ACCGE-21
OMVPE-18
Santa Fe, New Mexico, USA
2017

Program Book

21st American Conference on Crystal Growth and Epitaxy (ACCGE-21)

and

18th US Workshop on Organometallic Vapor Phase Epitaxy (OMVPE-18)

and

3rd Symposium on 2D Electronic Materials

and

Symposium on Epitaxy of Complex Oxides



July 30 – August 4

Table of Contents

Welcome to Santa Fe, New Mexico

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

- The 21st American Conference on Crystal Growth and Epitaxy (ACCGE-21)
- The 18th US Workshop on Organometallic Vapor Phase Epitaxy (OMVPE-18)

The jointly held conferences are composed of crosscutting and cutting-edge science and technology. Participants are encouraged to move about this technical landscape to maximize the interaction with their personal interests. Efforts have been made to set up the conference schedule to flow among topical areas and avoid overlapping of similar interest areas, but some conflicts are unavoidable due to the full program and wide range of interest areas of the attendees.

We trust that the outstanding technical program, the beautiful surroundings of Santa Fe, the hospitality of the Eldorado Hotel and Spa and the Hotel St. Francis, and the conference social program will make this a one-of-a-kind conference experience for all attendees, presenters, vendors, sponsors, and guests. It has been a pleasure for the committee to present this event to you and we wish you an excellent, enjoyable, and productive conference.

Kevin Zawilski
ACCGE-21 Conference Chair

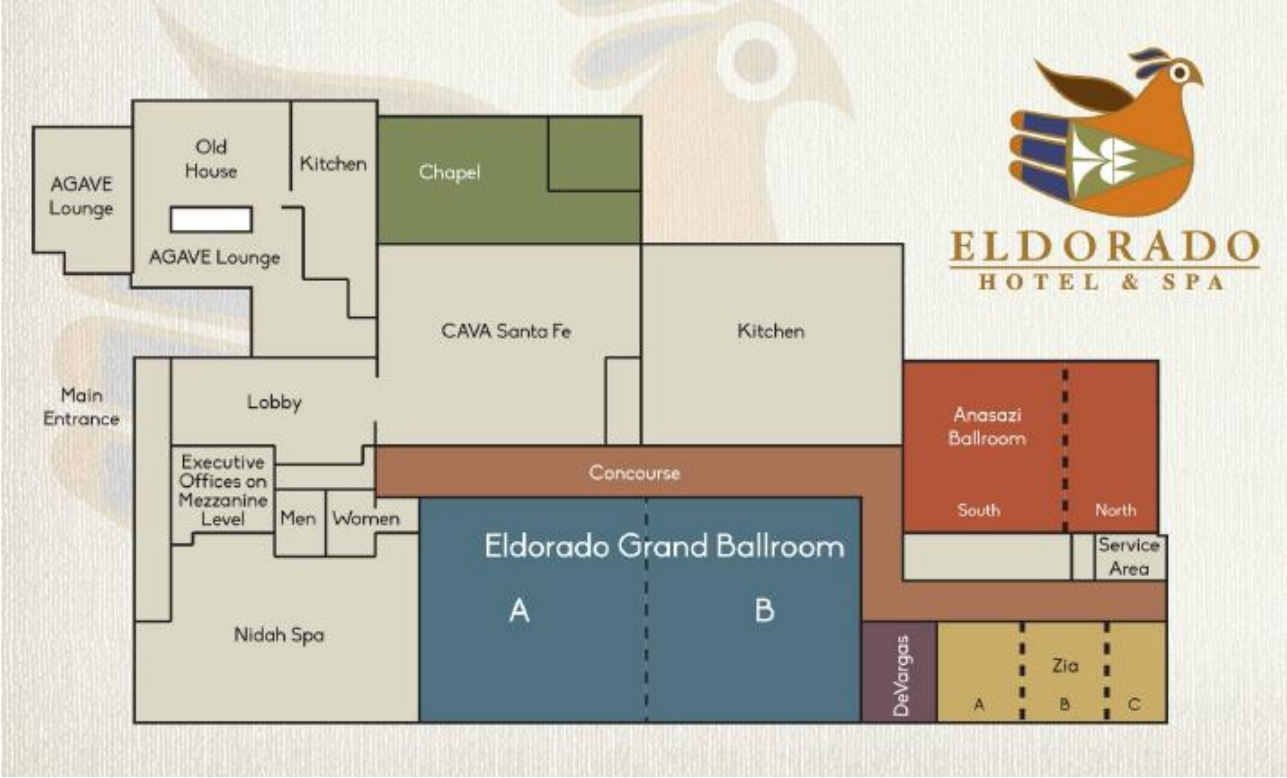
Carlos Rojo
ACCGE-21 Program Chair

Dan Koleske
OMVPE-18 Conference and Program Co-Chair

Oliver Pitts
OMVPE-18 Conference and Program Co-Chair

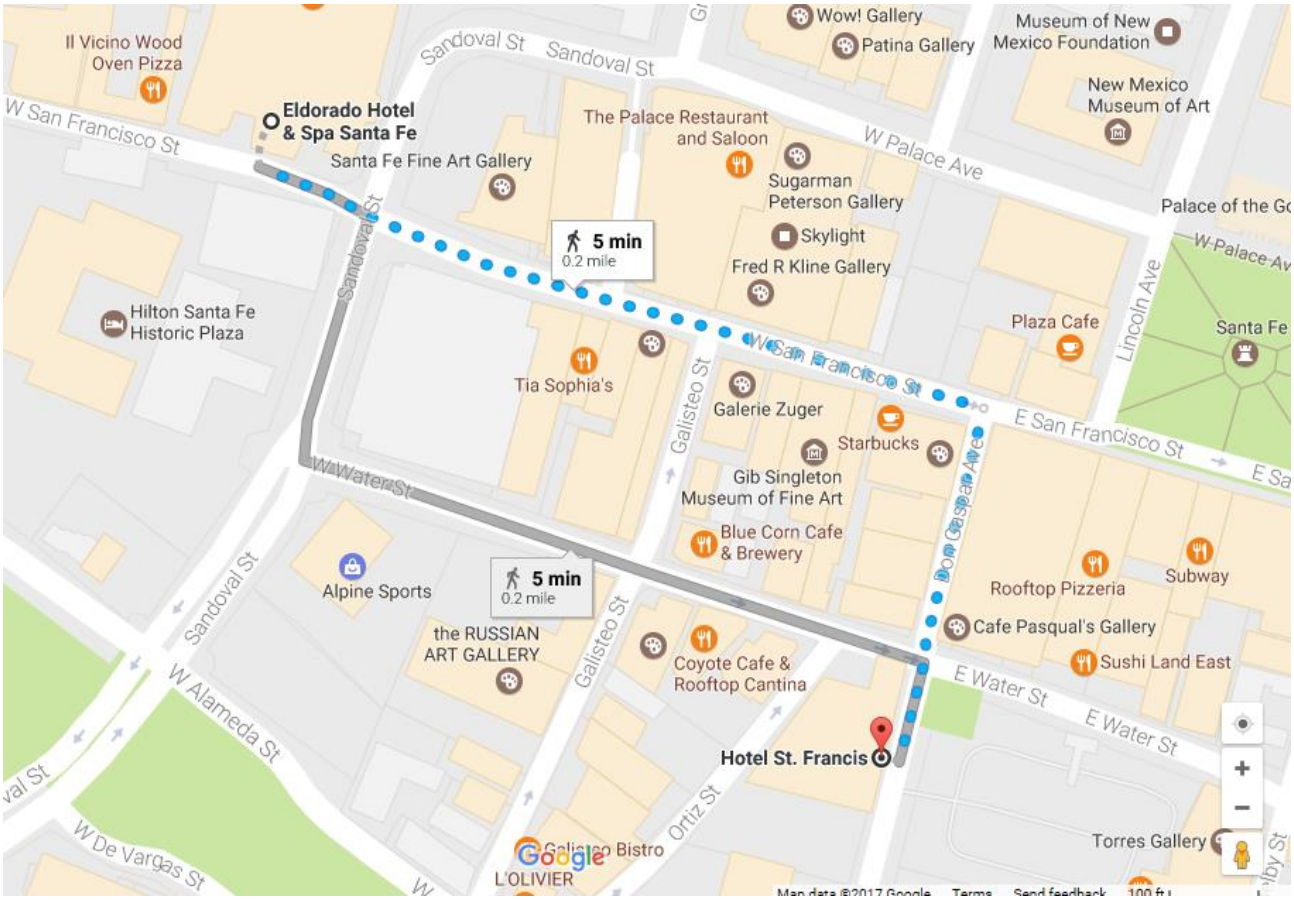
Maps of Conference Center and Surrounding Area

Eldorado Floor Plan



St. Francis Floor Plan

Walking Route Between Hotels & Conference



Conference Sponsors and Supporters

At press time, the following companies and organizations have generously given their support to this meeting:

BAE Systems
Coherent Advanced Crystal Group
Crystal Photonics, Inc.
Elsevier BV – Journal of Crystal Growth
EMD Performance Materials
Heraeus
Matheson Tri-Gas, Inc.
Northrop Grumman - Synoptics
ProChem, Inc.
Sandia National Laboratories
The Olsen Foundation/GHO Ventures
Thermcraft, Incorporated

Conference Exhibitors

Visit the exhibit booth in the Eldorado Ballroom

AccuStrata
ADLT (APL Engineered Materials)
Aixtron
Ambrell Induction Heating
American GMG (AGMG)
Applied Ceramics
Dock/Chemicals
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SMI (Structured Materials)
STR Software
WEP
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ACCGE Program Chair
Carlos Rojo, GE

OMVPE Conference Co-Chairs and Program Co-Chairs
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Oliver Pitts, NRC Canada

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Industrial Exhibit
Harry Niedecken, WirlNet Inc.

Publicity
Merry Koschan, University of Tennessee

ACCGE/ OMVPE Proceedings
Tania Paskova, North Carolina State University
Catherine Caneau, retired
Robert Feigelson, Stanford University

Photography Contest
Balaji Ragothamachar, Stonybrook University

AACG Awards
Tom Kuech, University of Wisconsin
Jeffrey Derby, University of Minnesota

Conference Planner
Dori Nielsen, American Association for Crystal Growth

OMVPE Workshop Program Committee (2017)

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Robert Biefeld, Sandia National Laboratories
Russell Dupuis, Georgia Institute of Technology
John Geisz, National Renewable Energy Laboratory
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Luke Mawst, University of Wisconsin
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Simon Watkins, Simon Fraser University

AACG Organization (2015-2017)

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Mariya Zhuravleva (University of Tennessee)

Section Presidents:

WEST
Edith Bourret-Courchesne
Lawrence Berkeley Laboratory

TENNESSEE
Merry Koschan
University of Tennessee

AACGE Sessions

Fundamentals of Crystal Growth
Peter Vekilov, University of Houston

Bulk Crystal Growth
Robert Feigelson, Stanford University
Alex Ostrogorsky, Illinois Institute of Technology

Industrial Crystal Growth Technologies and Equipment
Matt Whittaker, Gooch & Housego

Detector Materials: Scintillators and Semiconductors
Mariya Zhuravleva, University of Tennessee, Knoxville
Gautam Gundiah, APL Engineered Materials, Inc.

Nonlinear Optical and Laser Host Materials
Kevin Stevens, Northrop Grumman-SYNOPTICS

Modeling of Crystal Growth Processes
Jeffrey Derby, University of Minnesota

Biological and Biomimetic Materials
Yu Huang, UCLA
Derk Joester, Northwestern University
Elia Beniash, University of Pittsburgh

Ferroelectric Crystals and Textured Ceramics (NEW)
Jun Luo, TRS Technologies
Rich Meyer, Penn State University

Joint Sessions AACGE / OMVPE

Bulk Growth and Epitaxy for Power Electronics (NEW)
Mike Dudley, Stony Brook University
Balaji Raghothamachar, Stony Brook University

Nanocrystals, Quantum Dots, and Nanowires
Kris Bertness, NIST
Daniel Feezell, University of New Mexico

III/V Nitride and Other WBG Semiconductors
Dirk Ehrentraut, SORAA
Nelson Tansu, Lehigh

Materials for Photovoltaics and Other Energy Technology
John Geisz, NREL

Thin Film Growth, Epitaxy, and Superlattices
Andrey Krysa, University of Sheffield
Toby Garrod, II-VI epiwork

OMVPE Sessions

OMVPE of Compound Semiconductors for Optoelectronics
Sugiyama Masakazu, University of Tokyo

OMVPE of Wide Bandgap Materials for Opto- and Power-Electronics
Yuji Zhao, Arizona State University

OMVPE of Narrow Bandgap Semiconductors
Simon Watkins, Simon Fraser University

Novel OMVPE Techniques and In-Situ Monitoring
Matt Highland, Argonne National Laboratory

Symposia

3rd Symposium on 2D Electronic Materials
Kurt Gaskill, NRL
Joan Redwing, Penn State

Symposium on Epitaxy of Complex Oxides
Ho Nyung Lee, ORNL
Darrell Schlom, Cornell
Lane Martin, University of California, Berkeley

Plenary Speakers

Gerald B. Stringfellow
"Thermodynamic Considerations for Epitaxial Growth of III/V Compounds"
Presentation - Monday, July 31, 2017, 8:30 AM

Gerald B. Stringfellow is a Distinguished Professor in the Department of Materials Science and Engineering and the Department of Electrical and Computer Engineering at the University of Utah. He is the former Dean of the College of Engineering. Before his university career, he was a group manager at Hewlett Packard Laboratories, Palo Alto, California.

He has received numerous awards, most notably, membership in the National Academy of Engineering. These awards include: Frank Prize of IOCG, Fellow of IEEE, Bardeen Award of TMS, the AACG Crystal Growth Award, the von Humboldt US Senior Scientist Award, and the highest award of the University of Utah, the Rosenblatt Prize. He also served as Principal Editor of the Journal of Crystal Growth, and on the editorial boards of many publications.

The research interests of Professor Stringfellow center on the chemistry, epitaxial crystal growth, properties, and device applications of new semiconductor materials, particularly the III/V compounds and alloys. Stringfellow began working on materials for light emitting diodes (LEDs) in 1966 and was among the pioneers of the organometallic vapor phase epitaxial (OMVPE) growth technique, beginning his work in this area in 1975. His work emphasizes the materials science aspects of OMVPE growth. The OMVPE technique is the basic technique now used in the multi-billion-dollar compound semiconductor device industry for light emitting diodes, injection lasers, detectors, and solar cells.

