

Monday 27.7.

8.45 - 9.00	Opening address
9.00 - 10.30	Plenary session - Hall B Chair: Patrick Rinke
9.00 - 9.45	Chris Van de Walle <i>University of California</i> Impact of defects on efficiency of solid-state light emitters
9.45 - 10.30	David Awschalom <i>University of Chicago</i> Beyond electronics: abandoning perfection for quantum technologies

10.30 - 11.00 Break

11.00 - 12.20	Parallel session - Hall B Chair: Kai-Mei Fu
11.00 - 11.30	Junko Ishi-Hayase <i>Keio University</i> Control of position and orientation of nitrogen-vacancy centers in CVD-grown diamond thin film
11.30 - 12.00	Norikazu Mizuochi <i>Osaka University</i> Control of qubits and orientation of NV center in diamond
12.00 - 12.20	Jurgen von Bardeleben <i>CNRS-Univ. P. et M. Curie</i> Experimental and theoretical study of the NV Center in 4H-SiC

11.00 - 12.30	Parallel session - Hall C Chair: Audrius Alkauskas
11.00 - 11.20	Joy McNamara <i>Virginia Commonwealth University</i> Defects in GaN studied by time-resolved photoluminescence
11.20 - 11.40	Shuichi Emura <i>Osaka University</i> Environment Identification of Nitrogen Vacancy in GaN:Gd by X-ray Spectroscopy
11.40 - 12.00	Mary Zvanut <i>University of Alabama at Birmingham</i> Charge Transfer in Compensated Be-doped GaN
12.00 - 12.30	Rachel Oliver <i>University of Cambridge</i> Multi-microscopy analysis of defects in GaN-based microdisk lasers

12.20 - 14.00 Lunch

14.00 - 15.20	Parallel session - Hall B Chair: Junko Ishi-Hayase
14.00 - 14.30	Kai-Mei Fu <i>University of Washington</i> Hybrid GaP-Diamond Photonic Devices for Scalable On-chip Entanglement of Defects in

14.00 - 15.30	Parallel session - Hall C Chair: Michael Stavola
14.00 - 14.20	Wei Zhu <i>University of Science and Technology of China</i> Transition metal d-level doping of CdO

Diamond

14.30 - 15.00 **Adam Gali**
Wigner Research Centre for Physics
Defects in diamond and silicon carbide for quantum computing and sensing

15.00 - 15.20 **Jeffrey McCallum**
University of Melbourne
Single photon sources in SiC for development of quantum optoelectronic devices

15.20 - 16.00 Break

14.20 - 14.40 **Andrej Kuznetsov**
University of Oslo
Zinc vacancy energetics revealed by self-diffusion in isotopic ZnO heterostructures

14.40 - 15.00 **Norbert Nickel**
Helmholtz-Zentrum Berlin
Experimental observation of localized defects in ZnO nanostructures and thin films

15.00 - 15.30 **Kin Man Yu**
City University of Hong Kong
Defects and Properties of Cadmium Oxide

16.00 - 18.00 **Parallel session - Hall B**
Chair: Hannes Raebiger

16.00 - 16.30 **Arkady Krasheninnikov**
Aalto University
Defects in two-dimensional materials: their production under irradiation, evolution and properties

16.30 - 17.00 **Nguyen Tien Son**
Linköping University
Identification of shallow donor in natural MoS₂

17.00 - 17.20 **Tiziana Musso**
Aalto University
Investigation of TMDCs/functionalized Graphene Interfaces for High-Performance Electronics

17.20 - 17.40 **Youngsin Park**
Ulsan National Institute of Science and Technology
Defect induced ferromagnetic properties from 2H-

16.00 - 18.00 **Parallel session - Hall C**
Chair: Anderson Janotti

16.00 - 16.20 **Uwe Gerstmann**
University of Paderborn
Charge carrier separation at photoactive interfaces: the role of (de)localized defects

16.20 - 16.40 **Hiroshi Katayama-Yoshida**
Osaka University
Self-regeneration Mechanism and Self-organization of Nano-structures by Spinodal Nano-decomposition in Perovskite CsSnI₃

16.40 - 17.00 **Su-Huai Wei**
National Renewable Energy Laboratory
First-principles Study of Defects in CdTe Solar Cells

17.00 - 17.30 **Clas Persson**
University of Oslo
Native defects in Cu(In,Ga)Se₂ and Cu₂ZnSn(S,Se)₄

17.30 - 18.00 **Andriy Zakutayev**
National Renewable Energy Laboratory

MoS₂

17.40 - 18.00

Nihit Saigal

Tata Institute of Fundamental Research

Optical properties of defects in monolayer MoS₂
on SiO₂/Si

Defects in “earth abundant”
semiconductors for PV: experiment and
theory

Tuesday 28.7.

