ACCGE-24
OMVPE-22
Washington, USA

24th American Conference on Crystal Growth & Epitaxy (ACCGE-24)

and

22nd US Workshop on Organometallic Vapor Phase Epitaxy (OMVPE-22)




Stevenson, Washington
USA

July 13-18, 2025

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Welcome to Skamania, Washington

The American Association for Crystal Growth (AACG) and the conference organizing committees are pleased to extend a warm and friendly welcome to all participants in:

The 24th American Conference on Crystal Growth and Epitaxy (ACCGE-24)
The 22nd Workshop on Organic Metal Vapor Phase Epitaxy (OMVPE-22)

The biennial jointly held conferences comprise all things crystal growth and epitaxy - growth methods (melt, vapor, solution, etc.), material type (semiconductors, biological, oxides, etc.), dimensionality (bulk, thin films, 2D, nano) and properties (optical, electronic, optoelectronic, ferroelectric, etc.) building on its historical strength. Multiple parallel sessions across five days will provide participants with broad exposure to the state-of-the-art in the science and technology of crystal growth and epitaxy. Efforts have been made to schedule the conference to flow among topical areas and avoid overlapping of similar interest areas; however, some conflicts are unavoidable due to the full program and the wide range of interests among attendees. Participants are encouraged to plan their schedule to maximize interaction with their interests.

We trust the outstanding technical program, the beautiful surroundings of Stevenson, Washington, the hospitality of the Skamania Lodge, and the conference social program will make this a one-of-a-kind conference experience for all attendees, presenters, vendors, sponsors, and guests. We wish you an enjoyable, rewarding, and productive conference.

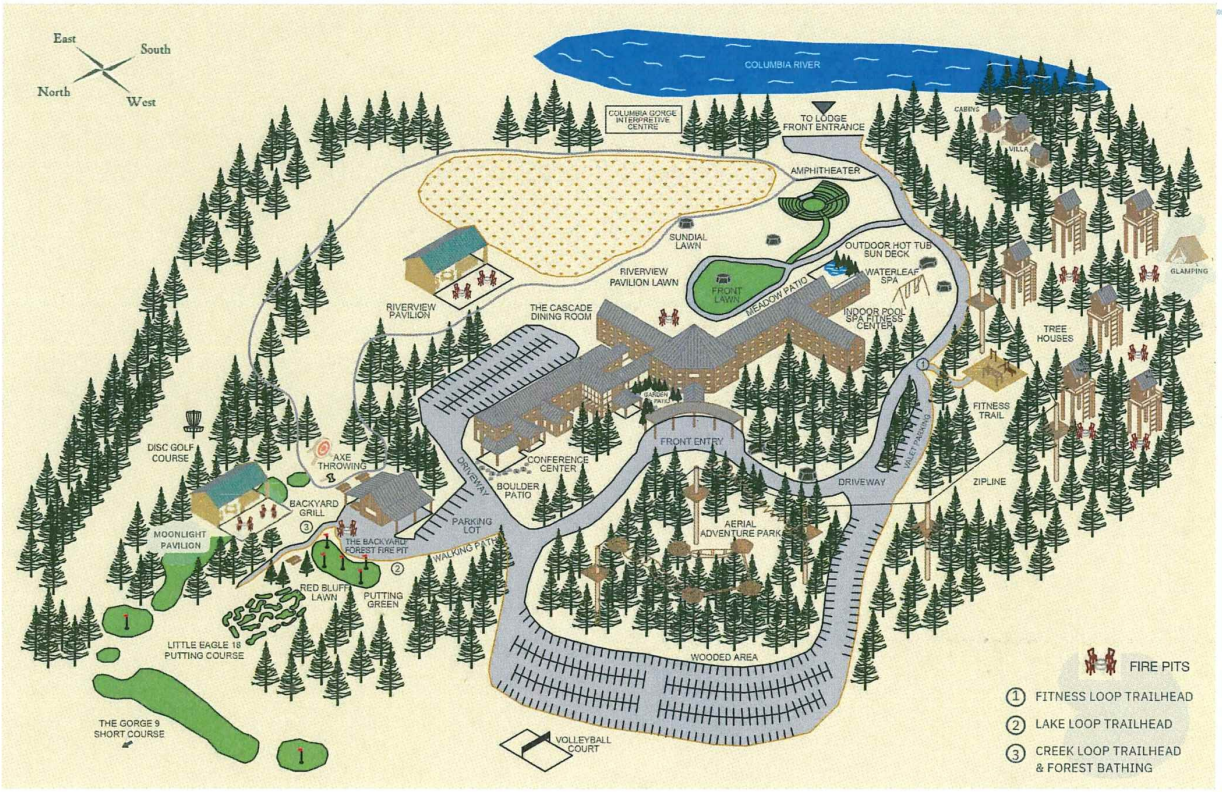
Siddha Pimputkar & Balaji Raghothamachar, ACCGE-24 Conference Chairs

Kevin Daniels, ACCGE-24 Program Chair

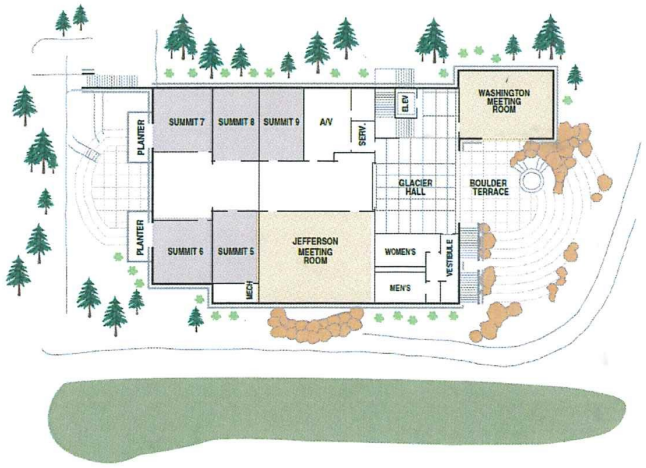
Andy Allerman, OMVPE-22 Conference and Program Chair

Skamania Lodge Conference Center Floor Plans

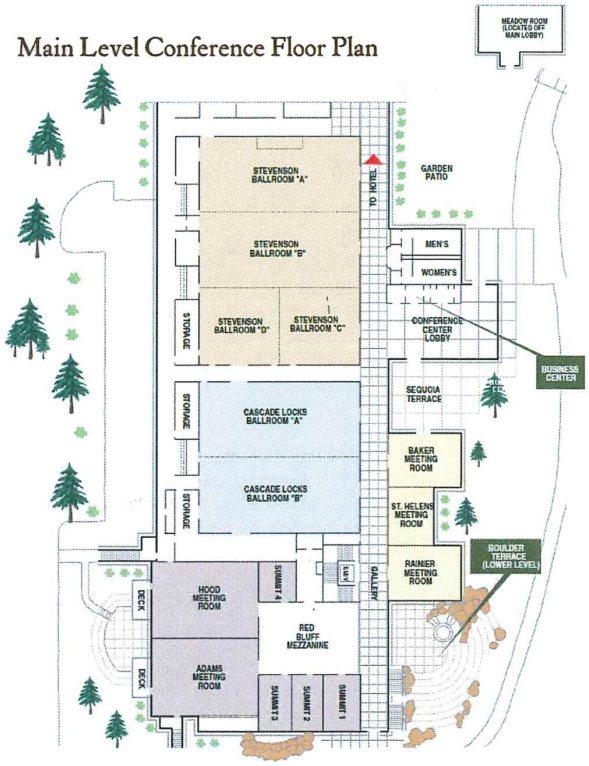
Main Level Lodge



Lower Level Conference Floor Plan



Main Level Conference Floor Plan



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Lehigh University

Conference Co-Chair:
Balaji Raghothamachar
Stony Brook University

OMVPE Chair:
Andy Allerman
Sandia National Laboratory

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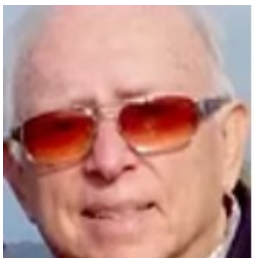

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Stanford

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Ouloide Yannick Goue
Xavier University of Louisiana

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Conference Sponsors

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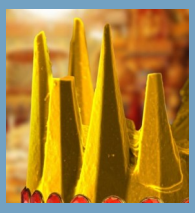
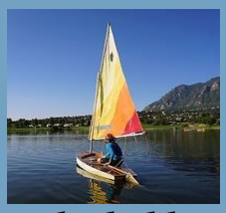




to be held at

Cheyenne Mountain Resort
Colorado Springs, CO, USA

July 25–29, 2027

The 25th American Conference on Crystal Growth and Epitaxy (ACCGE-25)

and

23rd US Workshop on Organometallic Vapor Phase Epitaxy (OMVPE-23)

Ruby Conference Sponsor

Graduate Student
Oral Presentation Award

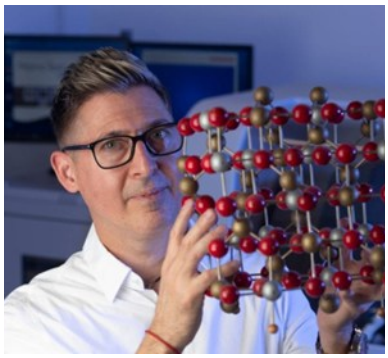
We are pleased to announce the first edition of the ACCGE/OMVPE Student Oral Presentation Awards. Three awards will be presented: 1st place, 2nd place, and 3rd place. These awards recognize the outstanding work and contributions of our graduate students to the field of crystal growth. Graduate students who have already submitted an abstract for a presentation at the conference are encouraged to compete for the awards. Those who have not submitted an abstract for the conference are also encouraged to compete if they have made arrangement to attend the conference.