Mercouri G. Kanatzidis
"New Hard Radiation Detection Semiconductor Materials"
Presentation - Monday, July 31, 2017, 9:15 AM

Mercouri G. Kanatzidis is a Professor of Chemistry and of Materials Science and Engineering at Northwestern University in Evanston, Illinois. He also has a senior scientist appointment at Argonne National Laboratory. His interests include the design and synthesis of new materials with emphasis on systems with highly unusual structural/physical characteristics or those capable of energy conversion, energy detection, environmental remediation, and catalysis. After obtaining his B.Sc. degree from Aristotle University in Greece, he received his Ph.D. degree in Chemistry from the University of Iowa and was a postdoctoral research fellow at the University of Michigan and Northwestern University. He holds a Charles E. and Emma H. Morrison Professor Chair at Northwestern University and is the Editor in Chief of the Journal of Solid State Chemistry.

Award Recipients

Criteria for selection for both AACG awards are scientific excellence, clarity of presentation and impact on the field of crystal growth.

Christine A. Wang
American Association of Crystal Growth Award
Presentation - Tuesday, August 1, 2017 8:30 AM

The AACG award is presented for outstanding contributions to the field of crystal growth and epitaxy.

Award Citation: For seminal and innovative contributions to epitaxial crystal growth of III-V compounds semiconductors and the design of high-performance OMVPE reactors.

Bharat Jalan
American Association of Crystal Growth Young Scientist Award
Presentation - Tuesday, August 1, 2017 9:15 AM

The AACG Young Scientist Award is given to an early career scientist working in the fields of crystal growth research, development, practice, theory, modeling, characterization, application or production to recognize his or her outstanding scientific and technical contributions in the field of crystal growth. This award is made based on published papers, patents, conference presentations, products or teaching coming from the candidate's work.

Award Citation: For pioneering work in the development of new growth approaches to synthesize complex oxide heterostructures.

Scope and Purpose of the Conferences

Crystal growth is a broad field that attracts people from a wide variety of disciplines. The purpose of the conference is to bring together scientists and engineers to discuss the entire breadth of activities in crystal growth from bulk to nano, fundamentals to characterization, modeling to equipment design, every type of epitaxy and every type of material from elemental to biological. The conferences feature symposia on important new topics in crystal growth as well as more traditional subjects of enduring interest. Focused and joint sessions have been organized based on the topical distribution of papers and to foster cross-fertilization among fields. While the presentations are the core of the conference schedule, it is the personal interactions with colleagues across the spectrum of crystal growth that give strength to the experience of this meeting and an opportunity to explore fully the issues of importance in the field. The crystal growth community is unique in that the vendor community is intimately integrated with the technical community and the vendor exhibit will give everyone a chance to form and renew commercial and technical relationships. A single registration fee gives attendees access to the ACCGE-21, OMVPE-18, and the topical symposia.

ACCGE-21 will provide a forum for the presentation and discussion of recent research and development activities in all aspects of epitaxial thin film and bulk crystal growth; sessions will integrate fundamentals, experimental and industrial growth processes, characterization and applications. The meeting will focus on a wide range of crystal growth science issues.

The OMVPE-18 Workshop continues a tradition, started at Cornell in 1983, of bringing together specialists in the OMVPE field from industry, academia and government laboratories in an informal atmosphere and scenic surroundings. The workshop is an excellent opportunity to present and discuss new results in the OMVPE field. It also provides a venue for newcomers to the field to familiarize themselves with OMVPE science and technology.

Practical Information

The weather during August in Santa Fe will be warm/hot during the day and cool at night with very low humidity. It is a good idea to bring water along on any tours or walks around the area. Attendees are cautioned that Santa Fe is at a rather high elevation (7200 feet or 2200 m) and that some guests may experience difficulties at first with the altitude. In order to avoid experiencing "mountain sickness" guests are encouraged to limit their physical exertion for the first day or two and to drink plenty of water. For some guests, the consumption of alcoholic beverages may aggravate these effects. If you have issues with high altitude, it would be wise to fly into Albuquerque (5300 feet or 1600 m) and spend the night before driving up to Santa Fe.

It is the responsibility of the conference attendees and their families to have their own health insurance. Costs for medical care while attending the conference cannot be provided by the conference organizing committee, the AACG or its officers.

Proceedings

The Proceedings will be published as a special issue of the *Journal of Crystal Growth*.

Manuscript submission deadline: September 1, 2017

Authors who have a paper accepted for oral or poster presentations at the 21st American Conference on Crystal Growth and Epitaxy/18th US Biennial Workshop on Organometallic Vapor Phase Epitaxy 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.

Proceedings Editors,

Tania Paskova, North Carolina State University
Catherine Caneau, retired
Robert Feigelson, Stanford University

Wednesday Afternoon Excursions

Option #1:

Float / Rafting Trip
Wednesday, August 2, 12:00 p.m. - 5:00 p.m.

One of America's most popular adventures, whitewater rafting is becoming a tradition for visitors to Northern New Mexico. The rafting season begins with the snowmelt in spring and generally, lasts through October. The runoff will be lower in August, so the rapids will be less intense and there will be some floating. All levels of rafters, from the novice to the expert, will enjoy this adventure along the Rio Grande. Along the valley floor, experience spectacular scenery, with a full range of whitewater on the "Racecourse" south of Taos.

Due to safety regulations, no one under the age of seven years old or in excess of 230 pounds will be permitted to participate in this event. Waterproof suits and helmets can be provided upon request. If desired, bring extra clothing to change into at the take-out point.

COST: $150 per person includes transportation, guide, bottled water and boxed lunch on board, half-day rafting, rafting guides and all gear, gratuities and tax. Space is limited.

Option #2:

Discover Canyon Road (interactive art tour)
Wednesday, August 2, 2:00pm – 4:00pm

For over a century, artists and art lovers have flocked to Canyon Road, Santa Fe's historic art district. This picturesque area features more than 80 art galleries, unique specialty shops, world-class restaurants, and the historic adobe architecture that gives Santa Fe its legendary southwestern charm. On this interactive gallery tour, join your guide, a local art historian and museum educator, for an insider's look at a small selection of galleries that showcase the breadth and depth of artwork on Canyon Road. Delve into the work on view through activities that encourage deep looking, chat with local artists and gallerists, and discover the history of this charming neighborhood.

COST: $50 per person includes transportation, guide, gratuities and tax. Limit of 24 participants.

Presentation Instructions

Oral

Each room will have an LCD projector, laser pointer, and microphone. PC laptop computers will be provided by the conference and available for presentations. Please arrive at least 15 minutes before the session begins in order to either load your presentation on the conference laptop or check the connection 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.

Time slots:

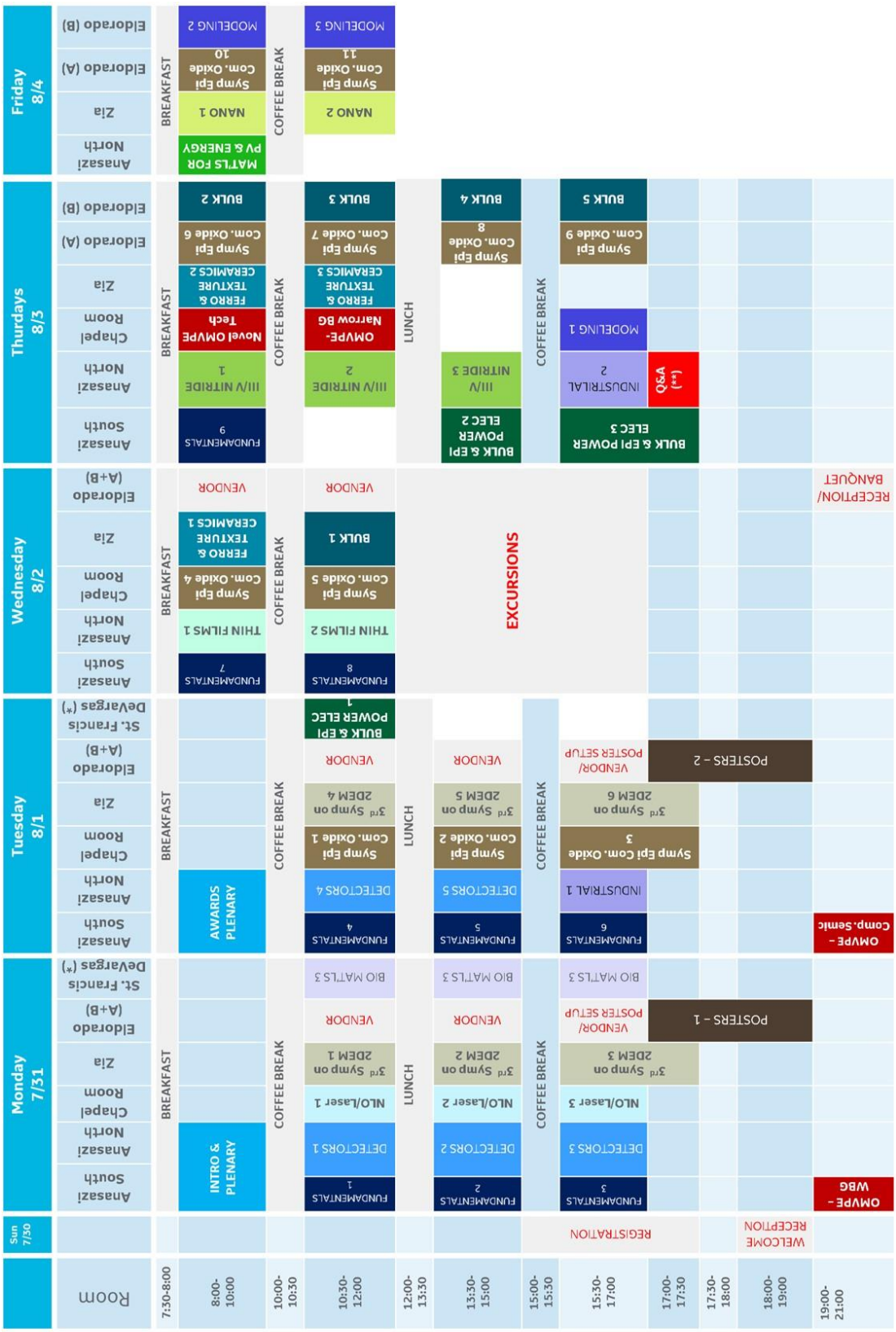
Plenary and Prize talks are 45 minutes total (40 min. presentation, 5 min. questions)
Invited ACCGE talks are 30 minutes total (25 min. presentation, 5 min. questions)
Contributed ACCGE talks are 15 minutes total (12 min. presentation, 3 min. questions)
Contributed OMVPE and joint ACCGE/OMVPE talks are 20 minutes total (17 min. presentation, 3 min. questions)

Posters

Posters must fit in a 3' wide x 4' tall space. Push pins will be available in the poster area. Posters sessions are scheduled for Monday and Tuesday afternoons from 5:00 – 7:00pm in the Eldorado Ballroom. Please mount your poster from 2:30 – 5:00 pm on the day of the presentation. Individual poster boards will be identified with poster numbers. Please check the list in the room to determine the number of your poster and mount your poster in the correct space. You or a co-author are expected to be present at your poster during the entire session to answer questions.

Please remove your poster in a timely manner at the end of your poster session.

Schedule Overview



(*) St Francis DeVargas room is located in the St Francis Hotel

(**) Special Q&A session - "What they don't teach you about industrial crystal growth in school"

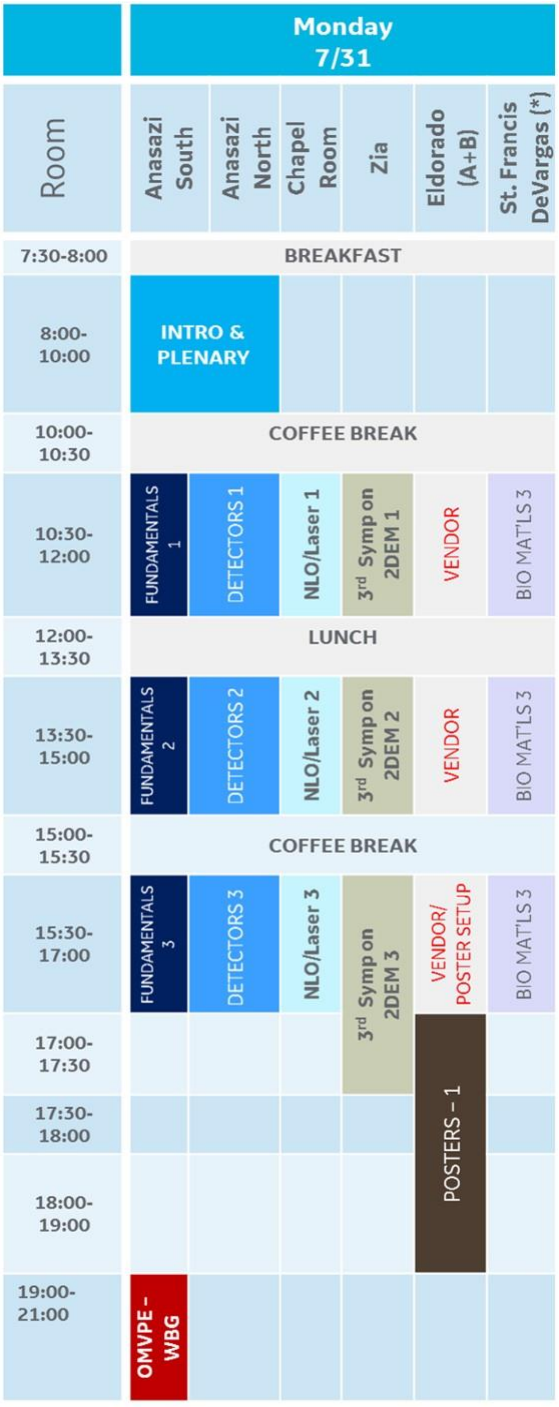
Sunday, July 30, 2017

15:00 – 18:00
Registration
CAVA/Lobby

18:00 – 19:00
Welcome Reception
Casa Espana

Monday, July 31, 2017

Day at a glance



(*) St Francis DeVargas room is located in the St Francis Hotel

Monday, July 31, 2017

8:00 – 10:00	**Introduction/Plenary**	**Anasazi Ballroom**
	Moderation: Kevin Zawilski, BAE	

8:00 – 8:30
Welcome
Kevin Zawilski
Robert Biefeld

8:30 – 9:15
Gerald B. Stringfellow
Invited
"Thermodynamic Considerations for Epitaxial Growth of III/V Compounds"

9:15 – 10:00
Mercouri G. Kanatzidis
Invited
"New Hard Radiation Detection Semiconductor Materials"

10:30 - 12:00	**Monday, July 31, 2017**	**Anasazi Ballroom North**
	Detector Materials (1 of 5)	
	Moderation: Gautam Gundiah[1]; Mariya Zhuravleva[2]; [1]APL/US, [2]TN/Us	

10:30 - 11:00 THE ELIMINATION OF SUZUKI PHASE PRECIPITATES FROM SINGLE CRYSTALS OF DIVALENT-ION-DOPED ALKALI HALIDES: IMPROVED SCINTILLATORS FOR RADIATION DETECTION
Lynn Boatner[1]; Eleanor Comer[2]; Gomez Wright[2]; Joanne Ramey[2]; Richard Riedel[2]; Gerald Jellison[2]; James Kolopus[2]; [1]ORNL, TN/Us, [2]Oak Ridge National Laboratory, TN/Us