9.00 - 10.30	<u>Plenary session - Hall B</u> Chair: Matthew McCluskey
9.00 - 9.45	Didier Blavette <i>Université de Rouen</i> Atomic-scale investigation of defects in semiconductors using Atom probe tomography
9.45 - 10.30	Colin Humphreys <i>University of Cambridge</i> Why are InGaN/GaN LEDs so bright when the dislocation density is so high? The importance of the atomic structure of the InGaN quantum wells.

10.30 - 11.00 Break

11.00 - 12.30	<u>Parallel session - Hall B</u> Chair: Andre Stesmans
11.00 - 11.30	Wolfgang Skorupa <i>Helmholtz-Zentrum Dresden-Rossendorf</i> Subsecond thermal processing for nanostructured semiconductors
11.30 - 12.00	Angelo Costa <i>University of Lisbon</i> Exploring the geometry of 3d transition metal complexes in silicon with electron emission channeling
12.00 - 12.20	Corentin Monmeyran <i>Massachusetts Institute of Technology</i> Deep states and their annealing kinetics in gamma irradiated bulk germanium studied by DLTS
12.20 - 12.40	Marie-Laure David <i>Université de Poitiers</i> Multiscale study of the formation and evolution mechanisms of helium bubbles in semiconductors

11.00 - 12.30	<u>Parallel session - Hall C</u> Chair: Philip Dawson
11.00 - 11.20	Sneha Rhode <i>University of Cambridge</i> Dislocation core structures and direct observation of indium segregation at dislocations in InGaN
11.20 - 11.40	Fabien Massabuau <i>University of Cambridge</i> Multi-microscopy investigation of the optical properties of dislocations in InGaN
11.40 - 12.00	Oleg Medvedev <i>St. Petersburg State University</i> Luminescence of a-screw dislocations in low-ohmic GaN
12.00 - 12.30	Martin Albrecht <i>Leibniz-Institut fuer Kristallzuechtung</i> Structural and optical properties of dislocations in III-nitrides

12.30 - 14.00 Lunch

14.00 - 15.30	<u>Parallel session - Hall B</u> Chair: Elif Ertekin
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14.00 - 15.30	<u>Parallel session - Hall C</u> Chair: Rachel Oliver
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14.00 - 14.30 **Shengbai Zhang**
Rensselaer Polytechnic Institute
Coupling molecular dynamics with time-dependent density functional theory to probe excited carrier dynamics

14.30 - 14.50 **Elvar Jónsson**
Aalto University
Calculations of defect states using variational, self-consistent implementation of a Perdew-Zunger self-interaction corrected energy functional

14.50 - 15.10 **Wei Chen**
Ecole Polytechnique Federale de Lausanne
Determination of defect energy levels through GW

15.10 - 15.30 **Damien West**
Rensselaer Polytechnic Institute
Charged Defect Energy in Lower-Dimension Systems

14.00 - 14.20 **Miguel Caro**
Aalto University
Effects of local composition fluctuations in nitride alloys: Piezoelectric and electronic properties

14.20 - 14.40 **Oleg Soltanovich**
Institute of Microelectronics Technology RAS

Charge relaxation processes in the quantum wells of InGaN/GaN LEDs studied by frequency dependences of capacitance and conductance

14.40 - 15.00 **Feng Yun**
Xi'an Jiaotong University
Deep Hole Injection Assisted by Large V-Shape Pits in InGaN/GaN Multiple Quantum Wells Blue LEDs

15.00 - 15.30 **Philip Dawson**
University of Manchester
Effects of Carrier Localisation in InGaN/GaN Quantum Well Structures

15.30 - 16.00 Break

16.00 - 18.00 [Poster session I](#)

19.00 - 20.30 City reception
in Espoo Cultural Centre. Departure from the conference venue at 18:30.

