The 31st International Conference on Defects in Semiconductors

Oslo, Norway | July 26 – 30, 2021
Welcome!

Welcome to the 31st International Conference on Defects in Semiconductors (ICDS-31), for the first time held as an online event. The conference was originally planned to be held at the University of Oslo, Norway, but, unfortunately, only an online conference was within reach this summer.

The global coronavirus pandemic has been a challenging period for all of us. Despite this, there are many interesting contributions and a good turnout of participants! I am happy to see that the ICDS community is still thriving under these circumstances. On behalf of the organizing committee, let me thank the support from the international advisory and program committees, the invited and tutorial speakers for their positive response, and our generous government and corporate sponsors for supporting this important conference! Special thanks go to Kristin Nygård and the rest of the LENS group at UiO for making this happen. Thank you all!

ICDS promotes a fundamental understanding of point and extended defects in semiconductors, including electrical, vibrational, optical, and magnetic phenomena. Substantial advances have been reported since our last meeting in Seattle, and I am looking forward to all the exciting contributions. I hope ICDS-31 will facilitate stimulating discussions on defects in materials for micro- and optoelectronics, quantum computing, photovoltaics, and other applications.

The conference starts Monday July 26th at 09:00 with the live presentations organized in conventional sessions categorized according to topics. The Live sessions will be held in Zoom, while the tutorials, pre-recorded and poster presentations will be viewed directly in the conference portal (https://event.fourwaves.com/icds31/pages). See the “Practical Information” or the next page for further information.

Thank you for your participation, and I hope you will enjoy the program.

Lasse Vines
Chair, ICDS-31
Practical Information

The program, program outline, and full abstracts are all available online in the conference portal home page (see Conference Access below). A completely online conference with participants from many different time zones was challenging to fit into the traditional ICDS program. Therefore, we decided to deviate from the traditional program to accommodate as many participants as possible. The daily parallel sessions are replaced by a daily “Live” session and on-demand “Pre-recorded” talks. The “Live” session consists of morning and evening talks, leaving free time in the middle of the day. Hence, the morning sessions should be suitable for European, Asian, and Australian participants, whereas the evening session should be suitable for Europeans and Americans. The pre-recorded talks and the poster presentations will be available throughout the week and can be accessed at any time. It will be possible to discuss with the presenters during the poster session. Several tutorial lectures geared toward students, early-career scientists, and newcomers to the field are available in digital format. The tutorials are available to all participants and are on-demand, so they can be watched prior, during, or after the conference.

Live session

The Live part of the program will be held in the video conferencing platform Zoom, and a link to the correct session can be found under the “Schedule” tab in the conference portal. The speakers should join their session 10-15 minutes before the session starts. Make sure you have your correct name (first name and surname) in Zoom so the technician can find you. The presentations (not the Q&A) will recorded and made available (under the all presentations tab in the conference portal) after the session.

Q&A for Pre-recorded talks

There will be a Q&A session for the pre-recorded talks, similar to that of the poster session, where you will be able to interact with the presenters. Before the start of the evening sessions on Monday, Tuesday, and Wednesday (4-5 pm CET), the presenters are encouraged to be available for questions, and can be approached from the presentation webpage (click on the presentation from the “pre-recorded” tab or the “All presentations” tab), and press “Call presenter”.

Conference Access

The conference activities will be held in the conference portal supported by Fourwaves:

https://event.fourwaves.com/icds31/pages

Access will be given after registering at the ICDS-31 website:

https://www.icds31.org

Tutorial Lectures

A selection of relevant tutorial lectures are available throughout the conference from leading experts in the field.

Poster Session

The posters will be available for viewing throughout the conference. There are two sessions (Tuesday 7:10 PM to 8:40 PM and Thursday 10:30 AM to 12:10 AM). The presenters are encouraged to be available during these times for discussions through the conference portal. The presenters can be approached from the presentation webpage (click on the presentation from the “pre-recorded” tab or the “All presentations” tab), and press “Call presenter”. Unlike the poster session at a traditional ICDS conference, we have not assigned presenters to a specific session. The presenters and attendees are free to participate in the session that is most convenient for them.
IUPAP policies

This conference is supported by the International Union of Pure and Applied Physics (IUPAP). Free Circulation of Scientists: The principle of the Universality of Science is fundamental to scientific progress. This principle embodies freedom of movement, association, expression and communication for scientists, as well as equitable access to data, information and research materials. In pursuing its objectives with respect to the rights and responsibilities of scientists, the International Union of Pure and Applied Physics (IUPAP) actively upholds this principle, and, in so doing, opposes any discrimination on the basis of such factors as ethnic origin, religion, citizenship, language, political stance, gender, or age. IUPAP should only sponsor conferences and events at institutions and in countries that uphold this principle. If scientists are excluded from attending IUPAP-sponsored international conferences by a host institution or country on the basis of any of these factors, IUPAP should register its concern at the highest level of that institution or country, and should not sponsor any future events in that country until such exclusions have been eliminated. [Section 1]* Harassment at Conferences: It is the policy of the International Union of Pure and Applied Physics (IUPAP) that all participants at an IUPAP-supported Conference will enjoy a comfortable experience, and that they will treat each other with respect at all times. The conference organizers will name an advisor who will consult with those who have suffered from harassment and who will suggest ways of redressing their problems, and an advisor who will counsel those accused of harassment. [Section 4]*