11:00 - 11:15 STRUCTURE AND THERMAL EXPANSION OF CSCAI3:EU AND CSSRBR3:EU SCINTILLATORS
Matthew Loyd[1]; Adam Lindsey[2]; Maulik Patel[1]; Charles Melcher[3]; Mariya Zhuravleva[1]; [1]University of Tennessee, TN/Us, [2]Scintillation Materials Research Center, TN/Us, [3]University of Tennessee-Knoxville, TN/Us

11:15 - 11:30 GROWTH AND LUMINESCENCT PROPERTIES OF CS_2HFI_6-BASED SINGLE CRYSTAL SCINTILLATORS
Shohei Kodama[1]; Shunsuke Kurosawa[2]; Akihiro Yamaji[3]; Jan Pejchal[4]; Robert Kral[5]; Yuji Ohashi[6]; Kei Kamada[6]; Yuui Yokota[7]; Martin Nikl[8]; Akira Yoshikawa[3]; [1]Institute for Materials Research, Jp, [2]Department of Physics, Yamagata University, Jp, [3]Institute for Materials Research, Tohoku University, Jp, [4]Institute of Physics CAS, , [5]Institute of Physics of the Czech Academy of

Sciences, Cz, [6]NICHe, Tohoku University, Jp, [7]Tohoku University, Jp, [8]Institute of Physics, Czech Academy of Sciences, Cz

11:30 - 11:45 CRYSTAL GROWTH OF CESIUM HAFNIUM CHLORIDE SCINTILLATORS
Stephanie Lam[1]; Arnold Burger[2]; Shariar Motakef[1]; [1]CapeSym Inc., MA/Us, [2]Fisk University, TN/Us

11:45 - 12:00 EFFECTS OF CA/SR RATIO CONTROL ON OPTICAL AND SCINTILLATION PROPERTIES OF EU-DOPED LI(CA,SR)ALF$_6$ SINGLE CRYSTALS
Yuui Yokota[1]; Chieko Tanaka[1]; Shunsuke Kurosawa[2]; Akihiro Yamaji[3]; Yuji Ohashi[4]; Kei Kamada[4]; Martin Nikl[5]; Akira Yoshikawa[3]; [1]Tohoku University, Jp, [2]Department of Physics, Yamagata University, Jp, [3]Institute for Materials Research, Tohoku University, Jp, [4]NICHe, Tohoku University, Jp, [5]Institute of Physics, Czech Academy of Sciences, Cz

10:30 - 12:00 Monday, July 31, 2017 Anasazi Ballroom South
Fundamentals of Crystal Growth (1 of 9)
Moderation: Peter. Vekilov, U of Houston/US

10:30 - 11:00 WHAT DETERMINES A NUCLEATION PATHWAY?
Yuki Kimura, Institute of Low Temperature Science, Hokkaido University., Jp

11:00 - 11:30 CLASSICAL OR MULTI-STEP NUCLEATION
Dominique Maes[1]; James Lutsko[2]; Sander Stroobants[1]; Mike Sleutel[1]; Sudha Chinnu[1]; Marco Potenza[3]; Peter Vekilov[4]; [1]Vrije Universiteit Brussel, Be, [2]Universite Libre de Bruxelles, Be, [3]University of Milano, It, [4], Us

11:30 - 12:00 LA MER BURST NUCLEATION AND GROWTH: ASSUMPTIONS, MODELS, AND DATA
Baron Peters, University of California - Santa Barbara, Us

10:30 – 11:30 Monday, July 31, 2017 Chapel Room
Nonlinear Optical and Laser Host Materials (1 of 3)
Moderation: Kevin Stevens, Northrop Grumman-SYNOPTICS//US

10:30 - 11:00 SOME CURRENT DEVELOPMENTS IN HYDROTHERMAL CRYSTAL GROWTH OF BORATES FOR UV NONLINEAR OPTICS
Joseph Kolis; Colin McMillen; Rylan Terry; Henry Giesber; Clemson University, SC/Us

11:00 - 11:15 SYNTHESIS, GROWTH AND CHARACTERIZATION OF NOVEL NONLINEAR OPTICAL MATERIAL: 4-FLUOROBENZYL TRIPHENYLPHOSPHONIUMCHLORIDE
Arul Haribabu[1]; K Sugandhi[1]; S Bharathi[2]; A Jeya Rajendran[2]; K Eswara Moorthi[2]; M P Kannan[2]; [1]Department of Science and Humanities, Kumaraguru College of Technology (Autonomous), In, [2]Advanced Materials Research Laboratory, Department of Chemistry, Loyola College, In

11:15 - 11:30 MEASUREMENTS OF D COEFFICIENTS OF SOME CUBIC CRYSTALS AT INFRARED WAVELENGTHS
Joel Murray[1]; Jean Wei[1]; Shekhar Guha[2]; [1]UES, Inc., OH/Us, [2]Air Force Research Laboratory, OH/Us

10:30 - 12:00 Monday, July 31, 2017 St Francis De Vargas
Biological and Biomimetic Materials (1 of 3)
Moderation: Derk Joester[1]; Elia Beniash[2]; Yu Huang[3]; [1] Northwestern U/US, [2]University of Pittsburgh/US, [3]UCLA/US

10:30 - 11:00 ASSEMBLY OF VIRUS NANOREACTORS
Trevor Douglas, Indiana University, Us

11:00 - 11:30 BIO-INSPIRED CRYSTAL GROWTH OF TRANSITION METAL OXIDES IN CONFINEMENT
Lara Estroff, Cornell University, NY/Us

11:30 - 11:45 NOVEL BIO-INSPIRED SEMICONDUCTOR/AMINO ACID COMPOSITE SINGLE CRYSTALS: FROM CRYSTAL GROWTH TO BAND GAP ENGINEERING
Iryna Polishchuk[1]; Boaz Pokroy[2]; [1]Technion, Il, [2]Technion Institute of Technology, Il

11:45 - 12:00 DESIGN AND SYNTHESIS OF FUNCTIONALIZED SELF-ASSEMBLED MONOLAYERS (SAMS) AS IN VITRO MODEL OF THE ORGANIC INTERFACES IN THE SITE-SELECTIVE MINERALIZATION PROCESS IN THE CHITON TOOTH.
Linus Stegbauer[1]; Derk Joester[2]; [1]Northwestern University, MSE, Us, [2]Northwestern University, IL/Us

10:30 - 12:00 Monday, July 31, 2017 Zia Ballroom
3rd Symposium on 2D Electronic Materials (1 of 6)
Moderation: Kurt Gaskill[1]; JoanM. Redwing[2]; [1]NRL/US, [2]PennState/US

10:30 - 11:00 TEMPLATED CVD OF LARGE-AREA WS_2 WITH OHMIC GRAPHENE EDGE CONTACTS
Michael Fuhrer, Monash University, VIC/Au

11:00 - 11:20 OPTIMIZING TRANSITION METAL DISULFIDE METALORGANIC CHEMICAL VAPOR DEPOSITION PROCESSES USING NON-DISPERSIVE INFRARED GAS ANALYZERS
James Maslar[1]; Berc Kalanyan[2]; Brent Sperling[1]; William Kimes[1]; Ravindra Kanjolia[3]; [1]NIST, Us, [2]National Institute of Standards and Technology, Us, [3]EMD Performance Materials, MA/Us

11:20 - 11:40 OPTIMIZATION OF MOVPE OF 2D MOS_2
M Heuken[1]; M Marx[2]; Y -R Lin[2]; H Kalisch[2]; A Vescan[2]; A Grundmann[2]; [1], , [2]RWTH Aachen University, De

11:40 - 12:00 EPITAXIAL GROWTH OF MOLYBDENUM DISULFIDE ON GALLIUM NITRIDE
Robert Burke[1]; Kehao Zhang[2]; Dmitry Ruzmetov[1]; Andrew Herzing[3]; Glen Birdwell[1]; Mahesh Neupane[1]; Terrance O'regan[1]; Barbara Nichols[1]; Matt Chin[1]; Alex Mazzoni[1]; Albert Davydov[3]; Joshua Robinson[2]; Madan Dubey[1]; Tony Ivanov[1]; [1]US Army Research Laboratory, MD/Us, [2]The Pennsylvania State University, PA/Us, [3]National Institute of Standards and Technology, MD/Us

13:30 - 15:00 Monday, July 31, 2017 Anasazi Ballroom North
Detector Materials (2 of 5)
Moderation: Gautam Gundiah[1]; Mariya Zhuravleva[2]; [1]APL/US, [2]TN/Us

13:30 - 13:45 PHASE EQUILIBRIA AND SEGREGATION IN BRIDGMAN GROWTH OF CS_2LIYCL_6
Frank Ruta[1]; Robert Feigelson[1]; Stacy Swider[2]; Stephanie Lam[2]; [1]Stanford University, CA/Us, [2]CapeSym Inc., MA/Us

13:45 - 14:15 HIGH-THROUGHPUT GROWTH OF SRI_2(EU) AND CLYC SCINTILLATORS BY THE EFG METHOD
Stacy Swider[1]; George Calvert[2]; Matthew Overholt[1]; Frank Ruta[2]; Robert Feigelson[2]; [1]CapeSym Inc., MA/Us, [2]Stanford University, MA/Us

14:15 - 14:45 PULSED NEUTRON IMAGING STUDIES OF IN SITU GROWTH OF NEUTRON AND GAMMA DETECTOR MATERIALS
John Z Larese; Christopher Crain; Nicholas Strange; University of Tennessee, TN/Us

14:45 - 15:00 SIMULTANEOUS GROWTH OF 38 MM DIAMETER $KCaI_3$:EU SCINTILLATOR
Matthew Loyd[1]; Luis Stand[2]; Charles Melcher[3]; Mariya Zhuravleva[1]; [1]University of Tennessee, TN/Us, [2]Scintillation Materials Research Center, University of Tennessee, TN/Us, [3]University of Tennessee-Knoxville, TN/Us

13:30 - 15:00 Monday, July 31, 2017 Anasazi Ballroom South
Fundamentals of Crystal Growth (2 of 9)
Moderation: Peter. Vekilov, U of Houston/US

13:30 - 14:00 IMPACT OF ADDITIVES ON THE CRYSTALLIZATION OF PHARMACEUTICAL SUBSTANCES
Lynne Taylor, Purdue University, IN/Us

14:00 - 14:30 NUCLEATION OF CRYSTALS OF HARD POLYHEDRA
Julia Dshemuchadse; Samanthule Nola; Richmond Newman; Sharon Glotzer; University of Michigan, MI/Us

14:30 - 15:00 SMALL-VOLUME NUCLEATION
Stéphane Veesler; N Candoni; R Grossier; R Morin; CINaM-CNRS, Fr

13:30 - 15:00 Monday, July 31, 2017 Chapel Room
Nonlinear Optical and Laser Host Materials (2 of 3)
Moderation: Kevin Stevens, Northrop Grumman-SYNOPTICS /US

13:30 - 14:00 ADVANCES IN NONLINEAR OPTICAL CRYSTALS FOR THE MID-INFRARED
Peter Schunemann, BAE Systems, NH/Us

14:00 - 14:30 THERMO-OPTIC AND STRESS-OPTIC PROPERTIES OF CADMIUM SILICON PHOSPHIDE
David Zelmon[1]; William Poston[2]; John Kunkel[2]; [1]Air Force Research Laboratory, Us, [2]US Air Force Research Laboratory, OH/Us

14:30 - 14:45 ADVANCES SINGLE CRYSTAL $CDSIP_2$ FOR HIGH ENERGY MID-INFRARED GENERATION
Kevin Zawilski[1]; Peter Schunemann[1]; F Kenneth Hopkins[2]; [1]BAE Systems, NH/Us, [2]Air Force Research Laboratory, AFRL/RX, OH/Us

14:45 - 15:00 OPTICAL ABSORPTION BANDS IN CDSIP2 CRYSTALS

Elizabeth Scherrer[1]; Brant Kananen[1]; Nancy Giles[1]; Larry Halliburton[2]; F Kenneth Hopkins[3]; Peter Schunemann[4]; Kevin Zawilski[4]; [1]Air Force Institute of Technology, Us, [2]West Virginia University, WV/Us, [3]Air Force Research Laboratory, AFRL/RX, OH/Us, [4]BAE Systems, NH/Us

13:30 - 15:00 Monday, July 31, 2017 St Francis De Vargas
Biological and Biomimetic Materials (2 of 3)
Moderation: Derk Joester[1]; Elia Beniash[2]; Yu Huang[3]; [1] Northwestern U/US, [2]University of Pittsburgh/US, [3]UCLA/US

13:30 - 14:00 ANTIMALARIALS INHIBIT HEMATIN CRYSTALLIZATION BY UNIQUE DRUG-SURFACE SITE INTERACTIONS
Peter Vekilov, , Us

14:00 - 14:30 THE SECONDARY AND QUATERNARY STRUCTURE OF AMELOGENIN ON HYDROXYAPATITE
Wendy Shaw[1]; Rajith Arachchige[1]; Sarah Burton[1]; Junxia Lu[2]; Yimin Xu[1]; Jinhui Tao[1]; Barbara Tarasevich[1]; Garry Buchko[1]; [1]Pacific Northwest National Laboratory, WA/Us, [2]Shanghai Tech, Cn

14:30 - 14:45 SPECIFIC AND NON-SPECIFIC INTERACTIONS WITH GROWING CALCITE CRYSTALS -LIVE IMAGING AFM STUDIES
Amir Berman; Bidisha Tah; Ben-Gurion University, Il

14:45 - 15:00 QUANTIFYING CRYSTALLIZATION KINETICS OF AMORPHOUS CALCIUM CARBONATE USING DROPLET MICROFLUIDICS
Jack Cavanaugh; Michael Whittaker; Derk Joester; Northwestern University, IL/Us

13:30 - 15:00 Monday, July 31, 2017 Zia Ballroom
3rd Symposium on 2D Electronic Materials (2 of 6)
Moderation: Kurt Gaskill[1]; JoanM. Redwing[2]; [1]NRL/US, [2]PennState/US

13:30 - 14:00 STUDIES OF LOCAL ELECTRONIC PROPERTIES IN GRAPHENE AND 2D MATERIALS
Olga Kazakova, NPL, Gb

14:00 - 14:20 INFLUENCE OF SUBSTRATE ON THE GROWTH AND PROPERTIES OF THIN 3R NBS2 FILMS GROWN BY CHEMICAL VAPOR DEPOSITION.
Azimkhan Kozhakhmetov[1]; Tanushree Choudhury[2]; Zakaria Al Balushi[1]; Yixuan Chen[3]; Ying Liu[3]; Joan Redwing[2]; [1]Dept. of Materials Science and Eng., The Pennsylvania State University, PA/Us, [2]The Pennsylvania State