Wednesday 29.7.

09.00 - 10.30 Parallel session - Hall B

Chair: Kin Man Yu

09.00 - 09.30 **David Scanlon**

UCL

Defect and Band Engineering in Sn-based Oxides

09.30 - 09.50 **Michael Stavola**

Lehigh University

OH centers and the conductivity of H-doped In_2O_3 single crystals

09.50 - 10.10 **Jan Stehr**

Linköping University

The Aluminum - zinc vacancy complex in ZnO: An EPR study

10.10 - 10.30 **Ilja Makkonen**

Aalto University

Identification of vacancy defects in transparent semiconducting oxides: the cases of ZnO, SnO_2 , In_2O_3 and Ga_2O_3

09.00 - 10.30 Parallel session - Hall C

Chair: John Murphy

09.00 - 09.20 **Vladimir Markevich**

University of Manchester

Can hydrogen be harmful for silicon solar cells? Evidence for recombination active centers incorporating hydrogen and oxygen atoms in n-type Si crystals

09.20 - 09.40 **Anna Vinattieri**

University of Florence

Germanium dyads as quantum emitter with degenerate X and XX states

09.40 - 10.00 **Patricia Mooney**

Simon Fraser University

Effects of antimony near SiO_2/SiC interfaces

10.00 - 10.30 **Alexander Shluger**

University College London

Identifying defects at interfaces in microelectronics devices

10.30 - 11.00 Break

11.00 - 12.40 Parallel session - Hall B

Chair: Kai Nordlund

11.00 - 11.30 **Patrick Rinke**

Aalto University

Space-Charge Transfer and Charged Defects at Surfaces

11.30 - 12.00 **Alex Zunger**

University of Colorado

Doping concepts

12.00 - 12.20 **Thomas Prokscha**

Paul Scherrer Institut

11.00 - 12.30 Parallel session - Hall C

Chair: Jan Evans-Freeman

11.00 - 11.20 **Yutaka Ohno**

Tohoku University

Formation process of Cu precipitates at small-angle tilt boundaries in Si crystals

11.20 - 11.40 **Hannu Laine**

Aalto University

Removal of iron precipitates in quasi-mono silicon wafers using high-temperature anneal

11.40 - 12.00 **Simon Leonard**

University of Manchester

Iron-Hydrogen Complex in Silicon

12.00 - 12.30 **Kazumi Wada**

University of Tokyo

Depth dependence of the ionization energy of shallow hydrogen states in ZnO, CdS, and SrTiO₃

12.20 - 12.40

Hannes Raebiger

Yokohama National University

The role of defects in memristive switching

Recent Progress in Si Microphotonics - Defects and Photonic Device Performances

12.30 - 14.00

Lunch

13.30 - 20.00

Excursions

Option 1: Excursion to Finnish Nature: Guided tour to Nuuksio National Park including Finnish Nature Centre Haltia

Departure: at 13.30 by bus in front of the conference venue, Otakaari 1

Return: by 17.30-18.00

Option 2: Fortress Island Suomenlinna

Departure: at 13.40 by bus in front of the conference venue, Otakaari 1

Return: by ferry to Kauppatori (Market Square) in the city center of Helsinki, no bus transfer to Espoo

Thursday 30.7.

9.00 - 10.30 Plenary session - Hall B
Special plenary session. Speakers:
Matthew McCluskey, *Washington State University*
Sokrates Pantelides, *Vanderbilt University*
Alfredo Pasquarello, *EPFL*
Bengt Svensson, *University of Oslo*

10.30 - 11.00 Break

11.00 - 12.30 Plenary session - Hall B
Special plenary session continues.