*http://iupap.org/sponsored-conferences/conference-policies/
# Program Overview

<table>
<thead>
<tr>
<th>Time (CEST)</th>
<th>Monday 26/07</th>
<th>Tuesday 27/07</th>
<th>Wednesday 28/7</th>
<th>Thursday 29/7</th>
<th>Friday 30/7</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30</td>
<td>Welcome</td>
<td>Plenary I</td>
<td>Plenary II</td>
<td>Silicon I</td>
<td>Nitrides II</td>
</tr>
<tr>
<td>8:40</td>
<td>Dreau</td>
<td>Gao</td>
<td>Sudo</td>
<td>Zhang</td>
<td>Perovskites</td>
</tr>
<tr>
<td>8:50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:00</td>
<td>Break</td>
<td></td>
<td></td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>9:10</td>
<td>Tetienne</td>
<td></td>
<td></td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>9:20</td>
<td>Quantum Defects I</td>
<td>Break</td>
<td>Wörle</td>
<td>Müller</td>
<td></td>
</tr>
<tr>
<td>9:30</td>
<td>Thiering</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:40</td>
<td>Abrikosov</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:50</td>
<td>Todenhagen</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:00</td>
<td>Razinkovas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:10</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td>Oshiyama</td>
<td>Galium Oxide II</td>
</tr>
<tr>
<td>10:20</td>
<td></td>
<td></td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:30</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:40</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:50</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:10</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:20</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:30</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:40</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:50</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:10</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:20</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:30</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:00</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:10</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:20</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:30</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:40</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:50</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:00</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:10</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:20</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:30</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:40</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:50</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:00</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:10</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:20</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:00</td>
<td></td>
<td>Harvest</td>
<td>Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:10</td>
<td>Q&amp;A for pre-recorded talks</td>
<td>Finot</td>
<td>Turiansky</td>
<td>Dreyer</td>
<td>Plenary V</td>
</tr>
<tr>
<td>16:20</td>
<td>Scarpulla</td>
<td>Demchenko</td>
<td>Quantum Defects II</td>
<td>Fund. II</td>
<td></td>
</tr>
<tr>
<td>16:30</td>
<td></td>
<td>Reschikov</td>
<td>Dyakonov</td>
<td>Falletta</td>
<td></td>
</tr>
<tr>
<td>16:40</td>
<td>Hwang</td>
<td>Vorobiov</td>
<td>Maciaszek</td>
<td>Radulaski</td>
<td></td>
</tr>
<tr>
<td>16:50</td>
<td></td>
<td></td>
<td>Stern</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:00</td>
<td></td>
<td></td>
<td>Van de Walle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:10</td>
<td>Lyons</td>
<td>Simmons</td>
<td>Fund. I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18:10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18:20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18:30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18:40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18:50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19:10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19:20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19:30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19:40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19:50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20:00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20:10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20:20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20:30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20:40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Free time for leisure, meetings, and on-demand presentations**

<table>
<thead>
<tr>
<th>Time Zone</th>
<th>Abbreviation</th>
<th>GMT</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central European Summer Time</td>
<td>CEST</td>
<td>+2</td>
<td>0:00</td>
</tr>
<tr>
<td>China Standard Time</td>
<td>CST</td>
<td>+8</td>
<td>15:00</td>
</tr>
<tr>
<td>Japan Standard Time</td>
<td>JST</td>
<td>+9</td>
<td>16:00</td>
</tr>
<tr>
<td>Eastern Daylight Time</td>
<td>EDT</td>
<td>-4</td>
<td>3:00</td>
</tr>
<tr>
<td>Pacific Daylight Time</td>
<td>PDT</td>
<td>-7</td>
<td>0:00</td>
</tr>
</tbody>
</table>
To the creation of high value-added technology and innovative new leap

Global brilliance

Creation of unknown technology born from the Triangle
Scientific Program

Tutorial lectures

Advances in theoretical description of point defects in solids - electronic structure methods & selected examples
Audrius Alkauskas | Center for Physical Sciences and Technology, Lithuania

Optically detected magnetic resonance of defects: from fundamental to qubits
Nguyen Tien Son | Linköping University, Sweden

Solid state defect qubits - towards full ab initio description
Adam Gali | Wigner Research Centre for Physics, Hungary

Detection and quantitative analyses of defects in semiconductors and their alloys using atom probe tomography
Alain Portavove | CNRS-IM2NP, France

Capacitance spectroscopy of defects
Anders Hallen | KTH, Sweden

Infrared spectroscopy of defects
Michael Stavola | Lehigh University, USA

Tutorial on quantum computing with defects in semiconductors
Susan Coppersmith | University of New South Wales, Australia
Live Presentations

Monday July 26th

Plenary Session I
Session Chair: Martin Brandt | Technical University Munich, Germany

9:00 AM  Opening

9:10 AM  Broad diversity of near-infrared single-photon emitters in silicon
Anaïs Dreau | Montpellier University, France

Quantum Defects I: Diamond and SiC
Session Chair: Jeffrey McCallum | University of Melbourne, Australia

10:30 AM  (Invited) NV centres in diamond as local probes of fields, strain and temperature
Jean-Phillipe Tetienne | University of Melbourne, Australia

11:00 AM  Rydberg excitations of the neutral Silicon Vacancy center in diamond and their role in the spin selective decay
Gergő Thiering | Wigner Research Centre for Physics, Hungary

11:20 AM  Stacking fault-spin defect complexes for quantum technology applications
Igor Abrikosov | Linköping University, Sweden

11:40 AM  Wavelength Dependence of the Electrical Readout of NV Centers in Diamond
Lina Maria Todenhagen | Technische Universität München, Germany

12:00 PM  Photoionization of negatively charged NV centers in diamond: theory and ab-initio calculations
Lukas Razinkovas | Center for Physical Sciences and Technology, Lithuania
Monday July 26th

Plenary Session II
Session Chair: Matt McCluskey | Washington State University, USA

5:00 PM  **Shining the spotlight on defects in Ga$_2$O$_3**
Michael Scarpulla | University of Utah, USA