University, PA/Us, [3]Department of Physics, The Pennsylvania State University, PA/Us

14:20 - 14:40 GROUP IV CHALCOGENIDES: EMERGING 2D AND LAYERED SEMICONDUCTORS
Peter Sutter[1]; Yuan Huang[2]; Hannu-Pekka Komsa[3]; Arkady Krasheninnikov[4]; Eli Sutter[5]; [1]University of Nebraska-Lincoln, NE/Us, [2]Brookhaven National Laboratory, Us, [3]Aalto University, Fi, [4]Helmholz-Zentrum Dresden-Rossendorf, De, [5],

14:40 - 15:00 VAPOR PHASE EPITAXY OF HEXAGONAL BORON NITRIDE ON SAPPHIRE
Anthony Rice[1]; Andrew Allerman[2]; Mary Crawford[2]; Thomas Beechem[2]; Taisuke Ohta[2]; Douglas Medlin[2]; Catalin Spataru[2]; Jeffrey Figiel[2]; Michael Smith[2]; [1]Sandia National Laboratories, NM/Us, [2]Sandia National Laboratories, Us

15:30 – 16:45 Monday, July 31, 2017 Anasazi Ballroom North
Detector Materials (3 of 5)
Moderation: Gautam Gundiah[1]; Mariya Zhuravleva[2]; [1] APL/US, [2]TN/Us

15:30 - 15:45 MITIGATION OF SECOND-PHASE PARTICLES IN SINGLE CRYSTALS VIA POST-GROWTH TREATMENT: TEMPERATURE GRADIENT ZONE MELTING AND ANNEALING
Nathan Morgan[1]; Kerry Wang[2]; Jeffrey Derby[1]; [1]University of Minnesota, MN/Us, [2]University of Minnesota - Twin Cities, MN/Us

15:45 - 16:00 MODELING AND EXPERIMENTAL ANALYSIS OF ZINC DISTRIBUTION AND DISLOCATION DENSITY EVOLUTION IN CZT BRIDGMAN CRYSTAL GROWTH
Alex Galyukov[1]; Vladimir Artemyev[2]; Andrey Smirnov[2]; Vasif Mamedov[2]; Vladimir Kalaev[2]; Zhou Changhe[3]; Chao Xu[3]; Shiwen Sun[3]; [1]STR US, Inc., VA/Us, [2]STR Group, Inc. – Soft-Impact, Ltd., Ru, [3]Shanghai Institute of Technical Physics, Chinese Academy of Sciences, Cn

16:00 - 16:15 TOWARDS OPTIMIZATION OF ACRT SCHEDULES APPLIED TO THE GRADIENT FREEZE GROWTH OF CADMIUM ZINC TELLURIDE
Mia Divecha[1]; Jedidiah McCoy[2]; Kelvin Lynn[2]; Jeffrey Derby[3]; [1]University of Minnesota, Us, [2]Washington Stat University, WA/Us, [3]University of Minnesota, MN/Us

16:15 - 16:30 ALTERNATIVE CRYSTAL GROWTH TECHNIQUES FOR THALLIUM BROMIDE SEMICONDUCTOR RADIATION DETECTORS

AMLAN Datta[1]; Piotr Becla[1]; Kris Becla[1]; Shariar Motakef[2]; [1]CapeSym, Inc., MA/Us, [2]CapeSym Inc., MA/Us

16:30 - 16:45 ANISOTROPIC AND TEMPERATURE-DEPENDENT THERMAL CONDUCTIVITY OF LEAD IODIDE
Arne Croell[1]; Justus Tonn[2]; Ekkehard Post[3]; Harald Böttner[4]; Andreas Danilewsky[2]; [1]University of Alabama in Huntsville, AL/Us, [2]University of Freiburg, De, [3]Netzsch Gerätebau GmbH, De, [4]Fraunhofer IPM (retired), De

15:30 - 17:00 Monday, July 31, 2017 Anasazi Ballroom South
Fundamentals of Crystal Growth (3 of 9)
Moderation: Peter Vekilov, U of Houston/US

15:30 - 16:00 CURRENT STATUS & FUTURE CHALLENGES IN CRYSTAL GROWTH PREDICTION
Michael Doherty, University of California Santa Barbara, CA/Us

16:00 - 16:30 EXPERIMENT AND PREDICTION OF SURFACE TEMPLATED POLYMORPHS AND SOLVATES
Alastair Florence, CMAC, Technology Innovation Centre, University of Strathclyde, Gb

16:30 - 17:00 UNRAVELING COMPLEXITY IN THE CRYSTALLIZATION OF PHARMACEUTICAL SOLIDS
Susan Reutzel-Edens, Eli Lilly and Company, Us

15:30 – 16:30 Monday, July 31, 2017 Chapel Room
Nonlinear Optical and Laser Host Materials (3 of 3)
Moderation: Kevin Stevens, Northrop Grumman-SYNOPTICS/US

15:30 - 15:45 GROWTH AND PROCESSING OF ORIENTATION-PATTERNED SEMICONDUCTOR WAVEGUIDES FOR MID-IR FREQUENCY CONVERSION
Peter Schunemann[1]; Daniel Magarrell[2]; Paul Moffitt[2]; Peter Ketteridge[2]; Bradley Deshano[3]; Rita Peterson[4]; [1]BAE Systems, NH/Us, [2]BAE Systems, Inc., NH/Us, [3]Air Force Research Laboratory (AFRL/RYDH), OH/Us, [4]Air Force Research Laboratory, OH/Us

15:45 - 16:00 HETEROEPITAXY OF ORIENTATION-PATTERNED NONLINEAR OPTICAL MATERIALS

Vladimir Tassev[1]; Shiva Vangala[2]; Rita Peterson[1]; Michael Snure[1]; [1]Air Force Research Laboratory, OH/Us, [2]Azimuth Corporation, OH/Us

16:00 - 16:15 TUNABLE3-5 AND 7-12 μM PICOSECOND OPTICAL PARAMETRIC AMPLIFIER BASED ON LIINSE2 MID-INFRARED CRYSTAL
Xutang Tao, State Key Laboratory of Crystal Materials, Cn

16:15 - 16:30 GROWTH OF CHROMIUM DOPED FORSTERITE CR:MG_2SIO_4 LASER CRYSTALS FROM NON-STOICHIOMETRIC MELTS AND THE PROLONGED HIGH-TEMPERATURE OXIDIZING ANNEALING OF THE CRYSTALS AS THE TOOLS FOR CHANGE THE OXIDATION STATES OF CHROMIUM IN THE CRYSTALS
Viktoriia Sanina[1]; Kirill Subbotin[2]; Denis Lis[1]; Evgenii Zharikov[1]; [1]A.M.Prokhorov General Physics Institute of Russian Academy of Sciences, Ru, [2]A.M.Prokhorov General Physics Institute Russian Academy of Sciences, Ru

15:30 - 17:00 Monday, July 31, 2017 St Francis De Vargas
Biological and Biomimetic Materials (3 of 3)
Moderation: Derk Joester[1]; Elia Beniash[2]; Yu Huang[3]; [1] Northwestern U/US, [2]University of Pittsburgh/US, [3]UCLA/US

15:30 - 16:00 WHAT YOUR MOTHER NEVER TOLD YOU ABOUT APATITE...AND HOW TO EXPLOIT IT
Jill Pasteris, Washington University in St. Louis, MO/Us

16:00 - 16:30 TOOTH ENAMEL FORMATION: THE ESSENTIAL ROLE OF AMELOGENIN PHOSPHORYLATION
Henry Margolis[1]; Nah-Young Shin[2]; Hajime Yamazaki[2]; Seth Margolis[3]; Megan Pugach[1]; James Simmer[4]; Elia Beniash[5]; [1]The Forsyth Institute, MA/Us, [2]Harvard School of Dental Medicine, MA/Us, [3]The Johns Hopkins University School of Medicine, MD/Us, [4]University of Michigan School of Dentistry, MI/Us, [5]University of Pittsburgh School of Dental Medicine, PA/Us

16:30 - 17:00 REGULATION OF COCCOLITH CALCITE FORMATION
Andre Scheffel[1]; Sanja Sviben[1]; Assaf Gal[1]; Damien Faivre[2]; [1]Max-Planck Institute of Molecular Plant Physiology, De, [2]Max-Planck Institute of Colloids and Interfaces, De

15:30 - 17:20 Monday, July 31, 2017 Zia Ballroom
3rd Symposium on 2D Electronic Materials (3 of 6)
Moderation: Kurt Gaskill[1]; JoanM. Redwing[2]; [1]NRL/US, [2]PennState/US

15:30 - 16:00 REMOTE EPITAXY THROUGH GRAPHENE SAVES WAFER COST VIA 2DLT
Jeehwan Kim, MIT,

16:00 - 16:30 TWO-DIMENSIONAL GALLIUM NITRIDE REALIZED *VIA* GRAPHENE ENCAPSULATION
Zakaria Al Balushi[1]; Joshua Robinson[2]; Joan Redwing[2]; [1]Dept. of Materials Science and Eng., The Pennsylvania State University, PA/Us, [2]The Pennsylvania State University, PA/Us

16:30 - 17:00 THE GROWTH AND ELECTRONIC PROPERTIES OF ULTRA-THIN EPITAXIAL TOPOLOGICAL DIRAC SEMIMETAL NA_3BI FILMS
Mark Edmonds, Monash University, Au

17:00 - 17:20 THE EFFECTS OF COMPOSITION, GROWTH CONDITIONS AND DOPING ON VERTICAL BRIDGMAN GROWTH OF THE TOPOLOGICAL INSULATOR BI2TE2SE
David Snyder[1]; Randal Cavalero[1]; Robert Lavelle[1]; Ron Redwing[2]; [1]Penn State Applied Research Laboratory, PA/Us, [2]Penn State MatSE, Us

17:00 - 19:00 Monday, July 31, 2017 Eldorado Grand Ballroom
Poster Session (1 of 2) & Vendor Reception

P1-1 GROWTH AND MAGNETIC PROPERTIES OF PRCO2 SINGLE CRYSTALS
Yong Liu; Arjun Pathak; Yaroslav Mudryk; Qisheng Lin; Vitalij Pecharsky; Thomas Lograsso; Ames Laboratory, IA/Us

P1-2 GROWTH, MICROSTRUCTURE AND MECHANICAL PROPERTIES OF IRIDIUM FIBER CRYSTAL BY ALLOY-MICRO-PULLING-DOWN METHOD
Yuui Yokota[1]; Takayuki Nihei[2]; Yuji Ohashi[3]; Shunsuke Kurosawa[4]; Kei Kamada[3]; Akira Yoshikawa[2]; [1]Tohoku University, Jp, [2]Institute for Materials Research, Tohoku University, Jp, [3]NICHe, Tohoku University, Jp, [4]Department of Physics, Yamagata University, Jp

P1-3 GROWTH AND INTERNAL STRUCTURE OF CO-CR-MO ALLOY FIBER CRYSTALS BY ALLOY-MICRO-PULLING-DOWN METHOD
Takayuki Nihei[1]; Yuui Yokota[2]; Akihiro Yamaji[1]; Yuji Ohashi[3]; Shunsuke Kurosawa[4]; Kei Kamada[3]; Akira Yoshikawa[1]; [1]Institute for Materials Research, Tohoku University, Jp, [2]Tohoku University, Jp, [3]NICHe, Tohoku University, Jp, [4]Department of Physics, Yamagata University, Jp

P1-4 GROWTH AND PIEZOELECTRIC PROPERTIES OF $CA_3TA(GA_{1-x}SC_x)_3SI_2O_{14}$ BULK SINGLE CRYSTALS

Yu Igarashi[1]; Yuui Yokota[2]; Yuji Ohashi[3]; Kenji Inoue[4]; Akihiro Yamaji[5]; Yasuhiro Shoji[5]; Kei Kamada[3]; Shunsuke Kurosawa[6]; Akira Yoshikawa[5]; [1], , [2]Tohoku University, Jp, [3]NICHe, Tohoku University, Jp, [4]Piezo Studio Inc., Jp, [5]Institute for Materials Research, Tohoku University, Jp, [6]Department of Physics, Yamagata University, Jp

P1-5 STUDIES ON GROWTH ASPECTS, PROPERTIES AND EFFECTS OF H^+ ION IMPLANTATION ON ORGANIC SINGLE CRYSTAL: L-HISTIDINIUM SEMISUCCINATE (LHS)

H Arul[1]; D Rajan Babu[2]; R Ezhil Vizhi[2]; [1]Department of Science and Humanities, Kumaraguru College of Technology (Autonomous),, In, [2]Advanced Materials Research Centre, Department of Physics, School of Advanced Sciences, VIT University, In

P1-6 SYNTHESIS, GROWTH AND CHARACTERIZATION OF METAL ORGANIC SODIUM HYDROGEN OXALATE MONOHYDRATE SINGLE CRYSTAL

D S Ajisha[1]; R Ezhil Vizhi[1]; D Rajan Babu[2]; H Arul[3]; [1]VIT University, In, [2]Advanced Materials Research Centre, Department of Physics, School of Advanced Sciences, VIT University, In, [3]Department of Science and Humanities, Kumaraguru College of Technology (Autonomous),, In

P1-7 GROWTH OF DETECTOR GRADE CADMIUM ZINC TELLURIDE VIA IMPLEMENTATION OF CRUCIBLE ROTATION IN MODIFIED VERTICAL BRIDGMAN METHOD

Jedidiah McCoy[1]; Saketh Kakkireni[2]; Santosh Swain[2]; Mia Divecha[3]; Jeffrey Derby[4]; Kelvin Lynn[1]; [1]Washington Stat University, WA/Us, [2]Washington State University, WA/Us, [3]University of Minnesota, Us, [4]University of Minnesota, MN/Us

P1-8 MELT GROWTH OF ZINC ALUMINATE SPINEL SINGLE CRYSTAL BY THE MICRO-PULLING DOWN METHOD UNDER ATMOSPHERIC PRESSURE

Akria Yoshikawa[1]; Kei Kamada[2]; Yasuhiro Shoji[3]; Vladimir Kochurikhin[4]; Shunsuke Kurosawa[5]; Akihiro Yamaji[3]; Yuji Ohashi[2]; Yuui Yokota[6]; [1]IMR, Tohoku Universiry, Jp, [2]NICHe, Tohoku University, Jp, [3]Institute for Materials Research, Tohoku University, Jp, [4]General Physics Institute, Russian Academy of Sciences, Ru, [5]Department of Physics, Yamagata University, Jp, [6]Tohoku University, Jp

P1-9 REVISITING CAPILLARITY AND ITS IMPACT ON SHAPE EVOLUTION DURING CZOCHRALSKI CRYSTAL GROWTH

Simon Brandon; Oleg Weinstein; Technion, Il

P1-10 CRYSTAL GROWTH AND CHARACTERIZATION OF UNDOPED AND DY-DOPED $TLPB_2BR_5$ FOR NUCLEAR DETECTION AND IR LASERS

U Hommerich[1]; EiEi Brown[1]; Daniel Hart[2]; M Swain[1]; H Chen[3]; S Trivedi[3]; [1]Hampton University, Us, [2]Hampton University, VA/Us, [3]Brimrose Technology Corporation, MD/Us

