

Silicon Carbide: Device Integration for Quantum Technologies

863. WE-Heraeus-Seminar

9 - 13 August 2026

at the Physikzentrum Bad Honnef, Germany

**WILHELM UND ELSE
HERAEUS-STIFTUNG**



Program

Sunday, 09 August 2026

17:00 - 21:00	Registration
18:00 - 19:30	<i>BUFFET SUPPER</i>
19:30	Networking

Program

Monday, 10 August 2026

07:30 - 09:00	<i>BREAKFAST</i>	
09:00 - 09:10	Scientific Organizers	Opening talk
09:10 – 09:25	Scientific Organizers / or Stefan Jorda	Video “About the Wilhelm and Else Heraeus Foundation”
09:25 - 10:15	- Keynote talk - Vadim Vorobyov	Building a nuclear spin register with V2 center in SiC
10:15 - 10:35	Viktor Ivady	Accurate hyperfine tensors of quantum defects in SiC
10:35 - 11:05	<i>COFFEE BREAK</i>	
11:05 - 11:35	Marianne Bathen	Defect generation, integration and control: Theory and experiment combined
11:35 - 11:55	Laurens Feije	Laser-induced creation of coherent V2 centers in bulk-grown silicon carbide
11:55 - 12:15	Maximilian Hollendonner	Impact of Strain on the Spin Dynamics of Silicon Vacancy Centers in 4H Silicon Carbide
12:15 - 12:25	CONFERENCE PHOTO (in front of the main entrance)	
12:30 - 14:00	<i>LUNCH</i>	
14:00 - 14:30	Michael Trupke	Spin Centres in Silicon Carbide for Scalable Spin-Photon Interfaces
14:30 - 15:00	Georgy Astakhov	Chlorine defects in silicon carbide: A new platform for telecom quantum memory

Program

Monday, 10 August 2026

15:00 - 15:20	Jin-Shi Xu	High-yield engineering and identification of oxygen-related modified divacancies in 4H-SiC
15:20 - 15:50	Patrick Berwian	Developing a pilot line for integrated SiC quantum devices: From process modules to Al-driven color center characterization
15:50 - 16:20	<i>COFFEE BREAK</i>	
16:20 - 16:40	Katja Höflich	Direct is beautiful: exploiting the full potential of focused electron and ion beams
16:40 - 17:00	Jonah Heiler	Spectrally stable near-surface silicon vacancies in silicon carbide through surface passivation
17:00 - 17:20	Aurora Teien	Cathodoluminescence mapping of band bending effects from different 4H-SiC Schottky diodes for defect spin control
17:30 - 18:00	Poster flash talks	
18:00 - 19:30	<i>DINNER</i>	
19:30	Poster session	

Program

Tuesday, 11 August 2026

07:30 - 09:00	<i>BREAKFAST</i>	
09:00 - 09:50	- Keynote Talk - Marina Radulaski	Color center integration with photonic devices for quantum networking and analog simulation
09:50 - 10:20	Florian Kaiser	Quantum photonics for colour centres in silicon carbide
10:20 - 10:50	<i>COFFEE BREAK</i>	
10:50 - 11:20	Tim Schröder	Nanophotonic Solid-State Spin-Photon Interfaces
11:20 - 11:40	Yu Zhou	Wafer-scale monolithic integration of coherent spins in semiconductor photonics
11:40 - 12:00	Joshua Bader	Room temperature purcell enhanced photon-emission of single erbium defects in silicon-carbide-on-insulator microring resonators
12:00 - 12:20	Roman Dimov	Deterministic Placement of Silicon-Vacancy Centers and High-Q Photonic Crystal Cavities in Thin-Film Silicon Carbide
12:30 - 14:00	<i>LUNCH</i>	
14:00 - 14:50	- Keynote talk - Eva Weig	Towards spin-based quantum technologies in hybrid nanomechanical systems based on silicon carbide
14:50 - 15:10	Heiko Weber	Tuning of on-chip mechanical resonators by bending-induced stress
15:10 - 15:40	Carlos Errando-Herranz	Hybrid integration of quantum building blocks onto photonic integrated circuits
15:40 - 16:00	Fedor Hrunski	Hong-Ou-Mandel Interference of Spatially Separated Silicon Vacancy Centers in 4H-SiC

Program

Tuesday, 11 August 2026

16:00 - 16:30 *COFFEE BREAK*

16:30 - 16:50 Xiaoyi Lai **Key building blocks for a quantum
repeater node based on silicon carbide**

16:50 - 17:20 Christina Spaegle **Silicon Carbide Waveguides for
Augmented Reality and Beyond**

17:20 - 17:45 **Poster flash talks**

18:00 - 19:30 *DINNER*

19:30 **Poster session**

Program

Wednesday, 12 August 2026

07:30 - 09:00	<i>BREAKFAST</i>	
09:00 - 09:50	- Keynote talk - Tim Taminiau	Towards distributed quantum computation with SiC color centers
09:50 - 10:20	Takeshi Oshima	Local area sensing in silicon carbide devices using silicon vacancy introduced by particle beam writing
10:20 - 10:50	<i>COFFEE BREAK</i>	
10:50 - 11:20	Naoya Morioka	Photoelectrical probing of spin defects in SiC
11:20 - 11:50	Heinrich Heiss	Highly Integrated Quantum Sensors: From Quantum Physics to System-in-Package Solutions
11:50 - 12:10	Junfeng Wang	In-situ magnetic sensing based on silicon carbide color centers
12:10 - 12:30	Jun-Jae Choi	Time-domain crosstalk analysis for multilevel control and readout of silicon-vacancy qubits in 4H-SiC
12:30 - 14:00	<i>LUNCH</i>	
14:00 - 14:15	Oscar Diez	Shaping Europe's Quantum Future: Policy Support for Industrial Leadership
14:15 - 15:15	Roundtable discussion	
15:15 - 18:30	Excursion	
18:30	<i>HERAEUS DINNER</i> <i>(social event with cold & warm buffet with complimentary drinks)</i>	

Program

Thursday, 13 August 2026

07:30 - 09:00	<i>BREAKFAST</i>	
09:00 - 09:30	Christopher Anderson	Photonically integrated low-noise SiC qubits
09:30 - 09:50	Lin Jin	Integrated Photonic Components and Single-Photon Detection in Silicon Carbide for Scalable Quantum Information Processing
09:50 - 10:10	Kingshuk Mallick	Engineering vacancy defects in SiC for precision timing and sensing
10:10 - 10:30	Ben Haylock	Electrical Spin State Readout in Thin Film Silicon Carbide on Insulator
10:30 - 11:00	<i>COFFEE BREAK</i>	
11:00 - 11:30	Christian Bonato	Engineering photonic structures in SiC for improved spin-photon interfacing
11:30 - 12:00	Closing and poster prize	
12:00 - 14:00	<i>LUNCH</i>	

End of the seminar and departure