Important Note:

- The Student Oral Presentation award will be held on Monday evening (July 14th) between 7:00 pm - 8:00 pm.
- Students must be enrolled as an undergraduate or graduate student as of the submission deadline
- Students must be the presenting author, even if not listed as first author
- Students will have ten minutes to present and answer questions
- A jury of three members will rate the students' presentation on the following criteria: content (depth and accuracy), clarity of presentation (organization, style and design of slides), knowledge of topic, oral delivery, and effective use of time
- Conference attendees are encouraged to attend the talks and support these young scientists.

Ruby Conference Sponsor

Plenary Speakers



David Kisailus

Henry Samueli Faculty Excellence Professor and
Kavli Fellow of the National Academy of Sciences
Director, Materials and Manufacturing Technologies Program
University of California, Irvine
"Synthesis of Multiscale High-Performance Biological Composites"

David Kisailus is a Professor in the Department of Materials Science and Engineering and Director of the Materials and Manufacturing Technologies Program at the University of California, Irvine. Professor Kisailus, a Kavli Fellow of the National Academy of Sciences and Member of UNESCO Chair in Materials and Technologies for Energy Conversion, Saving and Storage (MATECSS), received his Ph.D. in Materials Science from the University of California at Santa Barbara (2002), M.S. from the University of Florida in Materials Science and B.S. in Chemical Engineering from Drexel University. After his Ph.D., Prof. Kisailus was appointed as a post-doctoral researcher in the Institute for Collaborative Biotechnologies, University of California at Santa Barbara. Following this, he was a Research Scientist at HRL Laboratories and then joined as faculty at the University of California. Professor Kisailus is currently the PI of the Biomimetics and Nanostructured Materials Group and the Director of a Multi-University Research Initiative on Microbe-Materials Interactions for Lunar Environments with Pacific Northwest National Laboratories as well as Johns Hopkins and Northwestern Universities.

His team's research interests focus on understanding fundamental structure - property relationships in extreme biological materials, and using these key insights towards developing biomimetic structures for next generation multifunctional materials that can address many societal issues. He also investigates biological synthesis processes that guide resulting architected biological structures and uses this to develop solution-based and environmentally friendly processes to synthesize nanoscale materials with controlled crystal size, shape and phase for energy and environmental-based applications. Professor Kisailus has published more than 150 papers in journals such as Science, Nature, Nature Materials, Advanced Materials, ACS Nano, Advanced Functional Materials, PNAS and JACS. He has also been granted 17 patents (with more than 20 pending). His research is highlighted in high profile media including Nature, NY Times, LA Times, National Geographic, Discovery Channel and BBC.

Plenary Speakers

Bernardette Kunert

Scientific Director
imec
"III-V Integration in Silicon Photonics: Challenges and Opportunities"

Bernardette Kunert received her diploma and Dr. rer. nat. degree in Physics from the Philipps University of Marburg, Germany, in 2001 and 2005, respectively. From 2006 to 2013 she worked as a project manager for the start-up semiconductor technology company $NAsP_{III/V}$ GmbH, Germany. In 2013, she joined imec, Belgium, as a principal scientist. Since 2023 she is scientific director.

Bernardette Kunert has a strong background in epitaxial growth and characterization of III-V heterostructures and in (opto)electronic devices such as laser diodes, modulators, detectors, high electron mobility transistors (HEMTs), heterojunction bipolar transistors (HBTs), metal-oxide semiconductor field-effect transistors (MOSFETs) and multi-junction solar cells. In particular, the monolithic integration of III-V devices on silicon or germanium substrates and the invention of new device concepts have always been at the centre of her research interests.

In her current position, she is jointly responsible for the definition of the technology strategies at imec involving III-V compound materials. Connecting research groups across different units at imec and interacting with industrial partners, universities and customers allows Bernardette Kunert to initiate and explore new device concepts.

Joan Redwing

Distinguished Professor and
Director of 2D Crystal Consortium MIP
Pennsylvania State University
"Epitaxy of 2D van der Waals crystals - from fundamentals to applications"

Joan Redwing is a Distinguished Professor of Materials Science and Engineering at Pennsylvania State University where she holds an adjunct appointment in the Department of Electrical and Computer Engineering. Prof. Redwing currently serves as the Director of the Two-Dimensional (2D) Crystal Consortium – a Materials Innovation Platform user facility at Penn State funded by the USA National Science Foundation that is focused on advancing the synthesis of 2D materials for next generation devices. Her research focuses on crystal growth and epitaxy of electronic materials, with an emphasis on thin film and nanomaterial synthesis by metalorganic chemical vapor deposition (MOCVD). Prof. Redwing currently serves as vice president of the International Organization for Crystal Growth and the American Association for Crystal Growth. She is the North American regional editor for the journal 2D Materials. She is a fellow of the American Physical Society, Materials Research Society and the American Association for the Advancement of Science. She is an author or co-author on over 300 publications in refereed journals and holds 8 U.S. patents.

Plenary Speakers

Darrell Schlom

Tisch University Professor
Department of Materials Science and Engineering
Cornell University, USA
Leibniz-Institut für Kristallzüchtung, Germany
"Suboxides MBE Rocks!"

Darrell Schlom is the Tisch University Professor in the Department of Materials Science and Engineering at Cornell University. He also holds an honorary affiliation as the first "Leibniz Chair" of the Leibniz-Institut für Kristallzüchtung (IKZ) in Berlin, Germany. After receiving a B.S. degree from Caltech and a Ph.D. from Stanford University, he was a post-doc at IBM's research lab in Zurich, Switzerland. His research involves the heteroepitaxial growth and characterization of oxide thin films by reactive molecular-beam epitaxy (MBE), especially utilizing a "materials-by-design" approach to discover materials with properties superior to any known. His work has been recognized by the highest awards for materials discovery by five relevant societies: the Frank Prize from the *International Organization for Crystal Growth*, the MRS Medal from the *Materials Research Society*, the McGroddy Prize from the *American Physical Society*, the Thornton Memorial Award from the *American Vacuum Society*, and the John Bardeen Award from *The Minerals, Metals & Materials Society (TMS)*. He is a Fellow of the *American Physical Society*, the *Materials Research Society*, the *American Vacuum Society*, and is a member of the *National Academy of Engineering*.

Photo Contest

Please vote for your favorite entries in the following categories:

1) **Natural untouched micrographs or photographs**

2) **Digital/Altered photograph including computational simulations**

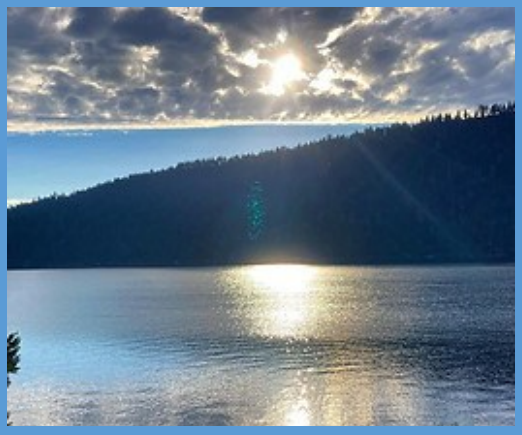
<u>First place</u> entries in each category and the <u>best student</u> entry will win award certificates and prizes. Please vote online using the QR code.

Please vote by Wednesday (July 15) afternoon!

Winners will be announced at the banquet.

