International Workshop on

Defect engineering in SiC for quantum technology

December 8 - 9, 2016

Helmholtz-Zentrum Dresden-Rossendorf

Organizers: Shengqiang Zhou, Yu Liu (HZDR), Jurgen von Bardeleben (UPMC, Paris), Adam Gali (Wigner Research Centre for Physics, Budapest)

Thursday, December 8, 2016, Room: 106/255 – Hörsaal

13:00 Light lunch, coffee
14:15 Welcome by Manfred Helm

Session 1, Chair: Adam Gali

14:30 Jurgen von Bardeleben (Pierre and Marie Curie University - Paris 6)
NV Center in Silicon carbide: predictions, results and perspectives

15:00 Georgy Astakhov (University of Würzburg)
Engineering highly-coherent spin centers in SiC

15:30 Gabriel Ferro (University Lyon 1)
SiC thin layers engineering for quantum photonics structure: material approach

16:00 Coffee break

Session 2, Chair: Jurgen von Bardeleben

16:30 Adam Gali (Wigner Research Centre for Physics, Budapest)
Ab initio simulations on SiC qubits

17:00 Michel Bockstedte (University of Salzburg)
Spin physics and optical excitation of defect centers in SiC

17:30 Uwe Gerstmann (University of Paderborn)
Single spins and spin-coupling in SiC thin-layers and interfaces

18:00 Peter Michel (HZDR)
ELBE as a potential facility for defect engineering

19:30-22:00 Dinner together at Augustinerkeller (transport to the hotel will be arranged by HZDR)

Friday December 9, 2016, Room: 114/202 - Seminarraum

8:00 Pickup by mini-Bus from Hotel, leaves at 8:00

Session 3, Chair: Georgy Astakhov

9:00 Jörg Wrachtrup (University of Stuttgart)
Single spins and spin photon interaction in SiC

9:30 Guido Burkard (University of Konstanz)
Theory of optical control of electron and nuclear spins in defects

10:00 Nguyen Tien Son (Linköping University)
Material growth and defect engineering in silicon carbide

10:30 Stefan Facsko (HZDR)
Ion beam center at HZDR

Session 4, Chair: Stefan Facsko

11:00-12:00 Break and visit of IBC

12:00-13:00 Lunch

Session 5, Chair: Jörg Wrachtrup

13:00 Dion Braukmann (Technical University of Dortmund)
High-frequency optically detected magnetic resonance of NV- centers in diamond

13:30 Martin Brandt (Technical University of München)
Electrical readout of defect spin states by photoionization

14:00 Michael Trupke (University of Vienna)
Control architectures and photonic interfaces for qubits in crystals

14:30 Tom Bosma (University of Groningen)
Optical coherent control of lattice-defect spins in SiC device structures

15:00 Fedor Jelezko (University of Ulm)
tbd

15:30-17:00 Free discussion and departure