

## Tuesday, July 10th 2018

(House of Science Bremen/Downtown)

08:00	- 08:50	Registration
08:50	- 09:00	Opening and welcome, Thomas Frauenheim
<b>Session:</b> Quantum defects for qubits <i>Chair: Thomas Frauenheim</i>		
09:00	- 09:40	Joerg Wrachtrup, University of Stuttgart (Germany) <i>Applying single solid state quantum defects</i>
09:40	- 10:20	David D. Awschalom, The University of Chicago, Illinois (USA) <i>Controlling defect spin states with photons, magnons, and phonons</i>
10:20	- 10:45	Coffee Break
10:45	- 11:25	Ádám Gali, Wigner Research Centre for Physics, Hungarian Academy of Science, Budapest (Hungary) <i>Toward full ab initio description of qubits in solids</i>
<b>Session:</b> Spin States <i>Chair: Peter Deák</i>		
11:25	- 12:05	Fedor Jelezko, Ulm University (Germany) <i>Photoelectrical readout of single spins in diamond</i>
12:05	- 12:15	Group photo
12:15	- 13:35	Lunch Break (Restaurant Q1) and Coffee
13:35	- 14:15	Ronald Hanson, Delft University of Technology (The Netherlands) <i>The dawn of quantum networks</i>
14:15	- 14:55	Martin B. Plenio, Ulm University (Germany) <i>Controlling nuclear spin registers by NV centers</i>
<b>Session:</b> Quantum spintronics <i>Chair: Michael Lorke</i>		
14:55	- 15:35	Mike J. Ford, University of Technology Sydney, New South Wales (Australia) <i>Evaluating electronic structure calculations of single photon emitting defects in hBN</i>
15:35	- 16:00	Coffee Break
16:00	- 16:40	Marcus W. Doherty, Australian National University, Canberra (Australia) <i>Quantum spintronic properties of diamond nanowires</i>
16:40	- 17:20	Jeronimo R. Maze, Pontifical Catholic University of Chile, Santiago de Chile (Chile) <i>Effect of phonons on individual electronic spin relaxation and electron spin resonance</i>
18:00	- 20:30	Welcome Reception (Bremen Town Hall)

## Wednesday, July 11th 2018

(House of Science Bremen/Downtown)

Session:		Quantum probes and quantum control Chair: Joerg Wrachtrup
09:00	- 09:40	Gavin W. Morley, University of Warwick, Coventry (UK) <i>Levitating nanodiamonds containing NV centers</i>
09:40	- 10:20	John J. L. Morton, University College London (UK) <i>Strain effects on donor spins in silicon</i>
10:20	- 10:50	Coffee Break
10:50	- 11:30	Alex Retzker, The Hebrew University of Jerusalem (Israel) <i>Limits on spectral resolution measurements by quantum probes for nano NMR</i>
11:30	- 12:10	Vladimir Dyakonov, University of Würzburg (Germany) <i>Engineering of highly coherent vacancy spins in SiC</i>
12:10	- 13:50	Lunch Break (Restaurant Q1) and Coffee
13:50	- 14:30	Victor Ivády, Wigner Research Centre for Physics, Hungarian Academy of Sciences, Budapest (Hungary) <i>Novel ab initio and model spin Hamiltonian methods for spin dynamic simulations of point defect quantum bits</i>
Session:		Interactions with photons Chair: Ádám Gali
14:30	- 15:10	Sophia Economou, Virginia Polytechnic Institute and State University, Blacksburg, Virginia (USA) <i>Spin-photon interfaces for graph generation based on defects in diamond and SiC</i>
15:10	- 15:50	Michel Bockstedte, University of Salzburg (Austria) <i>Spin and photo physics of prototypical defect centers in diamond and SiC</i>
15:50	- 16:20	Coffee Break
16:20	- 17:00	Brett C. Johnson, The University of Melbourne, Victoria (Australia) <i>Silicon carbide single photon source devices</i>
17:00	- 17:40	Christoph Becher, Saarland University, Saarbrücken (Germany) <i>Spin properties and quantum control of Si vacancy centers in diamond</i>
18:40		Bus Pickup to Conference Dinner (Pickup Venue: Radisson Blu Hotel, Wachtstraße)
19:00	- 22:30	Conference Dinner (Juergenshof)

## Thursday, July 12th 2018

(House of Science Bremen/Downtown)

Session:		Defect control and qubits Chair: Tim Wehling
09:00	- 09:40	Nguyen Tien Son, Linköping University (Sweden) <i>Electron paramagnetic resonance studies of silicon vacancy in isotopically purified SiC</i>
09:40	- 10:20	Lee C. Bassett, University of Pennsylvania, Philadelphia (USA) <i>Optically addressable spin defects in hexagonal boron nitride</i>
10:20	- 10:50	Coffee Break
10:50	- 11:30	Uwe Gerstmann, Paderborn University (Germany) <i>Magneto-optical properties of NV centers in SiC: how relativistic effects trigger spin-based qubits</i>
11:30	- 12:10	Kai-Mei C. Fu, University of Washington, Seattle (USA) <i>Shallow impurities in ZnO for quantum information applications</i>
12:10	- 13:50	Lunch Break (Restaurant Q1) and Coffee
13:50	- 14:30	Hosung Seo, Ajou University, Suwon (South Korea) <i>Computational design of new point defects in semiconductors for qubit applications</i>
Session:		Experimental characterization of interfaces Chair: Jean-Marie Bluet
14:30	- 15:10	Shengbai Zhang, Rensselaer Polytechnic Institute, Troy, New York (USA) <i>Dynamic Jahn-Teller effect of the NV center in diamond and beyond</i>
15:10	- 15:50	Arne Laucht, University of New South Wales, Sydney (Australia) <i>Donor spin qubits in Si: from single-shot readout to advanced control methods</i>
17:20		Poster Mounting
17:30	- 20:30	Poster Session and Catering Buffet

## Friday, July 13th 2018

(House of Science Bremen/Downtown)

Session:		Quantum emitters Chair: Edwin Barnes
09:00	- 09:40	Igor Aharonovich, University of Technology Sydney, New South Wales (Australia) <i>Spectroscopy of single defects in hexagonal boron nitride</i>
09:40	- 10:20	Martin S. Brandt, Technical University of Munich, Garching (Germany) <i>Electrical readout of the spin state of NV in diamond</i>
10:20	- 10:50	Coffee Break
10:50	- 11:30	Maciej Koperski, University of Manchester (UK) <i>Single photon emitters in various forms of boron nitride</i>
11:30	- 12:10	Audrius Alkauskas, Center for Physical Sciences and Technology, Vilnius (Lithuania) <i>Vibrational properties of isolated colour centers in diamond</i>
12:10	- 12:20	Closing words: Thomas Frauenheim
12:20		Departure

### Conference Organisers

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& Hungarian Academy of Science  
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[www.bccms.uni-bremen.de/veranstaltungen/2018/cecam-qubit/](http://www.bccms.uni-bremen.de/veranstaltungen/2018/cecam-qubit/)

