



**Artificial Atoms:**  
**from Quantum Physics to Applications**  
**20 - 23 May 2013**  
**Budapest, Hungary**

**Agenda**

<b>Day I</b>	<b>20 May 2013, Monday</b>
12:05 – 12:30	<b>Registration</b>
12:30 -14:00	Lunch – Krúdy Hall
14:00	<b>Opening</b>
14:00 - 14:45	<b>Helmut Ritsch</b> - University of Innsbruck, Austria Quantum Optics with ultracold gases
14:45 – 15:30	<b>Ferdinand Brennecke</b> (ETH Zurich, Switzerland) Real-time observation of fluctuations at the driven-dissipative Dicke phase transition
15:30 – 16:00	Coffee break & Poster exhibition
16:00 – 16:45	<b>Yiwen Chu</b> - Harvard University, USA Nanophotonic quantum interface for nitrogen vacancy centers in diamond
16:45 – 17:30	<b>John Patrick Hadden</b> – University of Bristol, United Kingdom Diamond Defect Centres for Quantum Photonics

Day 2	21 May 2013, Tuesday
09:00 – 09:45	<b>Michael Drewsen</b> – Aarhus University, Denmark Cavity QED Experiments with Ion Coulomb Crystals: Towards quantum memories and photon counters
09:45 – 10:05	<b>Christoph Becher</b> – University of Saarland, Saarbrücken, Germany Coupling of a single NV center to a fiber-based microcavity
10:05 – 10:30	<b>Michael Trupke</b> – Vienna University of Technology, Austria Arrays of microcavities for large-scale quantum systems
10:30 – 11:00	Coffee break & Poster exhibition
11:00 – 11:45	<b>Andreas Wallraf</b> – ETH Zurich, Switzerland Realization of Deterministic Quantum Teleportation with Solid State Qubits
11:45 – 12:05	<b>Jeronimo Maze</b> – Pontificia Universidad Catolica de Chile, Santiago Theoretical description for artificial atoms in diamond and the effect of nuclear spin bath on their coherence time
12:05 – 12:30	<b>Ressa Said</b> – University of Ulm, Germany Strongly driven spin rotations in diamond
12:30 -14:00	Lunch – Krúdy Hall
14:00 – 14:45	<b>Tatjana Wilk</b> – Max-Planck Institute, Garching, Germany Parametric feedback cooling of a single atom inside an optical cavity
14:45 - 15:30	<b>Ronald Hanson</b> – Kavli Institute of Nanoscience Delft, The Netherlands Quantum networks based on spins in diamond
15:30 – 16:00	Coffee break & Poster exhibition
16:00 – 16:45	<b>Matthew Markham</b> – Element Six, Ascot, United Kingdom Engineering NV centres in Synthetic Diamond
16:45 – 17:30	<b>Norikazu Mizuochi</b> – Osaka University, Japan Single photon, spin, and charge manipulation of diamond quantum register

Day 3	22 May 2013, Wednesday
09:00 – 09:45	<b>Tommaso Calarco</b> – University of Ulm, Germany Quantum optimal control in AMO and NV physics
09:45 – 10:30	<b>Ferdinand Schmidt-Kaler</b> – Johannes Gutenberg University of Mainz, Germany Quantum technologies for solid state physics using cold trapped ions
10:30 – 11:00	Coffee break & Poster exhibition
11:00 – 11:45	<b>Abram Falk</b> – University of California, Santa Barbara, USA Polytype control of spin qubits in silicon carbide
11:45 – 12:05	<b>Brett Johnson</b> – University of Melbourne, Australia Single Photon Sources in Silicon Carbide
12:05 – 12:30	<b>Lars Liebermeister</b> – Ludwig Maximilians University, Munich, Germany Single Photon Source with a Diamond Nanocrystal on an Optical Nanofiber
12:30 -14:00	Lunch – Krúdy Hall
14:00 – 14:25	<b>Vladimir Dyakonov</b> – University of Würzburg, Germany Intrinsic defects in silicon carbide for spin-based quantum applications
14:25 - 14:45	<b>Georgy Astakhov</b> - University of Würzburg, Germany Multi-quantum spin resonances of intrinsic defects in silicon carbide
14:45 – 15:30	<b>Jean-Michel Raimond</b> – ENS, KLB, Paris, France Atoms and cavities: quantum measurement and feedback
15:30 – 16:00	Coffee break & Poster exhibition
16:00 – 16:45	<b>Jörg Schmiedmayer</b> – Vienna Center for Quantum Science and Technology, Austria Connecting Photons to Spins
16:45 – 17:05	<b>Lachlan Rogers</b> – Institute of Quantum Optics, University of Ulm, Germany Silicon-vacancy centre as an alternative artificial atom in diamond
17:05 – 17:30	<b>Sándor Varró</b> – Wigner Research Centre for Physics, Budapest, Hungary Measurable positionsensitive wide-angle interference effects of single photons radiated by a nitrogen-vacancy center in diamond
20:00 – 23:00	Dinner – Vörösmarty Hall

Day 4	23 May 2013, Thursday
09:00 – 09:45	<b>Fedor Jelezko</b> - Institute of Quantum Optics, University of Ulm, Germany Quantum sensors based on single diamond defects
09:45 – 10:05	<b>David Simpson</b> – University of Melbourne, Australia Nanoscale spin sensing in artificial cell membranes
10:05 – 10:30	<b>Philip Neumann</b> – University of Stuttgart, Germany Nanoscale temperature sensing using single defects in diamond
10:30 – 11:00	Coffee break & Poster exhibition
11:00 – 11:45	<b>Milos Nesladek</b> – IMEC, Diepenbeek, Belgium Fluorescent Nanodiamond for Biomedicine
11:45	<b>Closing</b>

## Poster Session

- **Robert Amsüss** – Institute of Atomic and Subatomic Physics, Vienna, Austria  
Coupling N-V centers to superconducting resonators: Effects of inhomogeneous broadening
- **Frederico Brandao** – Technical University of Dortmund, Germany  
A comparative study on optical and magnetic resonance properties of near-surface NV centers in nano and bulk diamond
- **Kathrin Buczak** – Vienna University of Technology, Austria  
Creation of nitrogen-vacancy centres for cavity QED
- **Christian Derntl** – Institute of Atomic and Subatomic Physics, Vienna, Austria  
Scaling of light-matter interfaces
- **Yuki Doi** – Osaka University, Japan  
Single Photon, Spin, and Charge in Diamond Semiconductor at Room Temperature
- **Dominik Fischer** - Institute of Atomic and Subatomic Physics, Vienna, Austria  
Atom-Light interfaces on an atom chip
- **Shaun Ho** – University of Bristol, United Kingdom  
Photonics and electronics for nitrogen vacancy control
- **Wolfgang Rohringer** – Vienna Center for Quantum Science & Technology, Austria  
Stochastic Optimal Control on a Quantum Many-Body System
- **Takaaki Shimo-Oka** – Osaka University, Japan  
Four-Qubit Entanglement in Solid-State Systems at Room Temperature
- **Florian Steine** – Atomic Institute, Vienna, Austria  
Cqed with nanofibers
- **Toshiyuki Tashima** – Ludwig Maximilians University, Munich, Germany  
Towards single photon generation using NV centers in diamond coupled to thin layer optical waveguides