P1-11 ZONE-REFINEMENT PURIFICATION, FILTERING METHOD AND GROWTH DIFFICULTIES OF EUROPIUM DOPED STRONTIUM IODIDE ($SRI_2:EU^{2+}$) SCINTILLATOR SINGLE CRYSTAL FOR RADIATION DETECTION APPLICATIONS

A Raja[1]; D Joseph Daniel[2]; P Ramasamy[1]; S G Singh[3]; S Sen[3]; S C Gadkari[3]; [1]SSN College of Engineering, In, [2]Kyungpook National University, Kr, [3]Bhabha Atomic Research Centre, In

P1-12 PALLADIUM OXIDE THIN FILMS FOR OXIDIZING GASES DETECTION

Alexander Samoylov[1]; Valentin Ievlev[1]; Stanislav Ryabtsev[1]; Alexey Shaposhnik[2]; Alexey Sinelnikov[1]; [1]Voronezh State University, Ru, [2]Voronezh State Agricultural University, Ru

P1-13 BORON CODOPING OF CZOCHRALSKI GROWN LUTETIUM ALUMINUM GARNET AND THE EFFECT ON SCINTILLATION PROPERTIES

Camera Foster[1]; Merry Koschan[2]; Chuck Melcher[2]; Yuntao Wu[2]; [1], TN/Us, [2]University of Tennessee, Us

P1-14 CRYSTAL GROWTH OF KCAI3:EU AND KSR2I5:EU SCINTILLATORS USING THE MICRO-PULLING-DOWN METHOD

Mariya Zhuravleva[1]; Robert Kral[2]; Matthew Loyd[1]; Chuck Melcher[3]; Shunsuke Kurosawa[4]; Akira Yoshikawa[5]; [1]University of Tennessee, TN/Us, [2]Institute of Physics of the Czech Academy of Sciences, Cz, [3]University of Tennessee, Us, [4]Department of Physics, Yamagata University, Jp, [5]Institute for Materials Research, Tohoku University, Jp

P1-15 SPATIAL DISTRIBUTION OF EU IN BABRCL:EU SINGLE CRYSTAL ASSESSED BY LASER INDUCTED BREAKDOWN SPECTROSCOPY (LIBS)

Tetiana Shalapska[1]; Didier Perrodin[2]; Jhanis Gonzalez[2]; Dayana Oropeza[2]; Xianglei Mao[2]; Vassilia Zobra[2]; Gregory Bizarri[2]; Edith Bourret-Courchesne[2]; [1]Lawrence Berkeley National Laboratory, Us, [2]Lawrence Berkeley National Laboratory, CA/Us

P1-16 CZOCHRALSKI GROWTH AND SCINTILLATION PROPERTIES OF CE DOPED GADOLINIUM SCANDIUM ALUMINIUM GARNET SINGLE CRYSTALS

Kei Kamada[1]; Vladimir Kochurikhin[2]; Shunsuke Kurosawa[3]; Yuji Ohashi[1]; Yuui Yokota[4]; Akira Yoshikawa[5]; [1]NICHe, Tohoku University, Jp, [2]General Physics Institute, Russian Academy of Sciences, Ru, [3]Department of Physics,

Yamagata University, Jp, [4]Tohoku University, Jp, [5]Institute for Materials Research, Tohoku University, Jp

P1-17 BULK GROWTH OF THE $CSPBBR_3$ PEROVSKITE, STRUCTURE AND OPTICAL PROPERTIES

Didier Perrodin[1]; Roberto Reis[1]; Tetiana Shalapska[2]; Stephen Derenzo[1]; Edith Bourret[1]; Gregory Bizarri[1]; [1]Lawrence Berkeley National Laboratory, CA/Us, [2]Lawrence Berkeley National Laboratory, Us

P1-18 LI^+, NA^+ AND K^+ CO-DOPING EFFECTS ON SCINTILLATION PROPERTIES OF $CE:GD_3GA_3AL_2O_{12}$ SINGLE CRYSTALS

Masao Yoshino[1]; Kei Kamada[2]; Vladimir Kochurikhin[3]; Mikhail Ivanov[3]; Martin Nikl[4]; Satoshi Okumura[5]; Seiichi Yamamoto[5]; Jung Yeol Yeom[6]; Yasuhiro Shoji[7]; Shunsuke Kurosawa[8]; Yuui Yokota[9]; Yuji Ohashi[2]; Akira Yoshikawa[7]; [1]C&A Corporation, Jp, [2]NICHe, Tohoku University, Jp, [3]General Physics Institute, Russian Academy of Sciences, Ru, [4]Institute of Physics, Czech Academy of Sciences, Cz, [5]Graduate School of Medicine Department of Radiological and Medical Laboratory Sciences, Nagoya University, Jp, [6]Korea University, Kr, [7]Institute for Materials Research, Tohoku University, Jp, [8]Department of Physics, Yamagata University, Jp, [9]Tohoku University, Jp

P1-19 BRIDGEMAN GROWTH AND CHARACTERIZATION OF PYN-PMN-PT FERROELECTRIC SINGLE CRYSTALS

Samuel Taylor[1]; Jun Luo[2]; Wes Hackenberger[2]; Shujun Zhang[3]; Thomas Shrout[4]; Fei Li[4]; [1]TRS Technologies Inc., PA/Us, [2]TRS Technologies, Inc., Us, [3]University of Wollongong, Au, [4]Pennsylvania State University, PA/Us

P1-20 SURFACE FREE ENERGY AND THE MORPHOLOGY OF FLUORITE CRYSTALS

Takaomi Suzuki; Ayano Tsukagoshi; Faculty of Engineering, Shinshu University, Jp

P1-21 APPLICATION OF ULTRASOUND FOR CONTROL OF THE SUGAR CRYSTALLIZATION PROCESS

Zdenek Bubnik; Vladimir Pour; Andrea Hinkova; Svatopluk Henke; Evzen Sarka; University of Chemistry and Technology, Prague, Cz

P1-22 GROWTH AND SCINTILLATION PROPERTIES OF $CE:LACL_3/AECL_2$ (AE=MG, CA, SR, BA) EUTECTICS FOR X-RAY IMAGING APPLICATIONS

Akria Yoshikawa[1]; Kei Kamada[2]; Yuki Furuya[3]; Shunsuke Kurosawa[4]; Akihiro Yamaji[5]; Yasuhiro Shoji[5]; Yuji Ohashi[2]; Yuui Yokota[6]; [1]IMR, Tohoku Universiry, Jp, [2]NICHe, Tohoku University, Jp, [3]Institute for Materials Research (IMR), Jp, [4]Department of Physics, Yamagata University, Jp, [5]Institute for Materials Research, Tohoku University, Jp, [6]Tohoku University, Jp

P1-23 HIGH-QUALITY N-TYPE GAN GROWN BY HVPE: SI VS O DOPING AND THERMAL CONDUCTIVITY

Tania Paskova[1]; Plamen Paskov[2]; Michael Slomski[2]; Jacob Leach[3]; John Muth[2]; [1]North Carolina State University, , [2]North Carolina State University, Us, [3]Kyma Technology, Us

P1-24 SCALING AND SCINTILLATION PERFORMANCE OF TL_2LIYCL_6:CE

Ivan Khodyuk[1]; Stacy Swider[2]; Shariar Motakef[2]; [1]CapeSym, Us, [2]CapeSym Inc., MA/Us

P1-25 EFFECT OF *(Incomplete Title)*

Farit Urakaev, Sobolev Institute of Geology and Mineralogy of the Siberian Branch of the Russian Academy of Sciences, Ru

P1-26 INVESTIGATION OF ACTIVATORS FOR SCINTILLATION IN LANTHANUM IODIDE

Mariya Zhuravleva[1]; Robyn Collette[2]; Daniel Rutstrom[1]; Matthew Loyd[3]; Luis Stand[4]; Chuck Melcher[5]; [1]Department of Materials Science and Engineering University of Tennessee Knoxville, TN/Us, [2], Us, [3]University of Tennessee, TN/Us, [4]Scintillation Materials Research Center, University of Tennessee, TN/Us, [5]University of Tennessee, Us

P1-27 EFFECT OF MASK ORIENTATION AND GROWTH PARAMETERS ON THE EPITAXIAL LATERAL OVERGROWTH OF GAN ON FREE-STANDING NONPOLAR SUBSTRATES

Saadat Mishkat-Ul-Masabih[1]; Andrew Aragon[2]; Morteza Monavarian[3]; Daniel Feezell[4]; [1]University of New Mexico, Us, [2]University of New Mexico, Center for High Technology Materials, Us, [3]University of New Mexico, NM/Us, [4]University of New Mexico, Center for High Technology Materials, Us

19:00 - 21:00 Monday, July 31, 2017 Anasazi Ballroom South

OMVPE of Wide Bandgap Materials for Opto- and Power-Electronics

19:00 - 19:20 GAN EPITAXY ON GLASS USING A (111) SILICON SEED LAYER FORMED BY ALUMINUM-INDUCED CRYSTALLIZATION

Mel Hainey Jr.[1]; Zakaria Al Balushi[2]; Ke Wang[3]; Nathan Martin[2]; Anushka Bansal[2]; Joan Redwing[4]; [1]Penn State University, Materials Research Institute, Us, [2]Dept. of Materials Science and Eng., The Pennsylvania State University, PA/Us, [3]Penn State University, Materials Characterization Laboratory, Us, [4]The Pennsylvania State University, PA/Us

19:20 - 19:40 STRESS ENGINEERED ALGAN/GAN POWER ELECTRONIC DEVICE STRUCTURES

Isra Mahaboob[1]; Kasey Hogan[2]; Emma Rocco[3]; Fatemeh Shahedipour-Sandvik[2]; [1]Colleges of Nanoscale Science and Engineering , SUNY Albany, NY/Us, [2]Colleges of Nanoscale Science and Engineering, Us, [3]Colleges of Nanoscale Science and Engineering, NY/Us

19:40 - 20:00 INFLUENCE OF THE SUBSTRATE ORIENTATION ON STRUCTURAL AND ELECTRICAL PROPERTIES OF HOMOEPITAXIAL β-GA_2O_3 THIN FILMS GROWN BY MOVPE

Guenter Wagner; Martin Albrecht; Michele Baldini; Andreas Fiedler; Zbigniew Galazka; Klaus Irmscher; Robert Schewski; Institute for Crystal Growth, De

20:00 - 20:20 GROWTH OF GAN ON 2D BN BY MOCVD FOR FLEXIBLE ELECTRONICS

Michael Snure[1]; Nicholas Glavin[2]; Kelson Chabak[2]; Qing Paduano[2]; [1]Air Force Reseach Laboratory , OH/Us, [2]Air Force Reseach Laboratory, OH/Us

20:20 - 20:40 GAN P-I-P-I-N SEPARATE ABSORPTION AND MULTIPLICATION ULTRAVIOLET AVALANCHE PHOTODIODES BY METALORGANIC CHEMICAL VAPOR DEPOSITION

Mi-Hee Ji[1]; Jeomoh Kim[2]; Theeradetch Detchprohm[1]; Shyh-Chiang Shen[1]; Russell Dupuis[1]; [1]Georgia Institute of Technology, GA/Us, [2]LG Electronics, Kr

20:40 - 21:00 UV AIR-GAP/$AL_XGA_{1-X}N$ DISTRIBUTED BRAGG REFLECTORS FABRICATED USING CONDUCTIVITY-SELECTIVE ELECTROCHEMICAL ETCHING

YOUNGJAE Park[1]; Theeradetch Detchprohm[1]; Oliver Moreno[1]; Karan Mehta[1]; Yuh-Shiuan Liu[1]; Shuo Wang[2]; Shyh-Chiang Shen[1]; P Douglas Yoder[1]; Fernando Ponce[2]; Russell Dupuis[1]; [1]Georgia Institute of Technology, GA/Us, [2]Arizona State University, AZ/Us

Tuesday, August 1, 2017
Day at a glance

(*) St Francis DeVargas room is located in the St Francis Hotel

Tuesday, August 1, 2017

8:00 – 10:00 Awards Session Anasazi Ballroom
Moderation: Tom Kuech and Jeff Derby

8:30 – 9:15
Christine A. Wang
American Association for Crystal Growth Award
"Science and Technology of OMVPE for Advanced III-V Semiconductor Materials and Devices"

9:15 – 10:00
Bharat Jalan
American Association for Crystal Growth Young Scientist Award
"Band-Engineered Complex Oxide Interfaces: Role of Defects and Growth Approaches"

10:30 - 12:00 Tuesday, August 1, 2017 Anasazi Ballroom North
Detector Materials (4 of 5)
Moderation: Gautam Gundiah[1]; Mariya Zhuravleva[2]; [1] APL/US, [2]TN/Us

10:30 - 11:00 CONTROLLING SCINTILLATOR PROPERTIES VIA CODOPING: AN OVERVIEW
Chuck Melcher[1]; Merry Koschan[2]; Mariya Zhuravleva[3]; Adam Lindsey[2]; Yuntao Wu[1]; Harold Rothfuss[2]; Fang Meng[2]; Sam Donnald[2]; Kan Yang[2]; Jason Hayward[2]; Lars Eriksson[2]; [1]University of Tennessee, Us, [2]Scintillation Materials Research Center, TN/Us, [3]University of Tennessee, TN/Us

11:00 - 11:15 INFLUENCE OF CODOPING, NON-STOICHIOMETRY AND GA ADMIXTURE ON LUAG:CE SCINTILLATION PROPERTIES
Jan Pejchal[1]; Vladimir Babin[2]; Alena Beitlerova[2]; Romana Kucerkova[2]; Petr Prusa[2]; Dalibor Panek[3]; Tomas Parkman[4]; Kei Kamada[5]; Akira Yoshikawa[6]; [1]Institute of Physics CAS, , [2]Institute of Physics CAS, Cz, [3]faculty of Biomedical Engineering, Czech Technical University, Cz, [4]Faculty of Biomedical Engineering, Czech Technical University, Cz, [5]NICHe, Tohoku University, Jp, [6]Institute for Materials Research, Tohoku University, Jp

11:15 - 11:30 CRYSTAL GROWTH AND TEMPERATURE DEPENDENCE OF LIGHT OUTPUT OF CE-DOPED (GD, LA, Y)$_2$SI$_2$O$_7$ SINGLE CRYSTALS
Takahiko Horiai[1]; Shunsuke Kurosawa[2]; Rikito Murakami[3]; Yasuhiro Shoji[4]; Jan Pejchal[5]; Akihiro Yamaji[4]; Yuji Ohashi[6]; Kei Kamada[6]; Yuui Yokota[7]; Tomohiro Ishizu[8]; Yasuo Ohishi[8]; Taisuke Nakaya[8]; Akira Yoshikawa[4]; [1], , [2]Department of Physics, Yamagata University, Jp, [3]C&A Corporation, Jp, [4]Institute for Materials Research, Tohoku University, Jp, [5]Institute of Physics