AACG
West Conference

Fallen Leaf Lake, CA, USA * Tentative Dates June 14-17, 2026



The conferences focus on current and emerging challenges in understanding, engineering, and design of crystal growth in nature and technology. We welcome contributions in areas such as crystallization of biological and biomimetic materials, synthesis of crystalline material systems for renewable energy, environment and sustainability, interplay between synthesis and performance of functional materials, and fundamental aspects of nucleation, growth and phase transformations in a wide range of crystalline material systems. **The registration fee always includes all sessions, lodging, recreation and meals.**

Updates can be found on the conference website: **https://www.aacgwest.org/**

The West Chapter of the American Association for Crystal Growth is committed to introducing youth to the fields of science, technology, engineering, and mathematics (STEM). Our bi-annual conference aims to provide an interdisciplinary platform for researchers to discuss the fundamental nanoscale physics and chemistry that are central to the growth of crystals for a wide array of technologies.

Through fundraising from our very active outreach committee, generous donations from sponsors, and the hosting venue at Stanford Sierra Camp, we were able to have our inaugural class of high school and undergraduate students come to the 28th AACG Western Section Conference on Crystal Growth & Epitaxy, held at Fallen Leaf Lake, CA during June 9th – 12th, 2024.

This year, we had welcomed a group of high school students and two of their teachers from the Tracy Unified School District in Northern CA, another high school student from the Pringee School in South Hamilton, MA, and several undergraduate students from San Francisco State University, University of California Berkeley, and the University of California Irvine.

ACCGE24/OMVPE22

Presenter Guidelines

Each room will have an LCD projector, laser pointer, and microphone. The conference does not provide computers or laptops, so please be sure to bring your own or discuss with a colleague to borrow theirs. Please arrive at least 15 minutes before the session begins to check the connections between your computer and the projector. Note that time lost switching between computers or due to non-functioning computer graphics presentations will be deducted from the speaker's allotted presentation time.

Please direct any presentation questions to the chair for your session.

Plenary: 45 min presentation + 15 min Q&A
Invited: 25 min presentation + 5 min Q&A
Contributed: 17 min presentation + 3 min Q&A

ACCGE24/OMVPE22

Panels

Graduate Student Panel (Thursday 5:30 – 6:30 pm)

This panel offers graduate students a unique opportunity to engage with professionals from academia, industry, and national laboratories. Designed to foster open dialogue and networking, the session allows students to ask questions about career paths, research experiences, and professional development. Panelists will share personal insights and advice, helping students gain a broader perspective on opportunities beyond graduate school and make meaningful connections for their future careers. All are welcome and graduate students are encouraged to join.

Future of AACG Panel (Thursday 6:15 – 7:00 pm)

This panel invites a candid conversation on the current status and future direction of the American Association for Crystal Growth (AACG). As the field faces a general decline in engagement, it is crucial to reflect on how AACG can adapt and grow to better serve its community. Panelists will discuss opportunities to enhance partnerships with industry, strengthen connections to national labs and academia, and identify strategies for recruiting and supporting the next generation of crystal growers. Particular attention will be given to outreach efforts and creating meaningful pathways for students and early-career researchers to enter and remain in the field. Audience participation is strongly encouraged as we work together to reimagine AACG's role in shaping the future of crystal growth.

ACCGE24/OMVPE22
Proceedings

The Proceedings will be published in the *Journal of Crystal Growth*.

Manuscript submission deadline: September 15, 2025

Authors who have a paper accepted for oral presentation at the 24th American Conference on Crystal Growth and Epitaxy (ACCGE-24) and the 22nd Workshop on Organic Metal Vapor Epitaxy (OMVPE-22) are invited to submit manuscripts for consideration for publication in the conference proceedings. The length of the papers in the Proceedings is limited to four printed pages for regular contributed papers, five printed pages for invited papers, and six printed pages for plenary invited papers.

The manuscripts submitted will undergo a peer review process similar to regular publications.

Only work **presented** at the conference and that has not been published, nor is in press, or submitted for publication elsewhere will be considered for inclusion in the Proceedings.

Formatting instructions:

Please follow the formatting recommendations on the website. All manuscripts will be subject to the review process; submissions will be rejected if they do not describe original, unpublished work, or are not of high quality. A single printed column (text only) in the Journal of Crystal Growth is approximately 480 words. Please keep the page length limit in mind when preparing your manuscript.

Submission instructions:

Please submit manuscripts using the Elsevier Editorial System which will be located on the AACG website at www.crystalgrowth.org after the conference.

Editor: Robert Feigelson, Stanford University
Email: feigel@stanford.edu

Tuesday Schedule

Tuesday – Session J: 8:00AM-10:00AM (Stevenson A)

<u>Topic Area: 7th Symposium on 2D and Low dimensional Materials (incl. BN)</u> 2D Materials Continued Chair: Benjamin Gray and Kevin Daniels
[8:00AM -8:30AM] (Invited) MOCVD Technology for 2D Materials Synthesis Extending to 300 mm Scale **Michael Heuken** (Aixtron SE), Simonas Krotkus, Sergej Pasko, Jan Mischke, Emre Yengel, Eric Lensker, Salim El Kazzi, Christof Mauder, Alex Henning
[8:30AM -8:50AM] Growth and Characterization of α- and ß-phase MnxSey by Chemical Vapor Deposition **Jennifer DeMell** (Laboratory for Physical Sciences), Elias Kallon, Jimmy Kotsakidis, Kevin Daniels
[8:50AM -9:10AM] IN SITU GRAPHENE CVD FOR SIC EPILAYER TRANSFER **Jenifer Hajzus** (US Naval Research Laboratory), Daniel Pennachio, Shawn Mack, Rachael Myers-Ward
[9:10AM -9:30AM] IN SITU GRAPHENE CVD FOR SIC EPILAYER TRANSFER Daniel Pennachio (US Naval Research Laboratory), **Jenifer Hajzus**, Rachael Myers-Ward
[9:30AM -9:50AM] ROOM-TEMPERATURE INFRARED EXTINCTION IN HIGHLY DOPED CdTe:Cr CRYSTALS WITH QUASI-2D DOPANT-RELATED PRECIPITATES **Andrii Popovych** (Ivan Franko Drohobych State Pedagogical University), Volodymyr Popovych, Piotr Potera, Ihor Stolyarchuk

Tuesday – Session K: 8:00AM – 10:00AM (Stevenson B)

Topic Area: Ferroelectric Crystals & Textured Ceramics
Ferroelectric Crystals and Devices
Chair: Vincent Fratello

[8:00AM - 8:30AM]
(Invited) Crystal Growth of PMN-PT Based Single Crystals
Jian Tian (CTS Corporation), Weiguo Zhang, Kyle Grove, and Tom Vencill

[8:30AM - 9:00AM]
(Invited) Continuous Feed Growth of Mn:PIN-PMN-PT Crystals
Weiguo Zhang (CTS Corporation), Kyle Grove, Patrick McGowan, and Jian Tian

[9:00AM - 9:30AM]
(Invited) Development of Functional Materials Based on Eutectic and Other Phase Separation
Akira Yoshikawa (Tohoku University), Kei Kamada, Masao Yoshino, Tetsuo Kudo, Yoshiyuki Usuki, Rikito Murakami, and Yuui Yokota

[9:30AM - 10:00AM]
(Invited) A Self-Powered Acoustic Transmitter for Long-Term Fish Monitoring
Huidong Li (Pacific Northwest National Laboratory), Jun Lu, Hyunjun Jung, Zhaocheng Lu, Bingbin Wu, and Stephanie Larson

Tuesday – Session L: 8:00AM – 10:00AM (Stevenson C)

Topic Area: Characterization Techniques for Bulk and Epitaxial Crystallization
Michael Dudley, Sakiko Kawanishi, Xianrong Huang

[8:00AM - 8:30AM]
(Invited) VISUALIZATION OF CHANGES IN pH AND ION CONCENTRATION DISTRIBUTION DURING CRYSTAL GROWTH/DISSOLUTION PROCESSES
Jun Kawano (Hokkaido University)

[8:30AM - 8:50AM]
Monitoring Nucleation Pathways of Calcium Carbonate and Gibbsite via In Situ NMR
Ying Chen (Pacific Northwest National Laboratory)

[8:50AM - 9:10AM]
Status and New Features of the Topography Beamline 1-BM After the Advanced Photon Source Upgrade
Xianrong Huang (Argonne National Laboratory)

[9:10AM - 9:30AM]
Application of laboratory micro X-ray fluorescence devices for X-ray topography
Christo Guguschev (Leibniz-Institut für Kristallzüchtung, Germany)

[9:30AM - 9:50AM]
CRYSTAL ORIENTATION QUANTIFICATION IN LESS THAN 10 SECONDS
Destiny Lopez (Malvern Panalytical)

[9:50AM - 10:10AM]
OBSERVATION AND ANALYSIS OF THE “GALAXY” DEFECT IN 4H-SIC WAFER THROUGH X-RAY SYNCHROTRON TOPOGRAPHY
Kaixuan Zhang (Stony Brook University)

Tuesday – Session M: 10:30AM – 12:00PM (Stevenson A)