5:50 PM  **Atomic scale investigation of point and extended defects in gallium oxide**
Jinwoo Hwang | Ohio State University, USA

Gallium Oxide I
Session Chair: Holger von Wenckstern | Universität Leipzig, Germany

7:00 PM  **(Invited) First-principles studies of band alignments and doping of AlGaO alloys**
John Lyons | Naval Research Laboratory, USA

7:30 PM  **The Ga(1) vacancy in β-Ga$_2$O$_3$ and its family of trapped impurities**
W. Beall Fowler | Lehigh University, USA

7:50 PM  **O-H centers that contain Si and Fe impurities in Ga$_2$O$_3**
Michael Stavola | Lehigh University, USA

8:10 PM  **Exploring donor dopant candidates in (Al,Ga)$_2$O$_3$ alloys through hybrid functional calculations**
Joel Varley | Lawrence Livermore National Laboratory, USA

8:30 PM  **Defects in gallium oxide, in the bulk and on the surface**
Matthew McCluskey | Washington State University, USA
Tuesday July 27th

Plenary Session III
Session Chair: Jean-Phillipe Tetienne | University of Melbourne, Australia

8:30 AM  Imaging defects in silicon carbide
Brett Johnson | University of Melbourne, Australia

Silicon Carbide
Session Chair: Ulrike Grossner | ETHZ, Switzerland

9:20 AM  (Invited) SiC NV centers for quantum applications
Weibo Gao | Nanyang Technological University Singapore, Singapore

9:50 AM  Optical and microwave control of spin-1/2 transition metal defects in SiC
Carmem M. Gilardoni | University of Groningen, Netherland

10:30 AM  (Invited) Defect analysis in 4H-SiC using low-energy muons
Judith Wörle | ETH Zürich, Switzerland

11:00 AM  Resolving the vibronic fine structure of silicon vacancy emission in silicon carbide
Marianne E. Bathen | ETH Zürich, Switzerland

11:20 AM  Dipolar Spin Relaxation of Divacancy Qubits in Silicon Carbide
Oscar Bulancea Lindvall | Linköping University, Sweden

Selenides and Tellurides
Session Chair: Weibo Gao | Nanyang Technological University Singapore, Singapore

11:40 AM  SO₄ complexes in CdTe and CdSe
Frank Herklotz | Technische Universität Dresden, Germany

12:00 PM  Rapid Recombination by Cadmium Vacancies in CdTe
Sean R. Kavanagh | University College London & Imperial College London, UK

12:30 PM  Dopability and Defect Tolerance in Antimony Selenide
Christopher Savory | University College London, UK
Tuesday July 27th

Nitrides I
Session Chair: Ben Hourahine | University of Strathclyde, UK

5:00 PM Carrier Dynamics Near a Crack in GaN Microwires with AlGaN Multiple Quantum Wells
Sylvain Finot | University Grenoble Alpes, CNRS, France

5:20 PM Shallow and deep states of beryllium acceptor in GaN: why photoluminescence experiments do not reveal small polarons for defects in semiconductors
Denis Demchenko | Virginia Commonwealth University, USA

5:40 PM Photoluminescence study of point defects in ammonothermal GaN
Michael Reshchikov | Virginia Commonwealth University, USA

6:00 PM Nitrogen vacancy-acceptor complexes in GaN
Mykhailo Vorobiov | Virginia Commonwealth University, USA

Plenary Session IV
Session Chair: Andrej Kuznetsov | University of Oslo, Norway

6:20 PM Silicon telecom colour centres
Stephanie Simmons | Simon Fraser University, Canada

Poster Session I
7:10 PM - 8:30 PM

All posters can be viewed throughout the conference, but authors are encouraged to be present during at least one of the poster sessions.
Wednesday July 28th

Silicon I

Session Chair: Marisa Di Sabatino Lundberg | Norwegian University of Science and Technology, Norway

8:30 AM (Invited) Formation Behavior of Oxygen Precipitates in Silicon Wafers Subjected to Ultra-High-Temperature Rapid Thermal Process
Haruo Sudo | GlobalWafers Japan, Japan

9:00 AM Defect control and Si/Ge core-shell heterojunction formation on silicon nanowire surface formed by top-down method
Naoki Fukata | National Institute for Materials Science (NIMS), Japan

9:20 AM Characterization of grain boundaries’ electrical activity by conductive atomic force microscopy in mc-Si wafers
Pierpaolo Vecchi | University of Bologna, Italy

9:40 AM Experimental and theoretical investigation of the stoichiometry and morphology of oxide precipitates in silicon
Gudrun Kissinger | Leibniz Institute for high performance microelectronics, Germany

Oxides

Session Chair: Jan Eric Stehr | Linköping University, Sweden

10:30 AM (Invited) Hydrogen in anatase TiO$_2$
Eduard Lavrov | Technische Universität Dresden, Germany

11:00 AM Fe-Li complex emission in ZnO
Raphael Müller | Ulm University, Germany

11:20 AM Frenkel pairs versus secondary defects balance in ion irradiated semiconducting oxides
Andrej Kuznetsov | University of Oslo, Norway

11:40 AM (Invited) Designer Dopants for Improved Transparent Conducting Oxides
David Scanlon | University College London, UK

12:10 PM Identification of Li$_{Ni}$ and V$_{Ni}$ acceptor levels in doped nickel oxide
Robert Karsthof | University of Oslo, Norway
Wednesday July 28th

Quantum Defects II
Session Chair: Audrius Alkauskas | Center for Physical Sciences and Technology (FTMC), Lithuania

5:00 PM   (Invited) Single-photon emitters in hexagonal boron nitride
Mark Turiansky | University of California, Santa Barbara, USA