12.30 - 14.00 Lunch

14.00 - 15.30 Parallel session - Hall B
Chair: Wolfgang Skorupa

14.00 - 14.30 **Andre Stesmans**
University of Leuven
Intrinsic point defects at high-mobility semiconductor/insulator interfaces probed by ESR: Ge and GaAs

14.30 - 14.50 **Todd Karin**
University of Washington
Optical imaging of excitons bound to stacking faults in bulk GaAs: A homogeneous 2D excitonic system

14.50 - 15.10 **Hans Alt**
Munich university of Applied sciences
Carbon-nitrogen complexes in gallium arsenide

15.10 - 15.30 **Emile Maras**
Aalto University
Mechanisms of edge-dislocation formation in strained films of Ge/(001)Si studied by atomic simulations

14.00 - 15.30 Parallel session - Hall C
Chair: David Scanlon

14.00 - 14.20 **Wennie Wang**
University of California
Insight into oxygen vacancies in WO_3

14.20 - 14.40 **Naoto Umezawa**
National Institute for Materials Science
Native defects and doping in Ag_3PO_4

14.40 - 15.00 **Beall Fowler**
Lehigh University
Interstitial hydrogen in vanadium dioxide

15.00 - 15.30 **Anderson Janotti**
University of California
The role of vacancies and polarons in SrTiO_3

15.30 - 16.00 Break

16.00 - 18.00 Poster session II

19.00 - 23.00 Banquet
Bus transport to restaurant Koskenranta starts in front of the conference venue at 18.30. Check information booklet for more details.

Friday 31.7.

09.00 - 10.30 Parallel session - Hall B

Chair: Shengbai Zhang

09.00 - 09.30 **Audrius Alkauskas**

Center for Physical Sciences and Technology

First principles theory of radiative and nonradiative carrier capture processes at point defects

09.30 - 09.50 **Michael Reshchikov**

Virginia Commonwealth University

Radiative and nonradiative defects in HVPE GaN

09.50 - 10.10 **Alexander Polyakov**

*National University of Science & Technology
MISIS*

Deep Acceptors and Defect Luminescence Bands in GaN

10.10 - 10.30 **Tomohiro Inaba**

Osaka University

In-Plane Compressive Strain Dependence of Photoluminescence Properties in Eu-Doped GaN

09.00 - 10.30 Parallel session - Hall C

Chair: Martti Puska

09.00 - 09.20 **Makiko Suetsugu**

Saitama University

Nonradiative recombination pathway via the intermediate band in GaP_{1-x}N_x studied by below-gap excitation

09.20 - 09.40 **Łukasz Gelczuk**

Wroclaw University of Technology

Origin and annealing of deep-level defects in GaNAs/GaAs structures grown by MBE and MOVPE

09.40 - 10.00 **Natalie Segercrantz**

Aalto University

Increased p-type conductivity in GaN_xSb_{1-x}

10.00 - 10.30 **Tim Veal**

University of Liverpool

Optical properties and defects in GaSbBi and GaNSb alloys

10.30 - 11.00 Break

11.00 - 12.30 Parallel session - Hall B

Chair: Bengt Svensson

11.00 - 11.30 **Pavel Baranov**

Ioffe Institute

Electron paramagnetic resonance of defects in wide-band gap semiconductors and related nanostructures

11.30 - 11.50 **Dmitrii Gets**

Ioffe Institute

Silicon vacancy related centers in non-irradiated 6H SiC nanostructure

11.50 - 12.10 **Marie-France Barthe**

CNRS

11.00 - 12.30 Parallel session - Hall C

Chair: Deren Yang

11.00 - 11.20 **Nikolay Bagraev**

Ioffe Institute

Quantum Hall and de Haas-van Alphen effects in silicon nanostructures confined by impurity stripes

11.20 - 11.40 **Oleg Vyvenko**

St. Petersburg State University

Enhancement and retardation of charged carrier thermoemission from dislocation related electronic states in Si

11.40 - 12.00 **Manfred Reiche**

Max Planck Institute of Microstructure Physics

Single-electron transitions on dislocations

Formation of vacancy defects into 6H silicon carbide studied by Positron Annihilation Spectroscopy and Photoluminescence

12.10 - 12.30

Soungmin Bae

Yokohama National University

Hole localization around transition metal impurity in semiconductors

12.00 - 12.30

José Coutinho

University of Aveiro

Nanodopants for solid arrays of semiconductor nanocrystals

12.30

Closing