Topic Area: ML/AI in Crystal Growth
Chair: Katie Colbaugh and Chenwei Zhang

[10:30AM -11:00AM]
(Invited) A GENERATIVE MACHINE LEARNING APPROACH TO POWDER X-RAY DIFFRACTION
Eric Riesel, Danna Freedman (Massachusetts Institute of Technology)

[11:00AM -11:20AM]
ML WITH EMBEDDED THEORETICAL AND EXPERIENTIAL KNOWLEDGE FOR INDUSTRIAL SCALE CRYSTAL GROWTH
Katie Colbaugh, Petia Koutev (LEUCITE)

[11:20AM -11:40AM]
VAE-BASED RE-OPTIMIZATION FOR CRYSTAL GROWTH SYSTEMS UNDER STRUCTURAL CHANGES
Takanao Sakamoto (Nagoya University, Japan), Tomoaki Furusho, Kentaro Kutsukake, Shunta Harada, Toru Ujihara

[11:40AM -12:00PM]
DATA-DRIVEN IN SITU STUDIES OF COMPLEX OXIDE FILM GROWTH AND CHARGE TRANSFER
Ryan Comes (University of Delaware)

Tuesday – Session N: 10:30AM – 12:00PM (Stevenson B)

Symposium on Epitaxy of Complex Oxides
Molecular Beam Epitaxy of Oxide Quantum Materials
Chair: Jueli Shi (PNNL)

[10:30AM - 11:00AM]
(Invited) SUPERCONDUCTING Nd1-xEuxNiO2 (NENO) THIN FILMS USING IN-SITU MBE SYNTHESIS
Charles Ahn(Yale University)

[11:00AM - 11:30AM]
(Invited) DATA-DRIVEN IN SITU STUDIES OF COMPLEX OXIDE FILM GROWTH AND CHARGE TRANSFER
Ryan Comes (University of Delaware)

[11:30AM - 12:00PM]
(Invited) THERMAL LASER EPITAXY FOR ULTRACLEAN HETEROSTRUCTURES
Brendan Faeth (Epiray Inc)

Tuesday – Session O: 10:30AM – 12:00PM (Stevenson C)

Topic Area: Characterization Techniques for Bulk and Epitaxial Crystallization
Chair: Michael Dudley, Sakiko Kawanishi, Xianrong Huang

[10:30AM - 11:00AM]
(Invited) CRYSTALLIZATION AND PROPERTIES OF hBN GROWN AT HIGH NITROGEN PRESSURE
Izabella Grzegory (Institute of High Pressure Physics of the Polish Acadmy of Sciences, Poland)

[11:00AM - 11:20AM]
FERROELECTRIC TRANSITION IN Sn2P2SXSe(6-X) ALLOYS
Timothy Gustafson (Core4ce LLC)

[11:20AM - 11:40AM]
IMPACT OF DISLOCATION MOTION ON INTERDIFFUSION, STRUCTURING, AND THERMAL TRANSPORT AT GE-SI HETEROINTERFACE
Brandon Carson (University of California, Los Angeles)

[11:40AM - 12:00AM]
OPTICAL PROPERTIES OF BR-DOPED N-TYPE SNS SINGLE CRYSTALS: CHARACTERIZATION VIA PR AND PL MEASUREMENTS
Sakiko Kawanishi (Kyoto University)

Tuesday – Session P: 1:30PM – 3:00 PM (Stevenson A)

Topic Area: Modeling of Crystal Growth Processes
Chair: Rhys Bunting & Jeffrey Derby

[1:30PM -2:00PM]
(Invited) PREDICTING THE SHAPE-SELECTIVE SYNTHESIS OF METAL NANOCRYSTALS: A MULTIFACETED APPROACH
Kristen Fichthorn (Pennsylvania State University)

[2:00PM -2:20PM]
THEORETICAL STUDY ON THE ROLE OF INTERFACIAL DIPOLAR INTERACTIONS IN DIRECTING GROWTH PATHWAYS AND DIMENSIONALITY OF THE CRYSTAL
Duo Song (Pacific Northwest National Laboratory), Lily Liu, Andrew Ritchhart, Maria Sushko

[2:20PM -2:40PM]
BEYOND CLASSICAL NUCLEATION THEORY: MOLECULAR INSIGHTS INTO NON-CLASSICAL PATHWAYS OF SPARINGLY SOLUBLE SALTS
Nikhil Rampal (Lawrence Livermore National Laboratory), Ke Yuan, Hsiu-Wen Wang, Andrew G. Stack

[2:40PM -3:00PM]
COMPUTATIONAL ANALYSIS OF THE EFFECT OF INTERACTION HETEROGENEITY ON COLLOIDAL FLUID-CRYSTAL COEXISTENCE
Talid Sinno (University of Pennsylvania), Po-Ting Wu, John C. Crocker

Tuesday – Session Q: 1:30PM – 3:00PM (Stevenson B)

Symposium on Epitaxy of Complex Oxides
Freestanding Oxides and Epitaxy
Chair: Ryan Song (ORNL)

[1:30PM - 2:00PM]
(Invited) Oxide semiconductor $BaSnO_3$ as a new platform for perovskite oxide electronics **Kookrin Char** (Seoul National University)

[2:00PM - 2:30PM]
(Invited) The Role of Ultrathin Transition Metal Oxides in Advanced Freestanding Membrane
Katja Isabelle Wurster (Technical University of Denmark)

[2:30PM - 3:00PM]
(Invited) Structure and Stoichiometric Control of Epitaxial Tungsten Oxide Thin Films via Surface-Oxidation-Assisted Molecular Beam Epitaxy and Pulsed Laser Deposition
Jueli Shi (Pacific Northwest National Laboratory)

Tuesday – Session R: 1:30PM – 3:00PM (Stevenson C)

Topic Area: Ultrawide Bandgap: SiC Wide Bandgap Semiconductors - II
Chair: Sriram Krishnamoorthy and Michael Dudley

[1:30PM - 2:00PM]
(Invited) SiC PVT CRYSTAL GROWTH AND MANUFACTURING: TECHNOLOGY & MARKET CHALLENGES
Pete Schunemann (onsemi)

[2:00PM - 2:20PM]
Characterization of Spoke Pattern of Stacking Faults in 4H-SiC Wafers Grown by Physical Vapor Transport Method
Zeyu Chen (Stony Brook University)

[2:20PM - 2:40PM]
Synchrotron X-ray topography analysis of low angle grain boundaries Induced by Growth Step Flow in PVT-Grown 4H-SiC Crystals
Jianpei Zhang (Stony Brook University)

[2:40PM - 3:10PM]
(Invited) ADVANCES IN MOCVD GROWTH OF HIGH-SCANDIUM CONTENT ALSCN FOR FERROELECTRIC AND ELECTRONIC APPLICATIONS
Andrei Osinsky (Agnitron Technology)

Tuesday – Session S: 3:30PM – 5:30PM (Stevenson A)

Topic Area: Modeling of Crystal Growth Processes
Chair: Nikhil Rampal & Talid Sinno

[3:30PM -3:50PM]
CONTRAILS FROM FIRST PRINCIPLES
Rhys Bunting (Lawrence Livermore National Laboratory)

[3:50PM -4:10PM]
PRESSURE-INDUCED NUCLEATION IN AMORPHIZING CARBON MONOXIDE-OXYGEN MIXTURES
Reetam Paul (Lawrence Livermore National Laboratory), Nikhil Rampal, Rhys Bunting, Margaret Berrens, Maximilian Boehme, Jonathan Crowhurst

[4:10PM -4:30PM]
CONTROLLING THE SHAPE OF SEMICONDUCTOR NANORODS USING HYDROTHERMAL GROWTH IN A CONTINUOUS FLOW REACTOR
Ondřej Černohorský (Czech Academy of Sciences), Nikola Bašinová, Šárka Kučerová, Jan Grym, Roman Yatskiv, Matěj Beřešík

[4:30PM -4:50PM]
STABILITY-BASED OPTIMIZATION OF ACRT FOR THE GROWTH OF CZT BY THM
Jeffrey Derby (University of Minnesota), Jeff Peterson, Zachary Cosenza

[5:10PM -5:30PM]
A MONTE CARLO STUDY OF THE EFFECT OF BUBBLES ON VOID SWELLING IN MATERIALS AGING
Luis Zepeda-Ruiz (Lawrence Livermore National Laboratory)

[5:30PM -5:50PM]
MODELING THE GROWTH OF M-PLANE {1-100} GAN USING KINETIC MONTE CARLO SIMULATIONS: ROLE OF NITROGEN DESORPTION
Madhav Ranganathan (Indian Institute of Technology)

Tuesday – Session T: 3:30PM – 5:30PM (Stevenson B)

Symposium on Epitaxy of Complex Oxides
Thermal and Pulsed Laser Epitaxy of Oxide Quantum Materials
Chair: Dan Ferenc Segedin (Harvard)

