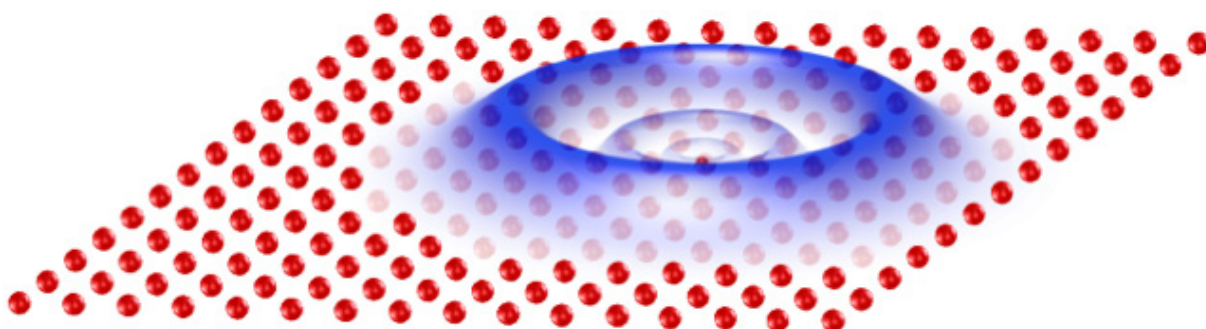


5th International Workshop
on
RYDBERG EXCITONS IN SEMICONDUCTORS
10-12 MAY 2022



Scientific coordinators:

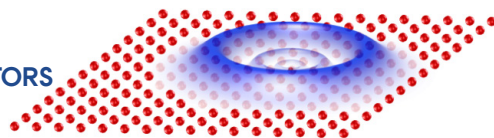
- Thomas Pohl, DK
- Richard Schmidt, DK
- Stefan Scheel, DE
- Manfred Bayer, DE
- Matthew P.A. Jones, UK

Sponsor:



Danmarks
Grundforskningsfond
Danish National
Research Foundation

5th International Workshop
on
RYDBERG EXCITONS IN SEMICONDUCTORS
10-12 MAY 2022



TUESDAY 10 MAY

09:00 - 09:30 ARRIVAL AND REGISTRATION

09:30 - 09:40 OPENING

Session chair: Stefan Scheel

09:40 - 10:20 **Hamid Ohadi** (University of St. Andrews)

Rydberg polaritons in a Cu₂O microcavity

10:20 - 11:00 **Ajit Srivastava** (Emory University)

Interacting Excitons and Electrons in vdW Heterostructures

11:00 - 11:20 COFFEE BREAK

11:20 - 12:00 **Stephen Lynch** (Cardiff University)

Unlocking the Potential of Cuprous Oxide for Quantum Technologies

12:00 - 12:20 **Katharina Brägelmann** (Technical University of Dortmund)

Neutralisation of detrimental effects on the Rydberg exciton absorption spectrum

12:20 - 14:20 LUNCH

Session chair: Stephan Steinhauer

14:20 - 15:00 **Jörg Main** (University of Stuttgart)

Semiclassical approaches to Rydberg excitons in cuprous oxide

15:00 - 15:40 **Dirk Semkat** (University of Greifswald)

Electron-hole plasma influence on Rydberg excitons: Consequences for the interpretation of measurements

15:40 - 16:10 COFFEE BREAK

16:10 - 16:50 **Sylvia Zielińska-Raczyńska** (Bydgoszcz University of Science and Technology)

Rydberg excitons in nanoscale Cu₂O systems

16:50 - 17:10 **Florian Morawetz** (University of Rostock)

Towards calculating Rydberg excitons in quantum wells

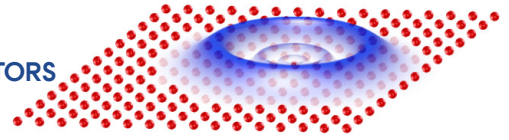
17:10 - 17:50 **Liam Gallagher** (University of Durham)

Microwave-optical coupling via Rydberg excitons in Cu₂O

18:00 - DINNER

19:00 - POSTER + DRINKS

5th International Workshop
on
RYDBERG EXCITONS IN SEMICONDUCTORS
10-12 MAY 2022



WEDNESDAY 11 MAY

Session chair: Richard Schmidt

- 09:20 - 10:00 **Tomasz Smoleński** (ETH, Zürich)
Optical sensing of strongly correlated electronic states in atomically-thin materials
- 10:00 - 10:40 **Georg Bruun** (Aarhus University)
Light-induced topological superconductivity in transition metal dichalcogenide monolayers
- 10:40 - 11:00** **COFFEE BREAK**
- 11:00 - 11:40 **Chun Hung Lui** (University of California, Riverside)
Optical spectroscopy of novel excitonic states in 2D semiconductors and moiré superlattices
- 11:40 - 12:00 **Jan Ertl** (University of Stuttgart)
Signatures of Exciton Orbits in Quantum Mechanical Recurrence Spectra of Cuprous Oxide
- 12:00 - 14:20** **LUNCH**
- Session chair: Marc Aßmann
- 14:20 - 15:00 **Armando Genco** (The Polytechnic University of Milan)
Rydberg excitons dynamics and interacting dipolar excitons and polaritons in atomically thin semiconductors
- 15:00 - 15:40 **Valentin Walther** (Harvard University)
The route to quantum light via semiconductor excitons
- 15:40 - 16:10** **COFFEE BREAK**
- 16:10 - 16:50 **Na Young Kim** (University of Waterloo)
Temperature Study of Rydberg Excitons in Cu₂O
- 16:50 - 17:30 **Hadiseh Alaeian** (Purdue University)
From Dipolar to Rydberg Photonics: Harnessing Atom-Atom Interactions
- 17:30 - 17:50 **Karol Karpinski** (Bydgoszcz University of Science and Technology)
Magneto-optical properties of low dimensional Rydberg systems
- 18:30 -** **CONFERENCE DINNER**



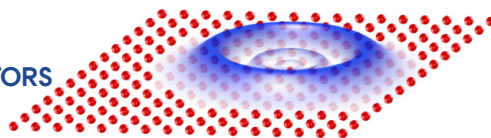
CENTER FOR COMPLEX
QUANTUM SYSTEMS



AARHUS
UNIVERSITY

DEPARTMENT OF PHYSICS
AND ASTRONOMY

5th International Workshop
on
RYDBERG EXCITONS IN SEMICONDUCTORS
10-12 MAY 2022



THURSDAY 12 MAY

Session chair: **Matthew Jones**

- 09:20 - 10:00 **Stephan Steinhauer** (KTH Royal Institute of Technology, Stockholm)
Recent advances on the growth of mesoscale Cu₂O and the spectroscopic characterization of Rydberg exciton states
- 10:00 - 10:40 **Arturo Camacho Guardian** (National Autonomous University of Mexico)
Moiré-induced non-linearities: From multi-photon resonances to translational symmetry breaking in driven-dissipative moiré systems
- 10:40 - 11:00** **COFFEE BREAK**
- 11:00 - 11:40 **Thomas Boulier** (Laboratoire de Physique de l'Ecole Normale Supérieure, (LPENS), Paris)
Self-Kerr effect in the Cu₂O Yellow Rydberg series
- 11:40 - 12:20 **Marc Aßmann** (Technical University of Dortmund)
Rydberg exciton impurity interactions
- 12:20 - 14:20** **LUNCH**
- 14:20 -** **LABTOURS & DISCUSSIONS**