5:30 PM   Boron vacancy pair as a new quantum bit in hexagonal boron nitride with feasible decoherence protection and fabrication possibilities
Viktor Ivády | Wigner Research Centre for Physics & Linköping University, Hungary and Sweden

5:50 PM   Coherent Control of Spin Defects in hexagonal Boron Nitride
Vladimir Dyakonov | University of Würzburg, Germany

6:10 PM   Thermodynamics of carbon defects in hexagonal boron nitride
Marek Maciaszek | Warsaw University of Technology & Center for Physical Sciences and Technology (FTMC), Poland & Lithuania

6:30 PM   Room-temperature optically detected magnetic resonance of single defects in hexagonal boron nitride
Hannah Stern | University of Cambridge, UK

Fundamental I
Session Chair: Audrius Alkauskas | Center for Physical Sciences and Technology (FTMC), Lithuania

6:50 PM   First-principles calculations of shallow impurities
Chris Van de Walle | University of California, Santa Barbara, USA
Thursday July 29th

Perovskites
Session Chair: Justin Wells | University of Oslo, Norway

8:30 AM  (Invited) First-principles assessment of defect tolerance in halide perovskites
Xie Zhang | Beijing Computational Science Research Center, China

9:00 AM  Assessing the Impact of Defects on Lead-Free Perovskite-Inspired Solar Cells via Photo-Induced Current Transient Spectroscopy
Vincenzo Pecunia | Soochow University, China

9:20 AM  Role of Hydrogen in Defect Passivation of Cesium Lead Halide Perovskites Thin Films
Naomi Falsini | University of Florence, Italy

9:40 AM  (Invited) The Urbach tail in inorganic halide perovskites
Anna Vinattieri | University of Florence, Italy

Poster Session II
10:30 AM - 12:20 PM

All posters can be viewed throughout the conference, but authors are encouraged to be present during at least one of the poster sessions.

Silicon II
Session Chair: Gudrun Kissinger | IHP-Innovations for High Performance Microelectronics, Germany

2:00 PM  (Invited) Mitigation of LID and LeTID in photovoltaics - facets of hydrogen introduction
Tim Niewelt | Fraunhofer Institute for Solar Energy Systems ISE

2:30 PM  A family of defects with negative-U properties in Czochralski-grown silicon doped with Al, B, Ga, or In: complexes of a group-III substitutional atom with the oxygen dimer
Vladimir Markevich | The University of Manchester, UK

2:50 PM  Electron- and proton irradiation of strongly doped silicon of p-type: formation and annealing of boron-related defects
Vadim Emtsev | Ioffe Institute, Russian Academy of Sciences, Russia
Thursday July 29th

3:10 PM  Characterization of LPCVD Polycrystalline Silicon Trap-Rich Based Substrates for RF Applications  
Eric Vandermolen | CEA, LETI, Univ. Grenoble Alpes, France

Plenary Session V  
Session Chair: Joel Varley | Lawrence Livermore National Laboratory, USA

5:00 PM  Computational spectroscopy for point defects  
Cyrus Dreyer | Stony Brook University, USA

Fundamental II  
Session Chair: Joel Varley | Lawrence Livermore National Laboratory, USA

5:50 PM  Finite-Size Corrections of Defect Energy Levels Involving Ionic Polarization  
Stefano Falletta | Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

6:10 PM  (Invited) Integrated quantum photonics in Silicon Carbide  
Marina Radulaski | University of California, Davis, USA
Friday July 30th

Nitrides II
Session Chair: Giovanni Alfieri | Hitachi ABB Power Grids, Switzerland

8:30 AM  (Invited) Computics Approach to Dislocation-Impurity Complexes and Interface Characteristics of GaN Devices
Atsushi Oshiyama | Nagoya University, Japan

9:00 AM  Strain control for p-type doping of haecckelite GaN
Hannes Raebiger | Yokohama National University, Japan

9:20 AM  Do N vacancies exist in III-nitrides?
Filip Tuomisto | University of Helsinki, Finland

9:40 AM  A luminescence band related to carbon complexes in GaN:C observed by below bandgap excitation
Jan Beyer | TU Bergakademie Freiberg, Germany

10:00 AM  The mechanism for the emanation of a-type threading dislocations by stacking fault overlapping in III-nitride heterostructures
Julita Smalc-Koziorowska | Institute of High Pressure Physics PAS, Poland

Gallium Oxide II
Session Chair: Filip Tuomisto | Helsinki University, Finland

10:40 AM  Differences in deep levels spectra of proton irradiated bulk Ga$_2$O$_3$ crystals as affected by orientation changing from (010) to (-201)
Alexander Y. Polyakov | National University of Science and Technology MISiS, Russia

11:00 AM  Magnetic Resonance and Magneto-optical Properties of Cr$^{3+}$ in β-Ga$_2$O$_3$
Jan Eric Stehr | Linköping University, Sweden

11:20 AM  Identifying vacancy defects in β-Ga$_2$O$_3$
Ilja Makkonen | University of Helsinki, Finland

11:40 AM  Charge state transition levels of cobalt in β-Ga$_2$O$_3$ from experiment and theory
Palvan Seyidov | Leibniz-Institut für Kristallzüchtung, Germany
Friday July 30th

12:00 PM Identification of Fe-, Ti- and H-related Charge-state Transition Levels in β-Ga2O3

Christian Zimmermann | University of Washington, USA

12:20 PM Closing Remarks
The Klar Mini Pro microscope is a compact, affordable instrument designed for scientists who need spectral information with high spatial resolution.

Mini Pro focuses a laser on the sample and collects the emitted light. The sample is scanned and PL spectra are obtained at each (x,y) point. The objective is adjusted in the z direction to maintain focus.

Millions of spectra can be taken this way. Analysis software rapidly determines the peak energy and intensity for each spectrum. This results in physically meaningful images with outstanding resolution and contrast.