[3:30PM - 4:00PM]
(Invited) VALENCE FLEXIBILITY AND STRUCTURE–PROPERTY RELATIONSHIPS IN CHROMIUM-CONTAINING COMPLEX OXIDES
Yingge Du (Pacific Northwest National Laboratory)

[4:00PM - 4:30PM]
(Invited) EPITAXIAL SYNTHESIS OF CORRELATED TOPOLOGICAL OXIDE
Ryan (Jeongkeun) Song (Oak Ridge National Laboratory)

[4:30PM - 5:00PM]
(Invited) VALENCE FLEXIBILITY AND STRUCTURE–PROPERTY RELATIONSHIPS IN CHROMIUM-CONTAINING COMPLEX OXIDES **Yingge Du** (Pacific Northwest National Laboratory)

[4:30PM - 5:00PM]
(Invited) Design of microstructure and defect in BaTiO3 thin films and superlattices for enhanced performance **Aiping Chen** (Los Alamos National Laboratory)

Tuesday – Session U: 3:30PM – 5:30PM (Stevenson C)

Topic Area: Ultrawide Bandgap: SiC Wide Bandgap Semiconductors III
Chair: Balaji Raghothamachar and Michael Dudley

[3:30PM - 4:00PM]
(Invited) MOCVD GROWTH AND IN SITU PROCESSING OF GALLIUM OXIDE THIN FILMS AND HETEROSTRUCTURES
Hari Nair (Cornell University)

[4:00PM - 4:20PM]
Characterization of High Energy Implanted 4H-SiC Epiwafers for Superjunction Devices via X-ray Methods
Zeyu Chen (Stony Brook University)

[4:20PM - 4:50PM]
(Invited) Ultrawide bandgap AlN/AlGaN epitaxy
Shubhra Pasayat (University of Wisconsin-Madison)

[4:50PM - 5:10PM]
Low-Background Carrier Density Intentionally and Unintentionally Doped (010) β-Ga2O3 Drift Layers and Schottky Diodes
Sriram Krishnamoorthy (UC Santa Barbara)

[5:10PM - 5:30PM]
GROWTH OF BULK HEXAGONAL BORON NITRIDE FROM A LITHIUM FLUX
Nathan Stoddard (Lehigh University)

Tuesday – Session EA: 7:00PM – 9:30PM (Stevenson A)

Topic Area: Aixtron Sponsored OMVPE Session
III/V Materials and Devices
Chairs: Luke Mawst and Kerstin Volz

[7:00PM -7:30PM]
(Invited) Selective Area Heteroepitaxy of III-V Quantum Dot Lasers on Silicon Photonics
Bei Shi (University of California-Santa Barbara), Alec Skipper, Rosalyn Koscica, Leake Gerald, Joshua Herman, James Turvey, David Harame, John Bowers, and Jonathan Klamkin

[7:30PM -7:50PM]
Microstructural Study on Initial Selective-Area MOVPE Growth of InP Films in Lateral Aspect Ratio Trapping
Hiroya Homma (NTT Device Technology Laboratories),+co-authors

[7:50PM -8:20PM]
(Invited) Driving up the quality of MOCVD (OMVPE) – grown strained balanced Quantum Cascade Lasers (QCLs) epi-structures at large scale production
Wlodek Strupinski(Vigo Photonics and Warsaw University of Technology), Maciej Bugajski, Andrzej Kolek, Grzegorz Hałda, Kamil Pierściński, Iwona Pasternak

[8:20PM -8:40PM]
Microstructure Analysis of Quantum Cascade Lasers Grown by OMVPE on Lattice-mismatched Substrates
Luke Mawst (University of Wisconsin-Madison), +co-authors

[8:40PM -9:10PM]
(Invited) DEVELOPMENT OF GAAS(Y)P(1-Y)/SI VIRTUAL SUBSTRATES FOR GA(X)IN(1-X)P-BASED OPTOELECTRONICS
Lauren Kaliszewski (Ohio State University), +co-authors

[9:10PM -9:30PM]
Electrical and Optical Characteristics of Ru-doped InP grown by MOCVD for Buried Heterostructure Quantum Cascade Lasers
Honghyuk Kim (Hanyang University), +co-authors

Tuesday – Session EC: 7:00PM – 9:00PM (Stevenson C)

Topic Area: High-speed Electronics, Optoelectronics and Photovoltaic
Chair: Theresa Saenz

[7:00PM - 7:30PM]
(Invited) III-V/Si Heteroepitaxy: Understanding and Mastering Growth Fundamentals
Charles Cornet (Institut FOTON, National Institute for Applied Sciences (INSA), Rennes)

[7:30PM - 8:00PM]
(Invited) DRIVING GROWTH IN THE GERMANIUM MARKET: UMICORE'S STRATEGIC INNOVATIONS
Kristof Dessein (Umicore EOM)

[8:00PM - 8:30PM]
(Invited) Accelerated throughput performance of hydride vapor phase epitaxy for GaAs-based solar cells
Ryuji Oshima (National Institute of Advanced Industrial Science and Technology)

[8:30PM - 8:50PM]
SYNTHESIS OF SMB6 THIN FILMS ON SILICON BY CHEMICAL VAPOR DEPOSITION
Brendan Jordan (University of Maryland)

[8:50PM - 9:10PM]
V-groove Nanopatterning for Orientation-Patterned GaP

Wednesday Schedule

Wednesday – Plenary Session II: 8:00-10:00AM

Plenary Session II Chair: Kevin Daniels
[8:00AM -9:00AM] **Epitaxy of 2D van der Waals crystals - from fundamentals to applications** **Joan Redwing** Pennsylvania State University
[9:00AM -10:00AM] **III-V Integration in Silicon Photonics: Challenges and Opportunities** **Bernardette Kunert** imec, Belgium

Wednesday Session V: 10:30-12:00PM (Stevenson A)

Topic Area: Fundamentals of Crystal Growth Chair: Moneesh Upmanyu
[10:30AM - 11:00AM] (Invited) In situ observations of biogenic mineralization with microfluidics **Jong Seto** (Arizona State University)
[11:00AM - 11:30AM] (Invited) On the synthesizability of high entropy rocksalt oxide phases **Cristian Ciobanu** (National Science Foundation/Colorado School of Mines), Ryan Richards (CSM)
[11:30AM - 11:50AM] (Invited) Nonclasscial mechanisms to inhibit beta-hematin crystallization inform strategies to suppress blood-stage malaria parasites **Peter Vekilov** (Sandia National Laboratory)

Wednesday – Session W: 10:30AM – 12:00PM (Stevenson B)

Topic Area: Bulk Crystal Growth 1
Modelling and Control Systems
Chair: Kevin Zawilski, Peter Schunemann, John Frank

[10:30AM - 11:00AM]
(Invited) AUTOMATING CONTROL OF THE MOLTEN ZONE: DYNAMICS AND MATERIALS CONSIDERATIONS
Benjamin Gray (Air Force Research Laboratory)

[11:00AM - 11:20AM]
THE ENGULFMENT OF BUBBLES DURING BULK CRYSTAL GROWTH
Jeffrey Derby (University of Minnesota)

[11:20AM - 11:40AM]
Next generation of experience-based Feedforward control of Czochralski growth process using data processing
Jan Kovar (Crytur)

[11:40AM - 12:00PM]
3D MODELING OF CZ SI GROWTH IN AN ASYMMETRIC FURNACE WITH APPLIED HORIZONTAL MAGNETIC FIELD
Alex Galyukov (STR US, Inc.)

Wednesday – Session X: 10:30AM – 12:00PM (Stevenson C)

Topic Area: Characterization Techniques for Bulk and Epitaxial Crystallization
Chair: Michael Dudley, Sakiko Kawanishi, Xianrong Huang

[10:30AM - 11:00AM]
(Invited) Title: Computational design of the SiC crystal growth process in PVT furnaces
Lorenz Romaner (Christian Doppler Laboratory of Advanced Computational Design of Crystal Growth (Austria))

[11:00AM - 11:30AM]
(Invited) ATOMIC-SCALE CRYSTAL DEFECTS FOR QUANTUM INFORMATION SCIENCE AND CHARACTERIZATION OF MATERIALS
Gregory Fuchs (Cornell University)

[11:30AM - 11:50AM]
INTRINSIC POINT DEFECTS IN Cs4PbCl6: AN EPR STUDY
Timothy Gustafson (Core4ce LLC)

[11:50AM - 12:10PM]
Probing vacancy type defects with positron annihilation spectroscopy in thin films and single crystals
Marc Weber (Washington State University)

Thursday Schedule

Thursday – Plenary Session III: 8:00AM-10:00AM

Plenary Session III Chair: Robert Feigelson
[8:00AM -9:00AM] **AACG Distinguished Scientist Award Talk** Awardee will be announced at the banquet.
[9:00AM -10:00AM] **AACG Young Scientist Award Talk** Awardee will be announced at the banquet.