CAS, , [6]NICHe, Tohoku University, Jp, [7]Tohoku University, Jp, [8]Hamamatsu Photonics K. K., Jp

11:30 - 11:45 GROWTH AND SCINTILLATION PROPERTIES OF DIRECTIONALLY SOLIDIFIED CE:LABR3/AEBR2 (AE=MG, CA, SR, BA) EUTECTIC SYSTEM
Akria Yoshikawa[1]; Yuki Furuya[2]; Kei Kamada[3]; Hiroyuki Chiba[2]; Shunsuke Kurosawa[4]; Akihiro Yamaji[5]; Yasuhiro Shoji[5]; Yuji Ohashi[3]; Yuui Yokota[6]; [1]IMR, Tohoku Universiry, Jp, [2]Institute for Materials Research (IMR), Jp, [3]NICHe, Tohoku University, Jp, [4]Department of Physics, Yamagata University, Jp, [5]Institute for Materials Research, Tohoku University, Jp, [6]Tohoku University, Jp

11:45 - 12:00 CRYSTAL GROWTH AND SCINTILLATION PROPERTIES OF ND-DOPED $(GD, LA)_2SI_2O_7$ CRYSTAL AS INFRA-RED SCINTILLATOR
Shunsuke Kurosawa[1]; Toetsu Shishido[2]; Takahiko Horiai[2]; Shohei Kodama[3]; Takamasa Sugawara[3]; Kunio Yubuta[2]; Akihiro Yamaji[3]; Yuji Ohashi[4]; Yuui Yokota[5]; Kei Kamada[4]; Akira Yoshikawa[3]; [1]Department of Physics, Yamagata University, Jp, [2]Institute for Materials Research,Tohoku University, Jp, [3]Institute for Materials Research, Tohoku University, Jp, [4]NICHe, Tohoku University, Jp, [5]Tohoku University, Jp

10:30 - 12:00 Tuesday, August 1, 2017 Anasazi Ballroom South
Fundamentals of Crystal Growth (4 of 9)
Moderation: Peter Vekilov, U of Houston/US

10:30 - 11:00 IN-SITU ATOMIC FORCE MICROSCOPY STUDIES OF POLYMER MICELLE-CALCITE INTERACTIONS
Lara Estroff; Coit Hendley; Cornell University, NY/Us

11:00 - 11:30 NUCLEATION AND GROWTH OF CRYSTALLINE CARBONATES FROM AMORPHOUS PRECURSORS
Derk Joester, Northwestern University, IL/Us

11:30 - 12:00 GUINIER-PRESTON ZONES WITHIN A BIOGENIC SINGLE CRYSTAL: A BIOLOGICAL PRESTRESSING STRATEGY
Boaz Pokroy, Technion Institute of Technology, Il

10:30 - 12:00 Tuesday, August 1, 2017 Chapel Room
Symposium on Epitaxy of Complex Oxides (1 of 11)
Moderation: Ho Nyung Lee[1]; Darrel Schlom[2]; Lane Martin[3]; [1]ONRL/US, [2]Cornell/US, [3]Berkeley/US

10:30 - 11:00 ENGINEERING CORRELATED DIRAC ELECTRONS IN $SRIRO_3$/$SRTIO_3$ SUPERLATTICE
HIDENORI Takagi[1]; Daigorou Hirai[2]; Naoka Hiraoka[2]; Jobu Matsuno[3]; [1]Max Planck Institute for Solid State Research, De, [2]Department of Physics, University of Tokyo, Jp, [3]RIKEN, Jp

11:00 - 11:30 EPITAXIAL GROWTH OF LOW VALENCE TRANSITION-METAL OXIDES EXHIBITING NOVEL ELECTRONIC STATES
Akira Ohtomo, Tokyo Institute of Technologuy, Jp

11:30 - 12:00 WHAT TO DO WHEN YOUR IDEAL SINGLE CRYSTAL SUBSTRATE IS NOT AVAILABLE: HOW COMBINATORIAL SUBSTRATE EPITAXY OPENS NEW DOORS TO EPITAXIAL SYNTHESIS.
Paul Salvador[1]; Gregory Rohrer[2]; John Kitchin[2]; Wilfrid Prellier[3]; [1]Carnegie Mellon University, Us, [2]Carnegie Mellon University, PA/Us, [3]Laboratoire CRISMAT, CNRS UMR 6508, ENSICAEN, Universite de Basse-Normandie, Fr

10:30 - 12:00 Tuesday, August 1, 2017 St Francis De Vargas
Bulk Growth & Epitaxy for Power Elect. (1 of 3)
Moderation: Michael Dudley; Balaji Raghothamachar; Stony Brook/US

10:30 - 11:00 EPIGROWTH CHALLENGES FOR HIGH-VOLTAGE SIC POWER DEVICES
James Cooper, Sonrisa Research, Inc., Us

11:00 - 11:30 IMPACT OF TRANSITION METAL IMPURITIES ON NITRIDE DEVICES
Darshana Wickramaratne, Materials Department, UC Santa Barbara, Us

11:30 - 12:00 GROWTH OF GA_2O_3 FOR DEVICE PRODUCTION
Serdal Okur[1]; Nick Sbrockey[2]; Tom Salagaj[2]; Gary Tompa[3]; Yao Yao[4]; Robert Davis[4]; Lisa Porter[4]; Luke Lyle[4]; [1]Structured Materials Industries, Inc., Us, [2]Structured Materials Industries, NJ/Us, [3]Structured Materials Industries, Inc., NJ/Us, [4]Carnegie Mellon University, Us

10:30 - 12:00 Tuesday, August 1, 2017 Zia Ballroom
3rd Symposium on 2D Electronic Materials (4 of 6)
Moderation: Kurt Gaskill[1]; JoanM. Redwing[2]; [1]NRL/US, [2]PennState/US

10:30 - 11:00 NUCLEATION AND GROWTH OF WSE_2: ENABLING LARGE GRAIN TRANSITION METAL DICHALCOGENIDES
Christopher Hinkle, University of Texas at Dallas, TX/Us

11:00 - 11:20 NUCLEATION AND GROWTH KINETICS OF MONOLAYER TUNGSTEN DISELENIDE (WSE_2) FILMS ON SAPPHIRE
Xiaotian Zhang; Tanushree Choudhury; Bhakti Jariwala; Fu Zhang; Nasim Alem; Joshua Robinson; Joan Redwing; The Pennsylvania State University, PA/Us

11:20 - 11:40 ATOMIC LAYER AND METALORGANIC CHEMICAL VAPOR DEPOSITION OF MOS_2 AND WS_2 FROM BIS(TERT-BUTYLIMIDO)-BIS(DIALKYLAMIDO) COMPOUNDS
Berc Kalanyan[1]; James Maslar[2]; William Kimes[3]; Brent Sperling[3]; Ravindra Kanjolia[4]; [1]National Institute of Standards and Technology, Us, [2]NIST, Us, [3]National Institute of Standards and Technology, MD/Us, [4]EMD Performance Materials, Us

11:40 - 12:00 EFFECT OF SAPPHIRE SUBSTRATE ORIENTATION ON NUCLEATION AND GROWTH OF TRANSITION METAL DICHALCOGENIDES
Tanushree Choudhury; Xiaotian Zhang; Joan Redwing; The Pennsylvania State University, PA/Us

13:30 - 15:00 Tuesday, August 1, 2017 Anasazi Ballroom North
Detector Materials (5 of 5)
Moderation: Gautam Gundiah[1]; Mariya Zhuravleva[2]; [1] APL/US, [2]TN/Us

13:30 - 13:45 **FLOATING-ZONE CRYSTAL GROWTH AND CHARACTERIZATION OF THE SCINTILLATOR $MG_4TA_2O_9$**
Dongsheng Yuan[1]; Didier Perrodin[2]; Tetiana Shalapska[3]; Edith Bourret[2]; Gregory Bizarri[2]; [1]Lawrence Berkeley National Lab, Us, [2]Lawrence Berkeley National Laboratory, CA/Us, [3]Lawrence Berkeley National Laboratory, Us

13:45 - 14:00 HYDROTHERMAL GROWTH AND CHARACTERIZATION OF UO2 SINGLE CRYSTALS GROWN ON NON-NATIVE SUBSTRATES
Martin Kimani[1]; James Mann[2]; Karl Rickert[3]; James Petrosky[4]; David Turner[2]; [1]KBRWyle Aerospace Group, CA/Us, [2]Air Force Research Laboratory, OH/Us, [3]Oak Ridge Institute for Science and Education, TN/Us, [4]Air Force Institute of Technology, OH/Us

14:00 - 14:15 GROWTH AND OPTICAL PROPERTIES OF CR-DOPED BETA-GA_2O_3 CRYSTALS AS RED AND INFRARED SCINTILLATOR BY THE FLOATING ZONE METHOD

Shunsuke Kurosawa[1]; Toetsu Shishido[2]; Akihiro Yamaji[2]; Takahiko Horiai[3]; Shohei Kodama[2]; Takamasa Sugawara[2]; Akiko Nomura[2]; Kunio Yubuta[2]; Yuji Ohashi[4]; Yuui Yokota[5]; Kei Kamada[4]; Akira Yoshikawa[2]; Akimasa Ohnishi[6]; Mamoru Kitaura[6]; [1]Department of Physics, Yamagata University, Jp, [2]Institute for Materials Research, Tohoku University, Jp, [3], , [4]NICHe, Tohoku University, Jp, [5]Tohoku University, Jp, [6]Faculty of Science, Yamagata University, Jp

14:15 - 14:30 HYDROTHERMAL GROWTH OF THO2, UXTH1-XO2 AND UO2 SINGLE CRYSTALS FOR NEUTRON DETECTION
James Mann[1]; Martin Kimani[2]; Christina Dugan[3]; Christopher Young[4]; Karl Rickert[5]; James Petrosky[4]; [1]Air Force Research Laboratory, OH/Us, [2]KBRWyle Aerospace Group, CA/Us, [3]Air Force Institute of Technology, Us, [4]Air Force Institute of Technology, OH/Us, [5]Oak Ridge Institute for Science and Education, TN/Us

14:30 - 14:45 SOLUTION GROWTH AND SCINTILLATION PROPERTIES OF 9-PHENYLCARBAZOLE
Edgar Van Loef; Gary Markosyan; Urmila Shirwadkar; Mickel McClish; Kanai Shah; RMD, MA/Us

14:45 - 15:00 RECENTLY DEVELOPED UNIDIRECTIONAL ORGANIC SINGLE CRYSTAL CYLINDERS FOR SCINTILLATOR APPLICATION
Krishnasamy Sankaranarayanan, Alagappa University, In

13:30 - 15:00 Tuesday, August 1, 2017 Anasazi Ballroom South
Fundamentals of Crystal Growth (5 of 9)
Moderation: Peter Vekilov, U of Houston/US

13:30 - 14:00 IN-SITU OBSERVATION OF ICE CRYSTAL SURFACES AT THE MOLECULAR LEVEL BY ADVANCED OPTICAL MICROSCOPY
Gen Sazaki; Ken-ichiro Murata; Masahiro Inomata; Jialu Chen; Ken Nagashima; Yoshinori Furukawa; Institute of Low Temperature Science, Hokkaido University, Jp

14:00 - 14:30 FORMATION AND PROPOGATION OF MACROSTEPS IN THE PRESENCE OF IMPURITIES
James Lutsko[1]; Mike Sleutel[2]; Alexander Van Driessche[3]; [1]Universite Libre de Bruxelles, Be, [2]Vrije Universiteit Brussel, Be, [3]Univ. Grenoble Alpes, Fr

14:30 - 14:45 NUCLEATION AND GROWTH OF TWO-DIMENSIONAL ISLANDS OF COLLOIDAL CRYSTALS
Jun Nozawa[1]; Satoshi Uda[2]; Suxia Guo[1]; Junpei Okada[2]; Haruhiko Koizumi[1]; [1]Institute for Materials Research, Tohoku University, Jp, [2]Tohoku University, Jp

14:45 - 15:00 HERRING'S SCALING LAW OF DIFFUSION REVISITED
Marek Petrik, Philipps University, De

13:30 - 15:00 Tuesday, August 1, 2017 Chapel Room
Symposium on Epitaxy of Complex Oxides (2 of 11)
Moderation: Ho Nyung Lee[1]; Darrel Schlom[2]; Lane Martin[3]; [1]ONRL/US, [2]Cornell/US, [3]Berkeley/US

13:30 - 14:00 NEW STRAIN STATES IN EPITAXIAL COMPLEX OXIDES
Judith Macmanus-Driscoll[1]; Ady Suwardi[1]; Haiyan Wang[2]; Aiping Chen[3]; Quanxi Jia[4]; [1]University of Cambridge, Gb, [2]Purdue University, Us, [3]CINT, Los Alamos, NM/Us, [4]Univ. at Buffalo, SUNY, Department of Materials Design and Innovation, NY/Us

14:00 - 14:30 DOPANT SITE STRUCTURE ANALYSIS IN PEROVSKITES
Mikk Lippmaa, Institute for Solid State Physics, University of Tokyo, Jp

14:30 - 15:00 PROBING INTERFACIAL SUPERCONDUCTIVITY IN FE-BASED SUPERCONDUCTORS BY IN-SITU ARPES
Hong Ding, Institute of Physics, Chinese Academy of Sciences, Cn

13:30 - 15:00 Tuesday, August 1, 2017 Zia Ballroom
3rd Symposium on 2D Electronic Materials (5 of 6)
Moderation: Kurt Gaskill[1]; JoanM. Redwing[2]; [1]NRL/US, [2]PennState/US

13:30 - 14:00 GROWTH-MICROSTRUCTURE-(ELECTRONIC)PROPERTY CORRELATIONS IN 2D MATERIALS.
Srinivasan Raghavan, Indian Institute of Science, In

14:00 - 14:20 GROWTH OF LARGE-AREA, SINGLE-CRYSTAL GRAPHENE AND GRAPHENE BILAYERS FOR ELECTRONIC DEVICES
Yufeng Hao, Nanjing University,

14:20 - 14:40 SYNTHESIS AND CHARACTERIZATION OF GRAPHENE BASED THERMOACOUSTIC DEVICES
Nick Sbrockey[1]; Tom Salagaj[1]; Thottam Kalkur[2]; Gary Tompa[3]; [1]Structured Materials Industries, NJ/Us, [2]University of Colorado at Colorado Springs, Us, [3]Structured Materials Industries, Inc., NJ/Us