The modular design enables researchers to quickly change wavelength ranges and experimental setups. In addition to PL, the microscope can be easily configured to take Raman and reflectivity spectra.

**Highlights**
- Laser excitation 355–980 nm
- PL spectral range 355–1700 nm
- Submicron in-plane resolution
- Millions of spectra can be collected
- Fast peak-fitting software
- Compact (1 sq. ft.)
- Enclosure insulates microscope from temperature variations, dust, light
- Affordable

**Applications**
- Defect identification in light-emitting diodes
- PL mapping of wide-bandgap semiconductors
- Luminescence of 2D materials
- Compositional analysis of semiconductor alloys
- Failure analysis and quality control

**Klar offers measurement services** to provide clients with photoluminescence (PL) and Raman maps of their samples. Klar will deliver maps, data sets, and peak fits for samples ranging from micron-to-centimeter sizes.
On-demand presentations (by topic)

Nitrides

The impact of surface defects created by the high-temperature GaN growth on the InGaN/GaN quantum well efficiency

Yao Chen | École polytechnique fédérale de Lausanne (EPFL), Switzerland

Nitrogen-displacement-related hole traps introduced by electron beam irradiations in MOVPE-grown homoepitaxial p-type GaN

Meguru Endo | Nagoya University, Japan

Defect structures in (001) zincblende GaN/3C-SiC nucleation layers

Martin Frentrup | University of Cambridge, UK

Vibrational modes of mono-, di- and tri-carbon defects in GaN:C

Ivan Gamov | Leibniz-Institut für Kristallzüchtung (IKZ), Germany

Carrier dynamics in and around trench defects in InGaN QWs probed by time resolved cathodoluminescence

Gunnar Kusch | University of Cambridge, UK

Gyrotron Microwave Beam Parameter Influence on P-Conductivity in Co-Implanted and Annealed GaN: Optical and Electrical Studies

Vincent Meyers | SUNY Polytechnic Institute Albany, USA

Defect Mediated Color-tunability in Eu-doped GaN-based LEDs

Hayley Austin | Lehigh University, USA

The Role of Threading Edge Dislocations in the Electronic Properties of AlGaN/GaN Heterostructures: Experimental and First-principles Insights

Rong Wang | Zhejiang University, China

Cathodoluminescence imaging of non-radiative point defects buried in InGaN/GaN quantum wells

Thomas Weatherley | Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland
Gallium Oxide

**Dominating migration barrier for intrinsic defects in gallium oxide at and above room temperature**

Alexander Azarov | University of Oslo, Norway

**Interstitial defects stability at a β-(AlxGa1-x)2O3/β-Ga2O3 interface**

Adrian Chmielewski | The Pennsylvania State University, USA

**Multistability of Ga-O divacancies in β-Ga2O3**

Ymir Kalmann Frodason | University of Oslo, Norway

**Radiation resistance and Cascade Density Effect in β-Ga2O3**

Platon Karaseov | Peter the Great St.-Petersburg Polytechnic University, Russia

**Defect properties of SiO2 and Al2O3 in the metal oxide semiconductor capacitors of β-Ga2O3**

Rujun Sun | The University of Utah, USA

---

Silicon and Silicon Carbide

**Identification of the M-center in 4H-SiC as a carbon self-interstitial**

José Coutinho | University of Aveiro, Portugal

**Kramers doublet transition metal point defects in hexagonal silicon carbide**

Andras Csore | Budapest University of Technology and Economics, Hungary

**Laser Interferometry Lithography and Quantum Efficiency Measurements of Nanograting Silicon PN Junctions**

Nima E. Gorji | Dublin City University, Ireland

**Improving the doping efficiency of Al in 4H-SiC by co-doping group-IVB elements**

Yuanchao Huang | Zhejiang University, China

**Formation of interstitial boron-substitutional carbon complex and capture radii for interstitial boron in silicon**

Leonid Makarenko | Belarusian State University, Belarus
Stacking fault expansion in 4H-SiC due to low energy electron beam irradiation

Eugene Yakimov | Institute of Microelectronics Technology RAS, Russia

Quantum defects

Coherent phonon generation of ultrafast exciton trapping at VSe+O2 defect complex in monolayer MoSe2

Soungmin Bae | Yokohama National University, Japan

Optical and spin properties of shallow implanted nitrogen vacancy centers in diamond

Srivatsa Chakravarthi | University of Washington, USA

Position-controlled quantum emitters with reproducible emission wavelength in hBN

Aymeric Delteil | Université Paris-Saclay, France

Shallow donor ensembles in ZnO for optical quantum memory applications

Christian Zimmermann | University of Washington, USA

Fundamental

Ion Implantation Damage of Hyperdoped Semiconductors Investigated Using Time-resolved Terahertz Spectroscopy

Sashini Senali Dissanayake | Wesleyan University, USA

Electron-Hole Recombination and Spin Dynamics for Quantum Defects in Two Dimensions

Yuan Ping | University of California, Santa Cruz, USA

Other Materials

Thermal evolution of point and extended defects in N-implanted ZnO and (ZnO)_{1-x}(GaN)_x thin films: STEM-EELS investigations

Calliope Bazioti | University of Oslo, Norway
Passivation mechanism of harmful defects in Se alloyed CdTe

Sameer Gupta | Univ. Grenoble Alpes and CEA, France

Enhancement of Er luminescence from bridge-type photonic crystal nanocavities with Er,O-codoped GaAs

Zhidong Fang | Osaka University, Japan

Enhancing dielectric constant of pulsed laser deposition grown ZnO via co-doping of acceptor and donor

