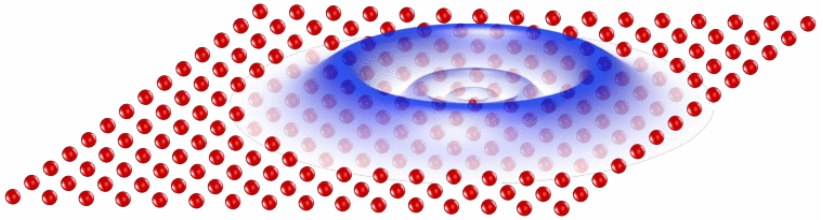
2nd International Workshop on **Rydberg Excitons in Semiconductors**

3-4 May 2018



AARHUS UNIVERSITET
AARHUS INSTITUTE OF ADVANCED STUDIES

DFG

Center for Quantum Optics & Quantum Matter

Organizers:

Thomas Pohl
(Aarhus University)

Stefan Scheel
(Rostock University)

Manfred Bayer
(TU Dortmund)

Sponsors:

Danmarks Grundforskningsfond
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TRR 160

Thursday, 03/05/2018

8:30 - 9:10	Registration
9:10 - 9:20	Opening
chair:	Stefan Scheel
9:20 - 10:00	**Harald Giessen** (University of Stuttgart) *Interaction of Rydberg excitons with higher orbital angular momentum light*
10:00 - 10:40	**Mikhail Glazov** (Ioffe Institute) *Size quantization of Rydberg excitons*
10:40 - 11:10	coffee break
11:10 - 11:50	**Alexey Chernikov** (University of Regensburg) *Excitons in semiconducting 2D materials*
11:50 - 12:30	**Richard Schmidt** (Max Planck Institute for Quantum Optics) *From few-to many-body physics with quantum impurities in fermionic systems*
12:30 - 14:00	lunch
chair:	Richard Schmidt
14:00 - 14:40	**Marc Assmann** (Technical University of Dortmund) *Giant interactions of Rydberg excitons in Cuprous Oxide*
14:40 - 15:20	**Michael Gullans** (Princeton University) *Emergent low-energy physics of light transmission through interacting atomic media*
15:20 - 15:40	**Vanik Shahnazaryan** (ITMO University) *Attractive Coulomb interaction of 2D Rydberg excitons in quantum wells*
15:40 - 16:10	coffee break
16:10 - 16:50	**Matthew Jones** (Durham University) *Towards Quantum Optics with Rydberg Excitons*
16:50 - 17:30	**Markus Kurz** (Rostock University) *Excitonic giant-dipole states in cuprous oxide*
18:00 - 19:00	Dinner
19:00 - 20:00	Poster Session

Friday, 04/05/2018

chair:	Sebastian Hofferberth
9:00 - 9:40	**Charles Adams** (Durham University) *Engineering collective light-matter interactions*
9:40 - 10:20	**Gouxiang Huang** (East China Normal University) *Ultraslow weak-light bullets and vortices and their manipulation in a cold Rydberg gas*
10:20 - 10:50	coffee break
10:50 - 11:30	**Sylwia Zielińska-Raczyńska** (University of Sience and Technology, Bydgoszcz) *Coherent Interactions of Rydberg Excitons with Light*
11:30 - 12:10	**Joerg Main** (University of Stuttgart) *Theoretical investigations of magnetoexcitons in cuprous oxide*
12:10 - 13:40	lunch
chair:	Mikhail Glazov
13:40 - 14:20	**Sebastian Hofferberth** (University of Southern Denmark) *Rydberg quantum optics in ultracold atomic gases*
14:20 - 15:00	**Ivan Shelykh** (University of Iceland) *Interacting 2D Rydberg excitons*
15:00 - 15:20	**David Ziemkiewicz** (UTP, Bydgoszcz) *Tunable Rydberg exciton maser*
15:20 - 15:50	coffee break
chair:	Manfred Bayer
15:50 - 16:30	**Wolfgang Langbein** (University of Cardiff) *Transmission imaging of Rydberg excitons in natural and synthetic Cu2O*
16:30 - 17:10	**Marina Semina** (Ioffe Institute) *The second harmonic generation on Rydberg excitons in Cu2O*
17:10 - 17:50	**Valentin Walther** (Aarhus University) *Nonlinear Optics with Rydberg excitons*
17:50 - 18:00	closing
19:00 -	Conference dinner

Poster contributions

Simon Ball (University of Southern Denmark)	Strongly interacting Rydberg polaritons in Ytterbium
Johannes Block (Rostock University)	Van der Waals interactions between Rydberg atoms near surfaces
Gerard Czajkowski (UTP, Bydgoszcz)	Rydberg Magnetoexcitons in the regime of Franz-Keldysh oscillations
Liam Gallagher (Durham University)	Towards Rydberg Quantum Optics in Excitons
Annika Konzelmann (University of Stuttgart)	Rydberg Excitons in Cu2O - Modifying the absorption spectrum by tuning the selection rules
Sjard Ole Krüger (Rostock University)	Trapping potentials for Rydberg excitons in cuprous oxide Cu_2O
Philipp Lunt (University of Southern Denmark)	Strongly interacting Rydberg polaritons in Ytterbium
Callum Murray (Aarhus University)	Manipulating single photons in strongly interacting ensembles
Joshua Rogers (Durham University)	Towards Rydberg Quantum Optics in Excitons
Patric Rommel (University of Stuttgart)	Magneto-Stark-Effect of Excitons in Cuprous Oxide
Thomas Stielow (Rostock University)	Towards an excitation scheme for giant dipole states of Rydberg excitons in Cu_2O
Nina Stiesdal (University of Southern Denmark)	Rydberg quantum optics in an ultracold Rubidium gas
Valentin Walther (Aarhus University)	Rydberg-excitons interactions in cuprous oxide
Yongchang Zhang (Aarhus University)	Enhanced optical response of Rydberg-EIT media
David Ziemkiewicz (UTP, Bydgoszcz)	Tunable Rydberg exciton maser