14:40 - 15:00 MECHANISMS OF HYDROGEN INTERCALATION IN EPITAXIAL GRAPHENE

Kevin Daniels[1]; Anthony Boyd[2]; Anindya Nath[3]; Rachael Myers-Ward[2]; Kurt Gaskill[4]; [1]U.S. Naval Research Laboratory, Us, [2]US Naval Research Laboratory, DC/Us, [3]George Mason University, VA/Us, [4],

15:30 - 17:00 Tuesday, August 1, 2017 Anasazi Ballroom North

Industrial Crystal Growth Technologies and Equipment (1 of 2)

Moderation: Matt Whittaker, Gooch & Housego/US

15:30 - 16:00 ADVANCES IN SINGLE-CRYSTAL FIBERS AND THIN RODS GROWN BY LASER HEATED PEDESTAL GROWTH

Gisele Maxwell, shasta crystals inc., Us

16:00 - 16:15 MARKET TREND IN THE SAPPHIRE INDUSTRY AND A DISCUSSION FOR DEVELOPMENT DIRECTION

Jongkwan Park; Matthew Jensen; Ryan Loquist; Clark Blockburger; Matthew Montgomery; Rubicon Technology, IL/Us

16:15 - 16:30 SINGLE CRYSTAL GROWTH OF SUBMILLIMETRE DIAMETER SAPPHIRE TUBE BY THE MICRO-PULLING DOWN METHOD FOR ULTRASOUND-FACILITATED DRUG DELIVERY SYSTEM

Kei Kamada[1]; Vladimir Kochurikhin[2]; Gushchina Liudmila[2]; Mikhail Ivanov[2]; Yasuhiro Shoji[3]; Shunsuke Kurosawa[4]; Yuji Ohashi[1]; Yuui Yokota[5]; Akira Yoshikawa[3]; [1]NICHe, Tohoku University, Jp, [2]General Physics Institute, Russian Academy of Sciences, Ru, [3]Institute for Materials Research, Tohoku University, Jp, [4]Department of Physics, Yamagata University, Jp, [5]Tohoku University, Jp

16:30 - 16:45 UNIDIRECTIONAL SOLIDIFICATION OF IR/IR-RH FIBER CRYSTALS FOR THERMOCOUPLE BY ALLOY-MICRO-PULLING DOWN METHOD

Rikito Murakami[1]; Yuui Yokota[2]; Kei Kamada[3]; Yasuhiro Shoji[4]; Shunsuke Kurosawa[5]; Yuji Ohashi[3]; Akihiro Yamaji[4]; Akira Yoshikawa[4]; [1]C&A Corporation, Jp, [2]Tohoku University, Jp, [3]NICHe, Tohoku University, Jp, [4]Institute for Materials Research, Tohoku University, Jp, [5]Department of Physics, Yamagata University, Jp

16:45 - 17:00 CRYSTALLIZATION OF ALPHA-LACTOSE MONOHYDRATE (α-LM) FROM AQUEOUS SOLUTION USING DIFFERENT ORGANIC SOLVENTS
P Parimaladevi; K Vinodhini; Srinivasan Karuppannan; Bharathiar University, In

15:30 – 16:30 Tuesday, August 1, 2017 Anasazi Ballroom South
Fundamentals of Crystal Growth (6 of 9)
Moderation: Peter Vekilov, U of Houston/US

15:30 - 16:00 COLLOIDAL NANOSTRUCTURES: IN-SITU ELECTRON MICROSCOPY OF PLASMON-MEDIATED SYNTHESIS, CHEMISTRY AND SELF-ASSEMBLY
Eli Sutter, ,

16:00 - 16:30 STEP MORPHOLOGY OF 2D ISLANDS ON THE (110) FACE OF LYSOZYME CRSYTALS GROWN IN SPACE
Katsuo Tsukamoto[1]; Hitoshi Miura[2]; Hironori Hondoh[3]; [1]Osaka University, Jp, [2]Nagoya City University, Jp, [3]Hiroshima University, Jp

15:30 - 17:30 Tuesday, August 1, 2017 Chapel Room
Symposium on Epitaxy of Complex Oxides (3 of 11)
Moderation: Ho Nyung Lee[1]; Darrel Schlom[2]; Lane Martin[3]; [1]ONRL/US, [2]Cornell/US, [3]Berkeley/US

15:30 - 16:00 ADVANCED PULSED LASER DEPOSITION
Gertjan Koster, University of Twente, Nl

16:00 - 16:30 SYNTHESIS OF FREESTANDING SINGLE-CRYSTAL OXIDE THIN FILMS AND HETEROSTRUCTURES
Yasuyuki Hikita, SLAC National Accelerator Laboratory, Us

16:30 - 16:45 NON-EQUILIBRIUM SYNTHESIS OF HIGHLY POROUS SINGLE-CRYSTALLINE OXIDE NANOSTRUCTURES
Dongkyu Lee[1]; Xiang Gao[1]; Lisah Fan[1]; Erjia Guo[1]; Thomas Farmer[1]; William Heller[1]; Michael Fitzsimmons[1]; Matthew Chisholm[2]; Ho Nyung Lee[1]; [1]Oak Ridge National Laboratory, TN/Us, [2]Oak Ridge National Laboratory, Us

16:45 - 17:00 TUNING FUNCTIONAL PROPERTIES IN OXIDE NANOCOMPOSITES
Aiping Chen[1]; Erik Enriquez[1]; Haiyan Wang[2]; Judith Macmanus-Driscoll[3]; Quanxi Jia[4]; [1]CINT, Los Alamos, NM/Us, [2]Purdue University, Us, [3]University

of Cambridge, Gb, [4]Univ. at Buffalo, SUNY, Department of Materials Design and Innovation, NY/Us

17:00 - 17:30 CATION STOICHIOMETRY CONTROL FOR HIGH-QUALITY EPITAXY OF COMPLEX OXIDES BY PULSED LASER DEPOSITION
Tsuyoshi Ohnishi, National Institute for Materials Science,

15:30 - 17:20 Tuesday, August 1, 2017 Zia Ballroom
3rd Symposium on 2D Electronic Materials (6 of 6)
Moderation: Kurt Gaskill[1]; JoanM. Redwing[2]; [1]NRL/US, [2]PennState/US

15:30 - 16:00 GRAPHENE QUANTUM RESISTANCE STANDARD
Alexander Tzalenchuk, National Physical Laboratory, Gb

16:00 - 16:30 POLYMER ASSISTED SUBLIMATION GROWTH OF EPITAXIAL GRAPHENE FOR QUANTUM RESISTANCE METROLOGY
Mattias Kruskopf[1]; Davood Momeni Pakdehi[1]; Klaus Pierz[1]; Stefan Wundrack[1]; Rainer Stosch[1]; Thorsten Dziomba[1]; Martin Götz[1]; Jens Baringhaus[1]; Johannes Aprojanz[2]; Christoph Tegenkamp[2]; Jakob Lidzba[3]; Thomas Seyller[3]; Frank Hohls[1]; Franz Ahlers[1]; Hans Schumacher[1]; [1]Physikalisch-Technische Bundesanstalt, De, [2]Institute of Solid State Physics of Leibniz Universität Hannover, De, [3]Institute of Physics of Technische Universität Chemnitz, De

16:30 - 16:50 IMPACT OF QUASI-FREE STANDING GRAPHENE EPITAXIAL GRAPHENE ON TERAHERTZ OPTOELECTRONICS
D Gaskill[1]; Kevin Daniels[2]; M Jadidi[3]; A Shuskov[3]; A Boyd[1]; A Nath[4]; R L Myers-Ward[1]; T Murphy[3]; H D Drew[3]; [1]Naval Research Laboratory, DC/Us, [2]U.S. Naval Research Laboratory, Us, [3]University of Maryland, MD/Us, [4]George Mason University, VA/Us

16:50 - 17:20 FORMATION OF GRAPHENE NANORIBBONS AND SHEETS BY DIFFUSION OF CARBON IN LIQUID METALS INDUCED BY ELECTROCHARGING ASSISTED PROCESS
Lourdes Salamanca-Riba[1]; Xiaoxiao Ge[2]; Liangbing Hu[2]; Oded Rabin[2]; Manfred Wuttig[2]; Balu Balachandran[3]; Daniel Cole[4]; [1]University of Maryland, Us, [2]University of Maryland, MD/Us, [3]Argonne National Laboratory, IL/Us, [4]Army Research Laboratory, MD/Us

17:00 - 19:00	Tuesday, August 1, 2017 Poster Session (2 of 2)	Eldorado Grand Ballroom

P2-1 SUBMILLIMETER-SIZED NATAO3 SINGLE CRYSTALS GROWN VIA COOLING OF NA_2MOO_4 FLUX

Sayaka Suzuki[1]; Haruka Saito[2]; Tetsuya Yamada[3]; Katsuya Teshima[3]; [1]Faculty of Engineering, Shinshu University, Jp, [2]Graduate School of Science and Technology, Shinshu University, Jp, [3]Center for Energy and Environmental Science, Shinshu University, Jp

P2-2 GROWTH ANGLE - A MICROSCOPIC VIEW

Konstantin Mazuruk[1]; Martin Volz[2]; Arnold Croll[1]; [1]University of Alabama in Huntsville, AL/Us, [2]NASA Marshall Space Flight Center, AL/Us

P2-3 POTASSIUM-COBALT SULFIDE CRYSTAL GROWTH ASSISTED BY LOW FREQUENCY VIBRATIONS

Andrey Sadovskiy[1]; Ivan Ermochenkov[2]; Evgeniya Dubovenko[2]; Marina Zykova[2]; Ekaterina Sukhanova[2]; Igor Avetissov[2]; [1]IPG, Ru, [2]Dmitry Mendeleev Univeristy of Chemical Technology of Russia, Ru

P2-4 INVESTIGATION OF ENHANCED ROOM TEMPERATURE FERROMAGNETISM IN CO DOPED SNO_2 NANOPARTICLES

Rajan Renu[1]; R Ezhil Vizhi[1]; D Rajan Babu[2]; H Arul[3]; [1]VIT University, In, [2]Advanced Materials Research Centre, Department of Physics, School of Advanced Sciences, VIT University, In, [3]Kumaraguru Institute of Technology, In

P2-5 CALCIUM CARBONATE IN THE SUGAR TECHNOLOGY

Evzen Sarka; Zdenek Bubnik; University of Chemistry and Technology, Prague, Cz

P2-6 ANALYSIS OF VERTICAL GRADIENT FREEZE (VGF) PROCESS SCALE-UP FOR THE GROWTH OF CADMIUM ZINC TELLURIDE (CZT) SINGLE-CRYSTAL, LARGE-AREA SUBSTRATES

John Roerig[1]; Nathan Morgan[1]; Kelly Jones[2]; Scott Johnson[2]; Jeffrey Derby[1]; [1]University of Minnesota, MN/Us, [2]Raytheon Vision Systems, CA/Us

P2-7 POCESSING OF CONCENTRATED SOLAR RADIATION PV MODULES ON THE BASIS OF ALGAAS-GAAS HETEROSTRUCTURES

Ia Trapaidze[1]; Gela Goderdzishvili[1]; Lia Trapaidze[2]; Rafiel Chikovani[1]; [1]Dep. of Physics, Georgian Technical University, Ge, [2]Dep. orf Physics, Tbilisi State Univeristy, Ge

P2-8 AXIAL VIBRATION CONTROL TECHNIQUE FOR CRYSTAL GROWTH FROM LIQIUD

Andrey Sadovskiy[1]; Vladimir Kostikov[2]; Ekaterina Sukhanova[3]; Igor Avetissov[3]; [1]IPG, Ru, [2]Dmitry Mendeleev University of Chemical Technology of Russia, Ru, [3]Dmitry Mendeleev Univeristy of Chemical Technology of Russia, Ru

P2-9 MONTE CARLO STUDY OF THE GROWTH KINETICS DURING MBE OF GAAS ON THE SUBSTRATES WITH DIFFERENT ORIENTATIONS

Maxim Solodovnik; Sergey Balakirev; Oleg Ageev; Ilya Mikhaylin; Mikhail Eremenko; Southern Federal University, Ru

P2-10 MODELING THE DEFECT STRUCTURE OF GROWING CRYSTAL USING THE VLASOV MODEL FOR SOLIDS

Vitalyi Igorevich Talanin; Igor Evgenievich Talanin; Vladislav Igorevich Lashko; Department of Computer Science & Software Engineering, Institute of Economics & Information Technology, Ua

P2-11 GROWTH OF ZNO NANOROD ARRAYS ON PATTERNED SUBSTRATES

Jan Grym; Ondřej Černohorský; Roman Yatskiv; Šárka Chlupová; Antonín Schenk; Nikola Bašinová; David Roesel; Jan Vaniš; Stanislav Tiagulskyi; Institute of Photonics and Electronics of the CAS, Cz

P2-12 KINETIC MONTE CARLO MODEL OF DROPLET EPITAXY FOR IN/GAAS(001) NANOSTRUCTURES: EXPERIMENTS AND THEORY

Sergey Balakirev; Maxim Solodovnik; Oleg Ageev; Mikhail Eremenko; Ilya Mikhaylin; Southern Federal University, Ru

P2-13 SYNTHESIS OF WATER SOLUBLE, LUMINESCENT LFNH NANOCRYSTALS FOR BIOLOGICAL APPLICATIONS

Mahendra Khandpekar[1]; Tarannum Attar[2]; [1]Birla College of Arts, Science & Commerce, In, [2]G M Momins College of ASC, In

P2-14 HOT-PRESSED PRODUCTION AND LASER PROPERTIES OF FE^{2+}:ZNS AND FE^{2+}:ZNSE

Roman Avetisov[1]; Stanislav Balabanov[2]; Konstantin Firsov[3]; Evgenii Gavrishchuk[2]; Andrey Gladilin[3]; Vladimir Ikonnikov[2]; Viktor Kalinushkin[3]; Igor Kononov[3]; Oleg Uvarov[3]; Marina Zykova[1]; Elena Mozhevitina[1]; Dmitry Savin[2]; Natalia Timofeeva[2]; Igor Avetissov[1]; [1]Dmitry Mendeleev Univeristy of Chemical Technology of Russia, Ru, [2]G.G. Devyatykh Institute of Chemistry of High-Purity Substances of the RAS, Ru, [3]Prokhorov General Physics Institute, Russian Academy of Sciences, Ru

P2-15 GROWTH OF SCHEELITE-LIKE DISORDERED DOUBLE MOLYBDATE AND TUNGSTATE SINGLE CRYSTALS FROM STOICHIOMETRIC AND NON-STOICHIOMETRIC MELTS

Kirill Subbotin[1]; Denis Lis[2]; Valerii Voronov[1]; Anatolii Titov[1]; Valerii Senin[3]; Viktoriia Sanina[2]; Evgenii Zharikov[2]; [1]A.M.Prokhorov General Physics Institute Russian Academy of Sciences, Ru, [2]A.M.Prokhorov General Physics Institute of Russian Academy of Sciences, Ru, [3]Vernadsky Institute of Geochemistry and Analytical Chemistry RAS, Ru

P2-16 INFLUENCE OF RAW MATERIALS' PURITY ON GROWTH AND PROPERTIES OF β-BBO CRYSTALS

Andrey Sadovskiy[1]; Marina Zykova[2]; Elena Mozhevitina[2]; Andrew Khomyakov[2]; Alexander Ostrovskiy[3]; Roman Avetisov[2]; Alexander Yurkin[3]; Igor Avetissov[2]; [1]IPG, Ru, [2]Dmitry Mendeleev Univeristy of Chemical Technology of Russia, Ru, [3]Crystals of Sybiria Ltd., Ru

P2-17 GROWTH AND CHARACTERIZATION OF PHTHALIC ACID CRYSTALS IN PRESENCE OF HEXAMETHYLENETETRAMINE

Subbiah Meenakshisundaram; C Balakrishnan; S Sivaraman; R Markkandan; RM Sockalingam; Annamalai university, In

P2-18 GROWTH AND CHARACTERIZATION OF DIAQUATETRAKIS (1H-IMIDAZOLE-KN3)- MAGNESIUM DICHLORIDE SINGLE CRYSTAL

H Arul[1]; Nagaradona Suneetha[2]; D Rajan Babu[3]; R Ezhil Vizhi[3]; [1]Department of Science and Humanities, Kumaraguru College of Technology (Autonomous),, In, [2]VIT University, In, [3]Advanced Materials Research Centre, Department of Physics, School of Advanced Sciences, VIT University, In

P2-19 CYCLOHEXYLAMMONIUM CINNAMATE SINGLE CRYSTAL FOR NONLINEAR OPTICAL APPLICATIONS

R Gomathi[1]; S Madeswaran[1]; D Rajan Babu[1]; H Arul[2]; [1]Advanced Materials Research Centre, Department of Physics, School of Advanced Sciences, VIT University, In, [2]Department of Science and Humanities, Kumaraguru College of Technology (Autonomous),, In

P2-20 PECULIARITIES OF BULK BAY_2F_8 SINGLE CRYSTALS GROWTH FOR OBTAINING LUMINESCENCE IN THE UV REGION.