Francis Ling | The University of Hong Kong, Hong Kong / China

Multiple defect-assisted mechanisms determine blinking of I-III-VI quantum dots

Adam Olejniczak | Polish Academy of Sciences, Poland

An atomic scale study of isoelectronic dopant pairs in GaAs using X-STM and DFT

Tom Verstijnen | Eindhoven University of Technology, Netherlands

CaCuP: A Degenerate Wide Band Gap Phosphide for Transparent Conducting Applications

Joe Willis | University College London, UK

Tailoring oxygen-related point defects with a technology to create and irradiate negatively charged oxygen (O⁻) ions to control electrical, optical properties and band gaps of Sn-doped In₂O₃ films

Tetsuya Yamamoto | Kochi University of Technology, Japan
Special Topic on Defects in Semiconductors to be published in *Journal of Applied Physics*

The ICDS Committee and the Editor-in-Chief of Journal of Applied Physics are pleased to announce that *Journal of Applied Physics* will feature a Special Topic on Defects in Semiconductors. This collection of articles aims to deliver state-of-the-art findings and understanding of fundamentals of defects in semiconductors. The Guest Editors for this Special Topic are Lasse Vines, Andrej Yu. Kuznetsov and Eduard Monakhov (University of Oslo).

The *Journal of Applied Physics* Special Topic collection on Defects in Semiconductors welcomes submissions from both the ICDS and the broader community of researchers working in the field. Please note that manuscripts considered for publication as Articles in Journal of Applied Physics are expected to meet *Journal of Applied Physics*' standards of acceptance, i.e. to report on original and timely results that significantly advance understanding in the current status of contemporary applied physics. Material that is exclusively review in nature will not be considered for publication, however, Perspective and Tutorial papers will be included on an invitation-only basis. Manuscripts submitted for consideration in this Special Topic will undergo the *Journal of Applied Physics* standard peer-review process. *Journal of Applied Physics* Editors’ Team will issue final decisions on the submitted manuscripts.

To learn more and submit to the Special Topic, click here (https://publishing.aip.org/publications/journals/special-topics/jap/defects-in-semiconductors-2022/)
Poster presentations (alphabetical order by last name)

**Detection of Interstitial-Defect Levels in Mg-Ion-Implanted GaN Using MOS Diodes.**

Masamichi Akazawa | Hokkaido University, Japan

**Energy structure and luminescence line shapes of point defects in AlN**

Ivan Aleksandrov | Rzhanov Institute of Semiconductor Physics, Russia

**Deep Levels in 4H-SiC Implanted with Amphoteric Species**

Giovanni Alfieri | Hitachi ABB Power Grids, Switzerland

**Investigation of the effect of gamma radiation on the electrical properties of n-type GaAs$_{1-x}$Bi$_x$ layers grown by Molecular Beam Epitaxy**

Sultan Alhassan | University of Nottingham, UK

**Synthesis and electrical characterization of GaN grown by electrochemical deposition**

Abdulraoof Ali | University of Pretoria, South Africa

**Investigation of Electrically Active Defects in GeSiSn/Si Multi Quantum Wells Using Deep Level Transient Spectroscopy Technique**

Abdulaziz Almaki | University of Nottingham, UK

**Electrical Properties of In$_{0.5}$Ga$_{0.5}$P n-i-p solar cells grown by metal organic chemical vapor deposition using I-V, C-V and Deep level Transient Spectroscopy**

Saud Alotaibi | University of Nottingham, UK

**Quantum-well features of Shockley stacking faults in 4H-SiC**

Rohit Babar | Linköping University, Sweden

**Positively Charged Muonium in Cadmium Oxide**

Brittany Baker | Francis Marion University, USA

**Computational Design of Quantum Defects in Low-Dimensional Semiconductors**

Fabian Bertoldo | Technical University of Denmark, Denmark

**Mg related charge transitions in Ga$_2$O$_3$:Mg**

Suman Bhandari | University of Alabama at Birmingham, USA

**High-Throughput Search of Point Defects in SiC**

Joel Davidsson | Linköping University, Sweden
Poster presentations (continued)

**Illumination-Induced Defectivity in β-Ga$_2$O$_3$ Epilayers**

Brian Eisner | University of Utah, USA

**Using Illumination to Modify Defects in β-Ga$_2$O$_3$ at 1000 °C**

Brian Eisner | University of Utah, USA

**Dopability of Telluride Diamond-Like Semiconductors and Ordered Vacancy Compounds for Thermoelectric Applications**

Elif Ertekin | University of Illinois at Urbana-Champaign, USA

**Origin of the external quantum efficiency reduction in InGaP/InAlGaP micro light emitting diodes**

Philippe Ferrandis | University of Toulon, France

**Quantum emitters in silicon: identification attempt in the context of recent literature data**

David Rivas Gongora | University of Oslo, Norway

**Bundle-type columnar Cu$_2$O photoabsorbers with vertical grain-boundaries using instant strike processed metallic seeds and their enhanced photoelectrochemical efficiency**

Ji Hoon Choi | Sungkyunkwan University, South Korea

**Modeling of the point defect migration across the AlN/GaN interfaces – ab initio study**

Roman Hrytsak | Polish Academy of Science, Poland

**Interstitial and substitutional nitrogen in silicon crystal studied by infrared absorption spectroscopy of multiple peaks**

Naohisa Inoue | Osaka Prefecture University Japan

**Al-Catalyzed Si Nanowire Formations on Thin Si Substrates and Photovoltaic Applications**

Wipakorn Jevasuwan | National Institute for Materials Science (NIMS), Japan

**Electronic properties and the dominant levels in ZnON**

Kjetil Karlsen | University of Oslo, Norway

**Conversion pathways of primary defects by annealing in proton-irradiated n-type 4H-SiC**

Robert Karsthof | University of Oslo, Norway
Poster presentations (continued)