Chair: Moneesh Upmanyu

[10:30AM -11:00AM] (Invited) QUANTIFYING THE MICROSCOPIC DEGREES OF FREEDOM OF GRAIN BOUNDARIES **Ian Winter** (Sandia National Laboratory)
[11:00AM -11:30AM] (Invited) On the origin and stability of residual compressive strains in sub-5 nm etched silicon nanowires **Moneesh Upmanyu** (Northeastern University)
[11:30AM -11:50AM] CHARACTERIZATION OF SURFACE FEATURES AT A THREE-PHASE BOUNDARY FROM GROWTH OF HEAVILY DOPED DISLOCATION-FREE SINGLE CRYSTAL SILICON **Joel Kearns** (NASA Headquarters)

Thursday – Session Z: 10:30AM – 12:00PM (Stevenson B)

Topic: Bulk Crystal Growth 2
Oxides
Chairs: Kevin Zawilski, Peter Schunemann, John Frank

[10:30AM - 11:00AM]
(Invited) GROWTH OF SINGLE CRYSTAL FIBERS OF LUTETIUM OXIDES BY LASER HEATED PEDESTAL GROWTH
Joseph Kolis (Clemson University)

[11:00AM - 11:20AM]
CRYSTAL GROWTH AND PROPERTIES OF KGd(WO4)2
Joshua Tower (Radiation Monitoring Devices, Inc)

[11:20AM - 11:40AM]
Segregation Trends in Compositionally Complex Rare Earth Aluminum Garnets Grown by the Czochralski Method
Rebecca Lalk (University of Tennessee Knoxville)

[11:40AM - 12:00AM]
The Czochralski growth and scintillation properties of Ce and Mg co-doped Y3(Ga,Al)5O12 single crystals
Hisato Suezumi (Tohoku University)

[12:00PM - 12:20PM]
V:YAG and Cr:YAG saturable absorbers for solid state lasers
Jan Polak (Crytur)

Thursday – Session AA: 10:30AM – 12:00PM (Stevenson C)

Topic Area: Ultrawide Bandgap: Gallium Oxide and Related Materials - I
Chair: Sriram Krishnamoorthy and Michael Dudley

[10:30AM - 11:00AM]
(Invited) Development of β-Ga2O3 for high power electronic devices
Hongping Zhao (Ohio State University)

[11:00AM - 11:20AM]
β-Ga2O3 DOPING AND DEFECTS
John McCloy (Washington State University)

[11:20AM - 11:40AM]
CONTROLLED DOPING AND TRANSPORT PROPERTIES OF (ULTRA)WIDE-BAND-GAP SB-DOPED RUTILE-GEXSN1−XO2
Dipannita Ghosh (Oregon State University)

[11:40AM - 12:00PM]
VALENCE BAND ENGINEERING OF Ga_2O_3 FOR P-TYPE CONDUCTIVITY
Chioma Ezeh (City University of Hong Kong)

Thursday – Session BB: 1:30PM – 3:00PM (Stevenson A)

Topic Area: Fundamentals of Crystal Growth
Chair: Moneesh Upmanyu

[1:30PM -2:00PM]
(Invited) COMPOSITIONAL EFFECTS ON THE ENGULFMENT OF PARTICLES DURING CRYSTAL GROWTH
Jeff Derby (Northeastern University)

[2:00PM -2:20PM]
GROWTH TWINS IN GALLIUM DOPED, DISLOCATED SINGLE CRYSTAL SILICON FROM NEOGROWTH CRYSTALLIZATION METHOD
Joel Kearns (NASA Headquarters)

[2:20PM -2:40PM]
THE IMPACT OF HYDRODYNAMIC INTERACTIONS ON COLLOIDAL CRYSTAL NUCLEATION
Talid Sinno (University of Pennsylvania)

[2:40PM -3:00PM]
Dynamic surface potential induced by competitive ion adsorption switches particle-attaching facets
Yuna Bae (Pacific Northwest National Laboratory)

Thursday – Session CC: 1:30PM – 3:00PM (Stevenson B)

Topic Area: Bulk Crystal Growth 3
SiC and Oxides
Chair: Kevin Zawilski, Peter Schunemann, John Frank

[1:30PM - 2:00PM]
(Invited) 2D and 3D IN-SITU X-RAY VISUALIZATION OF THE PHYSICAL VAPOR TRANSPORT GROWTH PROCESS OF SILICON CARBIDE
Peter Wellmann (University of Erlangen-Nurnberg)

[2:00PM - 2:20PM]

[2:20PM - 2:40PM]
SOLVENT INCLUSION AND MACROSTEP BEHAVIOR REVEALED BY IMPURITY DISTRIBUTION IN SOLUTION GROWTH OF P-TYPE 4H-SIC
Takahiro Ito (Nagoya University)

[2:40PM - 3:00PM]
USE OF OXIDE DISPERSION STABILIZED PLATINUM CRUCIBLES FOR HIGH TEMPERATURE CRYSTAL GROWTH APPLICATIONS
Matthias Wegner (Heraeus Precious Metals)

[3:00PM - 3:20PM]
Single Crystal Growth of Functional Oxide Crystals from the Melt without using Precious Metal Crucible
Akira Yoshikawa (Tohoku University)

Thursday – Session DD: 1:30PM – 3:00PM (Stevenson C)

Topic Area: Ultrawide Bandgap: Gallium Oxide and Related Materials - II
Chair: Sriram Krishnamoorthy and Balaji Raghothamachar

[1:30PM - 2:00PM]
(Invited) Title BULK GROWTH OF OFFCUT (100) β-Ga2O3 BY EFG: ESTABLISHING A DOMESTIC SOURCE OF GALLIUM OXIDE SUBSTRATES
Drew Haven (Luxium Solutions Corp)

[2:00PM - 2:20PM]
SPECTROSCOPIC SIGNATURES OF MICRO-SEGREGATION IN MELT-GROWN GALLIUM OXIDE
Benjamin Dutton (Washington State University)

[2:20PM - 2:40PM]
β-Ga_2O_3 CRYSTAL GROWTH WITH COLD CONTAINER CRUCIBLES: THE OXIDE CRYSTAL GROWTH FROM COLD CRUCIBLE (OCCC) METHOD IN LARGE SCALE
Masanori Kitahara (Fox Corporation)

[2:40PM - 3:00PM]
EVALUATION OF CRYSTAL PROPERTIES OF β-Ga2O3 CRYSTALS GROWN UNDER AIR ATMOSPHERE USING OXIDE CRYSTAL GROWTH FROM A COLD CRUCIBLE METHOD
Taketoshi Tomida (C&A Corporation)

Thursday- Session EE: 3:30PM – 5:30PM (Stevenson A)

Topic Area: Detectors
Chairs: Edgar van Loef & Chuck Melcher

[3:30PM - 3:50PM]
PURIFICATION AND GROWTH OF TL-BASED CRYSTALS
Yaroslav Ogorodn (Radiation Monitoring Devices, Inc.)

[3:50PM - 4:10PM]
OPTIMIZATION OF TIMING PARAMETERS OF CE-DOPED GARNETS BY COMPLEX CODOPING
Oleg Sidletsk (Institute for Scintillation Materials NAS of Ukraine & Centre of Excellence)

[4:10PM - 4:30PM]
DEVELOPMENT OF DUAL-MODE HALIDE SCINTILLATOR: 6LiSr2I5 and 6Li-doped Cs3Cu2I5.
Luis Stand (University of Tennessee)

[4:30PM - 4:50PM]
LITHIUM MOLYBDATE PURIFICATION AND CRYSTAL GROWTH FOR SCINTILLATING BOLOMETERS
Joshua Tower (Radiation Monitoring Devices, Inc.)

[4:50PM - 5:10PM]
Crystal growth and Scale-up of TlCaBr3 for High-Energy X-Ray Radiography Applications
Edgar van Loef (Radiation Monitoring Devices, Inc.)

