stokes shift on polariton dynamics"*

Tomasz Antosiewicz (Warsaw University)

*"Nanoscale polaritons in a first-principles picture"*

Markus Kowalewski (Stockholm)

*"Controlling the photostability of molecules with optical cavities -- the role non-adiabatic dynamics and dissipation"*

Matthijs Berghuis (Eindhoven)

*"Enhancing triplet fusion in tetracene crystals by strong light-matter coupling"*

Felipe Herrera (Santiago, Chile)

*"Chemical reactivity of vibrational polaritons in the ultrastrong coupling regime"*

Kyriacos Georgiou (Lidzey/Sheffield)

## *Strong coupling in organic-semiconductor slab microcavities*

Adarsh Vasista (William L Barnes/Exeter)

*"Soft microresonators for molecule–cavity coupling: what, why, and how"*

Christian Schäfer (Rubio/Hamburg)

*"Cavity induced inhibition of chemical reactions under resonant vibrational strong coupling from first principles"*

Francesco Todisco (SDU)

*"Magnetic and electric Mie-Exciton polaritons in silicon nanodisks"*

Tal Schwartz (Tel Aviv)

*"Strong Coupling with Collective Terahertz Vibrations in Organic Materials"*

Blake Simpkins (Naval. Washington)

*"Strong Vibrational Coupling for Chemical Control and Optical Modulation"*

### **International organizing committee:**

*Jaime Gómez Rivas, (Dutch Institute for Fundamental Energy Research and Eindhoven University of Technology, The Netherlands) Bill Barnes, (University of Exeter, UK) Francisco García Vidal, (Universidad Autónoma de Madrid and DIPC, Spain) Javier Aizpurua (Center for Materials Physics, CSIC-UPV/EHU and DIPC, the Basque Country)*

### **Local organizing committee:**

*Timur Shegai (Chalmers University of Technology) and Karl Börjesson (University of Gothenburg)*

Page manager Published: Thu 29 Apr 2021.