Identification of LiNi and VNi acceptor levels in doped nickel oxide
   Robert Karsthof | University of Oslo, Norway

Telecom-frequency, silicon-based impurities embedded in dielectric Mie resonators towards directional emission
   Mario Khoury | IM2NP, France

Robust spin coherence with optical access for the Zink-Vacancy in ZnSe
   Erik Kirstein | TU Dortmund, Germany

A Study on the Spin Coating Process Optimization
   Sungjun Kim | Sungkyunkwan University, South Korea

A Study on the vdW Semiconductor with Ferroelectric Polymer
   Sungjun Kim | Sungkyunkwan University, South Korea

Defect-annealing in Si⁺-implanted β-Ga₂O₃
   Snorre B. Kjeldby | University of Oslo, Norway

Electronic states and radiative transitions in germanium doped with shallow donors: effect of short-range potential
   Anton Konakov | Lobachevsky University, Russia

Identification of mechanism of defect formation in plastically relaxed individual semiconductor heteronanowires by transmission electron microscopy
   Slawomir Kret | Polish Academy of Sciences, Poland

Electron Irradiation-Induced Defects In Carbon doped n-GaN
   Piotr Kruszewski | Polish Academy Of Sciences, Poland

The influence of Cd and Hg doping on defect states formation in AgInS₂ quantum dots
   Rafał Krzysztof Kosman | Polish Academy of Sciences, Poland

Diffusion of donor dopants in β-Ga₂O₃ and interplay with gallium vacancies
   Patryk Krzyzaniak | University of Oslo, Norway

Highlights of 15R crystal phase in au-catalyzed ZnS nanowires
   Sumit Kumar | Université Paris-Saclay, France

Defects in 10-13 GaN: An electron microscopy study
   Gunnar Kusch | University of Cambridge, UK
Poster presentations (continued)

Carbon vacancy control in silicon carbide p-n diodes and thick ultra-low doped n-type epi-layers

Andrej Kuznetsov | University of Oslo, Norway

Steady-state Photo-capacitance Spectroscopy of Intrinsic Defects in Electron-Irradiated β-Ga2O3

Amanda Langørgen | University of Oslo, Norway

Spin-dependent transport in silicon carbide devices

Christopher Lew | University of Melbourne, Australia

Transport phenomena in copper doped cadmium telluride: calculation from the first principles

Orest Malyk | Lviv Polytechnic National University, Ukraine

Probing the SiO2/SiC interface with nanometer depth resolution using low-energy muons

Maria Martins | Paul Scherrer Institute, Switzerland

Study of Ti contacts to corundum α-Ga2O3 – ohmic behavior and interfacial reactions

Fabien Massabuau | University of Strathclyde, UK

Muonium in β-Ga2O3

Rick (P.W.) Mengyan | Northern Michigan University, USA

Generation rates of electron-hole pairs due to a passage of protons and Si ions: investigation by the methods of time-dependent density functional theory and electron force field

Kirill Migdal | Dukhov Automatics Research Institute (VNIIA), Russia

Substitutional boron-doping of silicene nanoribbons when the presence of external field

Hoang Van Ngoc | Thu Dau Mot University, Vietnam

Diverse Electronic and Magnetic Properties of Semiconducting Silicene Nanoribbons Under Halogen Adsorption Effect

Duy Khanh Nguyen | Thu Dau Mot University, Vietnam

Diverse structural and electronic properties of carbon-substituted silicene nanoribbons

Thanh Tung Nguyen | Thu Dau Mot University, Vietnam
Poster presentations (continued)

Impact of growth conditions on the optoelectronics applications of CH$_3$NH$_3$PbI$_3$, studied by low-energy mSR

Xiaojie Ni | Paul Scherrer Institute, Switzerland

Tailoring quantum defect properties for quantum transduction with trapped ions

Vasileios Niaouris | University of Washington, USA

The effect of deep levels on the efficiency of InGaAs quantum wire intermediate-band solar cells based nanostructures grown by molecular beam epitaxy

Noor alhuda Al Saqri | Sultan Qaboos University, Oman

Segregation mechanism of arsenic dopants at Si grain boundaries

Yutaka Ohno | Tohoku University, Japan

Interplay between intrinsic and extrinsic defects in ZnSnN$_2$

Vegard Skiftestad Olsen | University of Oslo, Norway

Near-Surface SiV Charge Behavior After Cold Hydrogen Treatment

Christian Pederson | University of Washington, USA

Ga$_2$O$_3$ Schottky Photodiodes: Effects of Holes Trapping on Photosensitivity

Alexander Y. Polyakov | National University of Science and Technology (MISiS), Russia

Theory and experiment of Si – cation vacancy interactions in nitride semiconductors

Igor Prozheev | University of Helsinki, Finland

Evidence of O-polar (000-1) ZnO surfaces induced by in situ Ga doping

Vincent Sallet | GEMAC, CNRS-UVSQ, France

A Framework for Calculating Defect Concentrations Including Under Generalized Quenching Implemented in MATLAB

Mike Scarpulla | University of Utah, USA

Fine core structure and spectral luminescence features of freshly introduced dislocations in Fe-doped GaN

Sevastian Shapenkov | Saint-Petersburg State University, Russia

Dislocation relaxation in wide band gap heterostructures with trigonal and hexagonal crystal lattices

Andrei Smirnov | ITMO University, Russia
Poster presentations (continued)

Electrically Active Extended Defects in Ferromagnetic Structures based on Ga(Mn)InAs compounds