[5:10PM - 5:30PM]
GROWTH OF TERNARY SULFIDES BY MIRCO-PULLING-DOWN METHOD
Vojtěch Vaněček (FZU - Institute of Physics of the Czech Academy of Sciences)

Thursday – Session FF: 3:30PM – 5:30PM (Stevenson B)

Topic Area: Bulk Crystal Growth 4
Nonlinear Materials
Chair: Kevin Zawilski, Peter Schunemann, John Frank

[3:30PM - 4:00PM]
(Invited) ACENTRIC BARIUM CHALCOGENIDES FOR MID-IR FREQUENCY CONVERSION
Valentin Petrov (Max Born Institute)

[4:00PM - 4:20PM]
State of Barium Chalcogenide Crystal Growth for NWIR to MWIR – LWIR Conversion
Jani Jesenovec (BAE Systems)

[4:20PM - 4:40PM]
ADVANCES IN CSP GROWTH AND CHARACTERIZATION RELATED TO GENERATION OF MID-IR LIGHT
Kevin Zawilski (BAE Systems)

[4:40PM - 5:00PM]
BRIDGMAN GROWTH OF SEMICONDUCTOR CRYSTALS FOR APPLICATION IN NON-LINEAR OPTICS
Pijush Bhattacharya (Azimuth)

[5:00PM - 5:30PM]
(Invited) HISTORY OF LARGE KDP AND KD*P TO SUPPORT FUSION LASERS
Matthew Whittaker (G&H)

Thursday – Session GG 3:30PM – 5:30PM (Stevenson C)

Topic Area: Ultrawide Bandgap: III-Nitrides and Related Materials
Chair: Balaji Raghothamachar and Sriram Krishnamoorthy

[3:30PM - 4:00PM]
(Invited) CHARACTERIZATION OF 100 MM AlN SINGLE CRYSTAL SUBSTRATES PREPARED USING PHYSICAL VAPOR TRANSPORT METHOD
Shogen Matsumoto (Crystal IS Inc.)

[4:00PM - 4:20PM]
AMMONOTHERMAL GROWTH OF RHOMBOHEDRAL BORON NITRIDE
Siddha Pimputkar (Lehigh University)

[4:20PM - 4:40PM]
ALN LAYER HETEROEPITAXY: NANO TO MICRO GROWTH USING X-RAY SCATTERING
Mark Goorsky (University of California Los Angeles)

[4:40PM - 5:00PM]
THE ROLE OF GAS PHASE NUCLEATION IN DIAMOND GROWTH PROCESS IN MPCVD CHAMBER
Daria Zimina (STR US, Inc.)

Thursday – Session ExE: 7:00PM – 9:00PM (Stevenson A)

Topic Area: Bulk Crystal Growth 5
Detector Materials
Chair: Kevin Zawilski, Peter Schunemann, John Frank

[7:00PM - 7:30PM]
(Invited) OPTIMIZATION AND SCALE-UP SYNTHESIS, PURIFICATION, AND CRYSTAL GROWTH OF CsPbBr3
Duck Young Chung (Argonne National Laboratory)

[7:30PM - 7:50PM]
ADVANCED CRYSTAL GROWTH TECHNIQUES FOR II-VI SEMICONDUCTORS
Magesh Murugesan (Washington State University)

[7:50PM - 8:10PM]
ELECTRO-OPTICAL PROPERTIES OF CD-SE-TE CRYSTALS WITH 30% SE AND GROUP V DOPANTS
Jing Shang (Washington State University)

[8:10PM - 8:30PM]
GROWTH AND SCINTILLATION PROPERTIES OF CE DOPED $LiCaAlF_6$/LiF EUTECTICS FOR THERMAL NEUTRON DETECTION APPLICATIONS
Tomoaki Matsuyama (Tohoku University)

[8:30PM - 8:50PM]
Searching for ideal topological crystalline insulators and topological superconductors in Pb-Sn-In-Te system
Genda Gu (Brookhaven National Laboratory)

Thursday – Session ED: 7:00PM – 9:00PM (Stevenson B)

Topic Area: Detectors
Chair: Edgar van Loef & Chuck Melcher

[7:00PM - 7:20PM]
Development of optical guiding scintillators using Tl doped Cs3Cu2I5 for high resolution and sensitivity X-ray imaging
Kei Kamada (Tohoku Univ.)

[7:20PM - 7:40PM]
OPTIMIZING ACRT TO REDUCE INCLUSIONS DURING VGF GROWTH OF CZT
Jeffrey Derby (University of Minnesota)

[7:40PM - 8:00PM]
Crystal Growth and Characterization of Thallium-based Perovskite Semiconductors
Edgar van Loef (Radiation Monitoring Devices, Inc.)

[8:00PM - 8:20PM]
BALANCING LIGHT YIELD AND ULTRAFAST DECAY IN $CsCu_2I_3$ SCINTILLATOR CRYSTALS GROWN BY SOLUTION METHODS
Jan Albert Zienkiewicz (FZU - Institute of Physics of the Czech Academy of Sciences)

[8:20PM - 8:40PM]
HALIDE SINGLE CRYSTAL SCINTILLATORS FOR X-RAY RADIOGRAPHY
Mariya Zhuravleva (Scintillation Materials Research Center)

Thursday – Session EF: 7:00PM – 9:00PM (Stevenson C)

Topic Area: Characterization Techniques for Bulk and Epitaxial Crystallization
Chair: Michael Dudley, Sakiko Kawanishi, Xianrong Huang

[7:00PM - 7:30PM]
(Invited) ANALYSYS OF EFFECTS OF STACKING FAULTS AND FORMATION MECHANISM OF BASAL PLANE DISLOCATIONS IN 4H-SiC
Hidekazu Tsuchida (CRIEPI)

[7:30PM - 8:00PM]
(Invited) RAMAN SCATTERING MICROSCOPY CHARACTERIZATION OF EXTENDED DEFECTS IN SiC CRYSTALS
Noboru Ohtani (Kwansei Gakuin University, Japan)

[8:00PM - 8:20PM]
STACKING FAULT ANALYSIS FOR THE EARLY-STAGES OF PVT GROWTH OF 4H-SIC CRYSTALS
Shanshan Hu (Stony Brook University)

[8:20PM - 8:40PM]
Growth and Characterization of Thick Epitaxial 4H-SiC Wafers for High-Voltage Devices
Yuzhuo Li (Stony Brook University)

Friday Schedule

Friday – Session II: 8:00AM – 10:00AM (Stevenson B)

Topic Area: Bulk Crystal Growth 6
HVPE, ZnSe, micro pulling down
Chair: Kevin Zawilski, Peter Schunemann, John Frank

[8:00AM - 8:30AM]
(Invited) HETEROEPITAXY OF NONLINEAR TERNARY MATERIALS FOR FREQUENCY CONVERSION IN THE MLWIR REGION
Vladimir Tassev (Air Force Research Laboratory)

[8:30AM - 8:50AM]
SCALABLE AND FAST EPITAXY OF HIGH QUALITY, SINGLE CRYSTAL ZNSE SUBSTRATES
Jesse Johnson (Mainstream Engineering Corporation)

[8:50AM - 9:10AM]
STUDY ON THE GROWTH OF NITI USING THE MICRO PULLING DOWN METHOD AND THE DEVELOPMENT OF A FLOATING ZONE FURNACE
Timon Sieweke (University of Duisburg-Essen)

[9:10AM - 9:30AM]
Evaluation of Alloy Melt–Crucible Reactions in Ru-Mo-W Single Crystal Wire Growth by the Dewetting Micro-Pulling-Down Method
Rikito Murakami (Tohoku University)

[9:30AM - 9:50AM]
Compositional Changes in Ru-Mo-W Single-Crystal Wires Grown by the Dewetting Micro-Pulling-Down Method
Rikito Murakami (Tohoku University)

Friday – Session JJ: 8:00AM –10:00AM (Stevenson C)

Topic Area: Reduced Gravity
Reduced Gravity Crystal Growth
Chair: Ching-Hua Su

[8:00AM - 8:30AM]
(Invited) MICROGRAVITY AS A TOOL FOR BETTER CRYSTALS
Anne Wilson (Butler University)

[8:30AM – 8:50AM]
Orbital Foundries for Next-Generation Semiconductors
Divya Panchanathan (Axiom Space)

[8:50AM - 9:10AM]
CRYSTALLIZATION IN A MICROGRAVITY ENVIRONMENT
Anne Wilson (Butler University)

ACCGE-24/OMVPE-22

Schedule (Chronological)

Symposium	Day	Time	Room
Welcome Reception	Sunday	6:00 pm — 8:00 pm	Riverview Pavilion
Plenary – 1	Monday	8:00 am — 10:00 am	Stevenson A & B
2D - 1	Monday	10:30 am — 12:00 pm	Stevenson A
Epitaxy Oxide - 1	Monday	10:30 am — 12:00 pm	Stevenson B
Adv. Growth - 1	Monday	10:30 am — 12:00 pm	Stevenson C
Biological - 1	Monday	1:30 pm — 3:00 pm	Stevenson A
Ferroelectric - 1	Monday	1:30 pm — 3:00 pm	Stevenson B
Adv. Growth - 2	Monday	1:30 pm — 3:00 pm	Stevenson C
OMVPE - 1	Monday	3:30 pm — 5:00 pm	Stevenson A
Ferroelectric - 2	Monday	3:30 pm — 5:00 pm	Stevenson B
Ultrawide - 1	Monday	3:30 pm — 5:00 pm	Stevenson C
Exhibits Reception	Monday	5:00 pm — 6:30 pm	Cascade Locks Ballroom
Grad Award Presentations	Monday	7:00 pm — 8:00 pm	Stevenson A
2D - 2	Tuesday	8:00 am — 10:00 am	Stevenson A
Ferroelectric - 3	Tuesday	8:00 am — 10:00 am	Stevenson B
Characterization - 1	Tuesday	8:00 am — 10:00 am	Stevenson C
ML/AI - 1	Tuesday	10:30 am — 12:00 pm	Stevenson A
Epitaxy Oxide - 2	Tuesday	10:30 am — 12:00 pm	Stevenson B
Characterization - 2	Tuesday	10:30 am — 12:00 pm	Stevenson C
Exec. Comt. Mtg.	Tuesday	12:00 pm — 1:30 pm	Stevenson D
Modeling - 1	Tuesday	1:30 pm — 3:00 pm	Stevenson A
Epitaxy Oxide - 3	Tuesday	1:30 pm — 3:00 pm	Stevenson B
Ultrawide - 2	Tuesday	1:30 pm — 3:00 pm	Stevenson C
Modeling - 2	Tuesday	3:30 pm — 5:30 pm	Stevenson A
Epitaxy Oxide - 4	Tuesday	3:30 pm — 5:30 pm	Stevenson B
Ultrawide - 3	Tuesday	3:30 pm — 5:30 pm	Stevenson C
Epitaxy Oxide - 5	Tuesday	7:00 pm — 8:30 pm	Stevenson B
Semi - 1	Tuesday	7:00 pm — 8:30 pm	Stevenson C
OMVPE - 2	Tuesday	7:00 pm — 9:00 pm	Stevenson A
Plenary – 2	Wednesday	8:00 am — 10:00 am	Stevenson A & B
Fundamentals - 1	Wednesday	10:30 am — 12:00 pm	Stevenson A
Bulk - 1	Wednesday	10:30 am — 12:00 pm	Stevenson B
Characterization - 3	Wednesday	10:30 am — 12:00 pm	Stevenson C
Excursions	Wednesday	12:30 pm — 6:00 pm	Outside
Banquet Reception	Wednesday	6:00 pm — 7:00 pm	Center Lobby
Banquet	Wednesday	7:00 pm — 10:00 pm	Cascade Locks Ballroom

Awards – 1	Thursday	8:00 am — 10:00 am	Stevenson A & B
Fundamentals - 2	Thursday	10:30 am — 12:00 pm	Stevenson A
Bulk - 2	Thursday	10:30 am — 12:00 pm	Stevenson B
Ultrawide - 4	Thursday	10:30 am — 12:00 pm	Stevenson C
Fundamentals - 3	Thursday	1:30 pm — 3:00 pm	Stevenson A
Bulk - 3	Thursday	1:30 pm — 3:00 pm	Stevenson B
Ultrawide - 5	Thursday	1:30 pm — 3:00 pm	Stevenson C
Detector - 1	Thursday	3:30 pm — 5:30 pm	Stevenson A
Bulk - 4	Thursday	3:30 pm — 5:30 pm	Stevenson B
Ultrawide - 6	Thursday	3:30 pm — 5:30 pm	Stevenson C
Grad Student Panel	Thursday	5:30 pm — 6:30 pm	Stevenson C
Future of AACG Panel	Thursday	6:15 pm — 7:00 pm	Stevenson A
Detector - 2	Thursday	7:00 pm — 9:00 pm	Stevenson A
Bulk - 5	Thursday	7:00 pm — 9:00 pm	Stevenson B
Characterization - 4	Thursday	7:00 pm — 9:00 pm	Stevenson C
Late News	Friday	8:00 am — 10:00 am	Stevenson A
Bulk - 6	Friday	8:00 am — 10:00 am	Stevenson B
Reduced Gravity - 1	Friday	8:00 am — 10:00 am	Stevenson C

ACCGE-24/OMVPE-22

Schedule (by Symposium)

Symposium	Day	Time	Room
2D - 1	Monday	10:30 am — 12:00 pm	Stevenson A
2D - 2	Tuesday	8:00 am — 10:00 am	Stevenson A
Adv. Growth - 1	Monday	10:30 am — 12:00 pm	Stevenson C
Adv. Growth - 2	Monday	1:30 pm — 3:00 pm	Stevenson C
Awards – 1	Thursday	8:00 am — 10:00 am	Stevenson A & B
Banquet Reception	Wednesday	6:00 pm — 7:00 pm	Center Lobby
Banquet	Wednesday	7:00 pm — 10:00 pm	Cascade Locks Ballroom
Biological - 1	Monday	1:30 pm — 3:00 pm	Stevenson A
Bulk - 1	Wednesday	10:30 am — 12:00 pm	Stevenson B
Bulk - 2	Thursday	10:30 am — 12:00 pm	Stevenson B
Bulk - 3	Thursday	1:30 pm — 3:00 pm	Stevenson B
Bulk - 4	Thursday	3:30 pm — 5:30 pm	Stevenson B
Bulk - 5	Thursday	7:00 pm — 9:00 pm	Stevenson B
Bulk - 6	Friday	8:00 am — 10:00 am	Stevenson B
Characterization - 1	Tuesday	8:00 am — 10:00 am	Stevenson C
Characterization - 2	Tuesday	10:30 am — 12:00 pm	Stevenson C
Characterization - 3	Wednesday	10:30 am — 12:00 pm	Stevenson C
Characterization - 4	Thursday	7:00 pm — 9:00 pm	Stevenson C
Detector - 1	Thursday	3:30 pm — 5:30 pm	Stevenson A
Detector - 2	Thursday	7:00 pm — 9:00 pm	Stevenson A
Epitaxy Oxide - 1	Monday	10:30 am — 12:00 pm	Stevenson B
Epitaxy Oxide - 2	Tuesday	10:30 am — 12:00 pm	Stevenson B
Epitaxy Oxide - 3	Tuesday	1:30 pm — 3:00 pm	Stevenson B
Epitaxy Oxide - 4	Tuesday	3:30 pm — 5:30 pm	Stevenson B
Epitaxy Oxide - 5	Tuesday	7:00 pm — 8:30 pm	Stevenson B
Excursions	Wednesday	12:30 pm — 6:00 pm	Outside
Exec. Comt. Mtg.	Tuesday	12:00 pm — 1:30 pm	Stevenson D
Exhibits Reception	Monday	5:00 pm — 6:30 pm	Cascade Locks Ballroom
Ferroelectric - 1	Monday	1:30 pm — 3:00 pm	Stevenson B
Ferroelectric - 2	Monday	3:30 pm — 5:00 pm	Stevenson B
Ferroelectric - 3	Tuesday	8:00 am — 10:00 am	Stevenson B
Fundamentals - 1	Wednesday	10:30 am — 12:00 pm	Stevenson A
Fundamentals - 2	Thursday	10:30 am — 12:00 pm	Stevenson A
Fundamentals - 3	Thursday	1:30 pm — 3:00 pm	Stevenson A
Future of AACG Panel	Thursday	6:15 pm — 7:00 pm	Stevenson A
Grad Award Presentations	Monday	7:00 pm — 8:00 pm	Stevenson A

Grad Student Panel	Thursday	5:30 pm — 6:30 pm	Stevenson C
Late News	Friday	8:00 am — 10:00 am	Stevenson A
ML/AI - 1	Tuesday	10:30 am — 12:00 pm	Stevenson A
Modeling - 1	Tuesday	1:30 pm — 3:00 pm	Stevenson A
Modeling - 2	Tuesday	3:30 pm — 5:30 pm	Stevenson A
OMVPE - 1	Monday	3:30 pm — 5:00 pm	Stevenson A
OMVPE - 2	Tuesday	7:00 pm — 9:00 pm	Stevenson A
Plenary – 1	Monday	8:00 am — 10:00 am	Stevenson A & B
Plenary – 2	Wednesday	8:00 am — 10:00 am	Stevenson A & B
Reduced Gravity - 1	Friday	8:00 am — 10:00 am	Stevenson C
Semi - 1	Tuesday	7:00 pm — 8:30 pm	Stevenson C
Ultrawide - 1	Monday	3:30 pm — 5:00 pm	Stevenson C
Ultrawide - 2	Tuesday	1:30 pm — 3:00 pm	Stevenson C
Ultrawide - 3	Tuesday	3:30 pm — 5:30 pm	Stevenson C
Ultrawide - 4	Thursday	10:30 am — 12:00 pm	Stevenson C
Ultrawide - 5	Thursday	1:30 pm — 3:00 pm	Stevenson C
Ultrawide - 6	Thursday	3:30 pm — 5:30 pm	Stevenson C
Welcome Reception	Sunday	6:00 pm — 8:00 pm	Riverview Pavilion