Oleg Soltanovich | Institute of Microelectronics Technology RAS, Russia

Machine Learning Assisted Identification of Threading Dislocations

Bohdan Starosta | University of Strathclyde, UK

Analyzing the polarization properties of O-H centers in β-Ga₂O₃

Andrew Venzie | Lehigh University, Bethlehem, USA

Deep levels at native defects and impurities in cesium lead bromide

Michael W Swift | US Naval Research Laboratory, USA

Investigation of MOCVD parameters correlation vs AIIIBV quality

Oleg Rabinovich | NUST MISIS, Russia

Thermal annealing of GaN implanted with Be

Michael Reshchikov | Virginia Commonwealth University, USA

Edge and screw threading dislocations in heteroepitaxial GaN layers

Cosmin Romanitan | National Institute for Research and Development in Microtechnology, Romania

Elastic constants of pseudo-graphenes

Mikhail Rozhkov | ITMO University, Russia

Terahertz time-domain spectroscopy of GaAs epitaxial layers treated with the use of fast atom bombardment

Hideo Takeuchi | Osaka City University, Japan

Electronic structure of neutral group-IV Vacancy colour centres in diamond

Gergő Thiering | Wigner Research Centre for Physics, Hungary

Size-dependent quantum efficiency of red emission from GaN:Eu micro-structures

Dolf Timmerman | Osaka University, Japan

Achieving bulk-insulating states in Pb(Bi,Sb)₂(Te,Se)₄ topological insulator

Yuki Tokumoto | The University of Tokyo, Japan
Poster presentations (continued)


Vo Van On | Thu Dau Mot University, Vietnam

Polytypism in Zinc Sulphide thin films during RF Magnetron Sputtering

Vishnukanthan Venkatachalapathy | University of Oslo, Norway

Comparison of $\beta$-Ga$_2$O$_3$ photoluminescence upon anneals in vacuum, oxygen- and gallium-rich atmospheres

Vishnukanthan Venkatachalapathy | University of Oslo, Norway

Influence of annealing on the electrical properties of ITO deposited under different ambient atmospheres

Vishnukanthan Venkatachalapathy | University of Oslo, Norway

Dislocations in GaN: the activation energy for the glide and dislocation–related luminescence

Pavel Vergeles | Institute of Microelectronics Technology RAS, Russia

Effect of pulling speed on oxygen related defects in Czochralski silicon ingots

Gabriela K. Warden | Norwegian University of Science and Technology, Norway

Evolution of hydrogen-related defects in float zone-grown silicon wafers under dark annealing: resistivity change vs. FT-IR

Philip Weiser | University of Oslo, Norway

Can muons probe charge carrier kinetics in direct gap semiconductors?

Koji Yokoyama | STFC Rutherford Appleton Laboratory, UK

Approaches to Kinetics of Point Defect Formation and Evolution in Gallium Oxide

Nathan Yonkee | University of Utah, USA
Committees

Conference Chair

Lasse Vines, Oslo University, Norway

International Program Committee

Martin Allen, University of Canterbury, New Zealand
Martin Brandt, Technical University Munich, Germany
Irina Buyanova, Linkoping University, Sweden
Marilia Caldas, USP, Brazil
Jean-Louis Cantin, Institut des NanoSciences de Paris, France
Fatemeh Shahedipour-Sandvik, State University of New York Polytechnic Institute, USA
Julita Smalc-Koziorowska, Institute of High Pressure Physics, Polish Academy of Sciences
Tim Veal, University of Liverpool, UK
Shengbai Zhang, Rensselaer Polytechnic Institute, USA
Holger von Wenckstern, Univ. Leipzig, Germany
Joel Varley, Univ. Michigan, USA
Ulrike Grossner, ETHZ, Switzerland
Giovanni Alfieri, Hitachi ABB Power Grids, Switzerland
Alexander Polyakov, National University of Science and Technology MISIS, Russia
Andrej Kuznetsov, University of Oslo, Norway
Filip Tuomisto, Helsinki University, Finland
Matt McCluskey, Washington State University, USA
Suhuai Wei, Beijing Computational Science Research Center, China
Elif Ertekin, University of Illinois, USA
Chris Van de Walle, UC Santa Barbara, USA
Jeffrey McCallum, University of Melbourne, Australia
Yasufumi Fujiwara, Osaka University, Japan
Gudrun Kissinger, IHP-Innovations for High Performance Microelectronics, Germany
Michael Stavola, Lehigh University, USA
Tetsuya Yamamoto, Kochi University of Technology, Japan
Mary Ellen Zvanut, University of Alabama at Birmingham, USA
Ben Hourahine, University of Strathclyde, UK
Anderson Janotti, University of Delaware, USA
Hannes Raebiger, Yokohama National University, Japan
Jan Eric Stehr, Linköping University, Sweden
Rachel Oliver, University of Cambridge, UK

International Steering Committee

Filip Tuomisto, University of Helsinki and Aalto University, Finland
Matt McCluskey, Washington State University, USA
Lasse Vines, Oslo University, Norway
International Advisory Committee:

Elif Ertekin, University of Illinois, USA
Tetsuya Yamamoto, Kochi University of Technology, Japan

Kai-Mei Fu, University of Washington, USA
Mary Ellen Zvanut, University of Alabama at Birmingham, USA

Jeff McCallum, University of Melbourne, Australia
Ben Hourahine, University of Strathclyde, UK

Chris G. Van de Walle, University of California, Santa Barbara, USA
Anderson Janotti, University of Delaware, USA

Suhuai Wei, Beijing Computational Science Research Center, China
Rachel Oliver, University of Cambridge, UK

Yasufumi Fujiwara, University of Osaka, Japan
Hannes Raebiger, Yokohama National University, Japan

Gudrun Kissinger, IHP-Innovations for High Performance Microelectronics, Germany
Jan Eric Stehr, Linköping University, Sweden

Michael J. Stavola, Lehigh University, USA
UiO: Centre for Materials Science and Nanotechnology
University of Oslo

The Research Council of Norway