Anastasiia Uvarova[1]; Aleksandr Pushkar[2]; [1], Ru, [2]Doctor Web, Ru

P2-21 SINGLE-CRYSTAL FIBER OF TETRAPHENYLPHOSPHONIUM BROMIDE FOR STIMULATED RAMAN SCATTERING

YAN Ren[1]; GUANG QIANG Wang[2]; XU TANG Tao[2]; [1]INSTITUTE OF CRYSTAL MATERIALS, Cn, [2]INSTITUTE OF CRYSTAL MATERIALS SHANDONG UNIVERSITY, Cn

P2-22 MULTIFRACTAL SPECTRUM INVARIANCE OF SPATIAL NANOFORMS ON THE SURFACE OF ZNXCD1-XTE-SI HETEROSTRUCTURES SYNTHESIZED BY VARIOUS TECHNOLOGIES.

Vladimir Kuznetsov[1]; Pavel Moskvin[2]; Vlad Rudnitskiy[2]; [1]Saint-Petersburg State Electrotechnical University, Ru, [2]Zhytomyr state technology University, Ua

P2-23 OPTIMIZATION OF THE INTERFACIAL MISFIT ARRAY GROWTH MODE OF GASB EPILAYERS ON GAAS SUBSTRATE

Djalal Benyahia[1]; Łukasz Kubiszyn[2]; Krystian Michalczewski[1]; Artur Kębłowski[2]; Piotr Martyniuk[1]; Józef Piotrowski[2]; Antoni Rogalski[1]; [1]Military University of technology, Pl, [2]Vigo System S.A., Pl

P2-24 EX-SITU PROFILING OF TIO_2 FILM GROWTH USING SYNCHROTRON RADIATION

Kyle Kulinski[1]; Daniel Steckhahn[2]; Brandon Gunn[2]; Chris Tassone[3]; Andrew Ichimura[1]; [1]San Francisco State University, Us, [2]San Francisco State University, CA/Us, [3]Stanford Synchrotron Radiation Lightsource, CA/Us

P2-25 ELECTRICAL CHARACTERIZATION OF ALD DEPOSITED PBTIO3 THIN FILMS

Nick Sbrockey[1]; Gary Tompa[2]; Aaron Welsh[3]; Jung Yang[3]; Susan Trolier-Mckinstry[3]; Ronald Polcawich[4]; Daniel Potrepka[4]; [1]Structured Materials Industries, NJ/Us, [2]Structured Materials Industries, Inc., NJ/Us, [3]Penn State University, Us, [4]U.S. Army Research Laboratory, Us

P2-26 ANALYSIS OF THE FLOATING SILICON METHOD (FSM) FOR THE HORIZONTAL GROWTH OF CRYSTALLINE SILICON RIBBONS

Kerry Wang[1]; Jeffrey Derby[2]; [1]University of Minnesota - Twin Cities, MN/Us, [2]University of Minnesota, MN/Us

P2-27 GROWTH OF VERY THIN AL_2O_3 LAYER BY ATOMIC LAYER DEPOSITION AND ITS MODULATION OF ELECTRICAL PROPERTIES IN METAL/INP CONTACTS

Hogyoung Kim; Byung Joon Choi; Seoul National University of Science and Technology, Kr

19:00 - 21:00 Tuesday, August 1, 2017 Anasazi Ballroom South
OMVPE of Compound Semiconductors
Moderation: Masakazu Sugiyama, University of Tokyo/JP

19:00 - 19:20 III-V NANO-RIDGE GROWTH ON (001) SI FOR OPTOELECTRONICS
Bernardette Kunert[1]; Yves Mols[1]; Yuting Shi[2]; Dries Van Thourhout[2]; Marianna Pantouvaki[1]; Joris Van Campenhout[1]; Robert Langer[2]; [1]Imec, Be, [2]INTEC Department Ghent University, Be

19:20 - 19:40 DEGRADATION BEHAVIOR OF LASER DIODES WITH HIGHLY STRAINED INGAAS QWS WITH EMISSION WAVELENGTH BETWEEN 1120 NM AND 1180 NM
Frank Bugge; Gunnar Blume; David Feise; Nils Werner; Katrin Paschke; Markus Weyers; Ferdinand-Braun-Institut, De

19:40 - 20:00 EXTREMELY RAPID GAAS GROWTH BY MOVPE FOR LOW-COST PV APPLICATIONS
Akinori Ubukata[1]; Hassanet Sodabanlu[2]; Kentaroh Watanabe[2]; Syuichi Koseki[1]; Yoshiki Yano[1]; Toshiya Tabuchi[1]; Takeyoshi Sugaya[3]; Koh Matsumoto[1]; Yoshiaki Nakano[2]; Masakazu Sugiyama[2]; [1]Taiyo Nippon Sanso, Jp, [2]The university of Tokyo, Jp, [3]National Institute of advanced industrial science and technology, Jp

20:00 - 20:20 SETUP FOR IN-SITU ELECTRON MICROSCOPIC STUDIES OF SEMICONDUCTOR GROWTH
Kerstin Volz, Philipps-University Marburg, De

20:20 - 20:40 PHOTOLUMINESCENCE EXCITATION SPECTROSCOPY OF ANTIMONY DONORS IN ZINC OXIDE
Simon Watkins[1]; Faezeh Mohammadbeigi[2]; Senthil Kumar[1]; Katrina Stirling[1]; [1]Department of Physics, Simon Fraser University, BC/Ca, [2]Department of Physics, SimonFraser University, BC/Ca

20:40 - 21:00 SPATIO-TIME-RESOLVED CATHODOLUMINESCENCE STUDY OF THICK III-POLAR AND N-POLAR INGAN
Zakaria Al Balushi[1]; Joan Redwing[2]; [1]Dept. of Materials Science and Eng., The Pennsylvania State University, PA/Us, [2]The Pennsylvania State University, PA/Us

Wednesday, August 2, 2017
Day at a glance

	Wednesday 8/2				
Room	Anasazi South	Anasazi North	Chapel Room	Zia	Eldorado (A+B)
7:30-8:00	BREAKFAST				
8:00-10:00	FUNDAMENTALS 7	THIN FILMS 1	Symp Epi Com. Oxide 4	FERRO & TEXTURE CERAMICS 1	VENDOR
10:00-10:30	COFFEE BREAK				
10:30-12:00	FUNDAMENTALS 8	THIN FILMS 2	Symp Epi Com. Oxide 5	BULK 1	VENDOR
12:00-13:30	EXCURSIONS				
13:30-15:00					
15:00-15:30					
15:30-17:00					
17:00-17:30					
17:30-18:00					
18:00-19:00					
19:00-21:00					RECEPTION/ BANQUET

Wednesday, August 2, 2017

08:00 - 10:00 Thin Film Growth, Epitaxy, and Superlattices (1 of 2) Anasazi Ballroom North

Moderation: Andrey Krysa[1]; Toby Garrod[2]; [1]U of Sheffield/GB, [2]II-VI/US

08:00 - 08:30 GROWTH, STABILITY, AND APPLICATIONS OF $GAAS_{1-x}BI_x$ MATERIALS THROUGH THE LENS OF MICROSTRUCTURAL DE VELOPMENT

Susan Babcock[1]; Thomas Kuech[2]; Luke Mawst[3]; Dane Morgan[2]; Weixin Chen[4]; Kamran Forghani[1]; Yingxin Guan[2]; Honghyuk Kim[1]; Guangfu Luo[2]; Adam Wood[1]; [1]University of Wisconsin-Madison, WI/Us, [2]University of Wisconsin Madison, Us, [3]University of Wisconsin-madison, WI/Us, [4]Department of Materials Science and Engineering, University of Wisconsin-Madison, WI/Us

08:30 - 09:00 EPITAXIAL GROWTH OF III-V QUANTUM DOT LASERS ON SILICON SUBSTRATES FOR SILICON PHOTONICS

Huiyun Liu, University College London, Gb

09:00 - 09:20 INTERFACE ANALYSIS FOR STRAINED LAYER SUPERLATTICES BY ATOM PROBE TOMOGRAPHY

Ayushi Rajeev[1]; Weixin Chen[2]; Jeremy Kirch[3]; Susan Babcock[3]; Luke Mawst[4]; Thomas Kuech[5]; Tom Earles[6]; [1]University of Wisconsin Madison, WI/Us, [2]Department of Materials Science and Engineering, University of Wisconsin-Madison, WI/Us, [3]University of Wisconsin-Madison, WI/Us, [4]University of Wisconsin-madison, WI/Us, [5]University of Wisconsin Madison, Us, [6]Intraband LLC, WI/Us

09:20 - 09:40 SUBSTRATE EVALUATION FOR HIGH QUALITY BORON PHOSPHIDE GROWTH

Yu Yang[1]; Xuejing Wang[2]; Jianqiu Guo[3]; Balaji Raghothamachar[3]; Michael Dudley[3]; Balabalaji Padavala[4]; Clint Frye[4]; James Edgar[4]; [1]Stony Brook University, , [2]Purdue University, Us, [3]Stony Brook University, NY/Us, [4]Kansas State University, Us

09:40 - 10:00 GROWTH, TRANSFER, AND CHARACTERIZATION OF GE AND SIGE NANOMEMBRANES ON III-V SUBSTRATES

Abhishek Bhat[1]; Xiaorui Cui[1]; Yingxin Guan[2]; Shelley Scott[1]; Thomas Kuech[2]; Max Lagally[1]; [1]University of Wisconsin-Madison, Us, [2]University of Wisconsin Madison, Us

08:00 - 10:00 Wednesday, August, 2, 2017 Anasazi Ballroom South
Fundamentals of Crystal Growth (7 of 9)
Moderation: Peter Vekilov, U of Houston/US

08:00 - 08:30 THE SYNERGY OF MODELING AND NOVEL EXPERIMENTS FOR MELT CRYSTAL GROWTH RESEARCH
Jeffrey Derby, University of Minnesota, MN/Us

08:30 - 09:00 STRUCTURE OF SOLID-LIQUID GROWTH INTERFACES: GAN-GA AND SI/GE-IN
Elias Vlieg[1]; Aryan De Jong[1]; Vedran Vonk[2]; [1]Radboud University, Institute for Molecules and Materials, Nl, [2]DESY, De

09:00 - 09:30 GROWTH OF MOLECULAR SYSTEMS
Frank Schreiber, Tuebingen University, De

09:30 - 09:45 DISLOCATION AIDED ORIENTATION ALIGNMENT DURING INITIAL STAGES OF CRYSTAL GROWTH
Amit Samanta; Andrew Lange; Tammy Olson; Selim Elhadj; Lawrence Livermore National Laboratory, CA/Us

09:45 - 10:00 TWINNING DURING CZOCHRALSKI GROWTH OF HEAVILY-DOPED, DISLOCATION-FREE SINGLE CRYSTAL SILICON
Joel Kearns, NASA John H. Glenn Research Center, OH/Us

08:00 - 10:00 Wednesday, August, 2, 2017 Chapel Room
Symposium on Epitaxy of Complex Oxides (4 of 11)
Moderation: Ho Nyung Lee[1]; Darrel Schlom[2]; Lane Martin[3]; [1]ONRL/US, [2]Cornell/US, [3]Berkeley/US

08:00 - 08:15 HIGH MOBILITY BASNO3 FILMS GROWN BY MOLECULAR BEAM EPITAXY AND FIELD EFFECT TRANSISTOR
Jisung Park[1]; Hanjong Paik[2]; Debdeep Jena[3]; Darrell Schlom[2]; [1]Department of Material Science and Engineering, Cornell University, Us, [2]School of Electrical and Computer Engineering, Cornell University,, NY/Us, [3]Department of Material Science and Engineering, Cornell University, NY/Us

08:15 - 08:30 **ADSORPTION-CONTROLLED GROWTH OF LA-DOPED $BASNO_3$BY MOLECULAR-BEAM EPITAXY**
Hanjong Paik[1]; Zhen Chen[2]; Edward Lochocki[3]; Ariel Seidner[4]; Amit Verma[5]; Nicholas Tanen[4]; Jisung Park[4]; Masaki Uchida[6]; ShunLi Shang[7]; Bi-Cheng Zhou[7]; Zi-Kui Liu[7]; Debdeep Jena[8]; Kyle Shen[3]; David Muller[9]; Darrell Schlom[9]; [1]School of Electrical and Computer Engineering, Cornell University,,

NY/Us, [2]Applied and Engineering Physics, Cornell University, NY/Us, [3]Department of Physics, Cornell University, Us, [4]Department of Material Science and Engineering, Cornell University, Us, [5]School of Electrical and Computer Engineering, Cornell University, Us, [6]Department of Applied Physics and Quantum-Phase Electronics Center (QPEC), University of Tokyo, Jp, [7]Department of Materials Science and Engineering, The Pennsylvania State University, Us, [8]Department of Material Science and Engineering, Cornell University, NY/Us, [9]Cornell University, Us

08:30 - 09:00 NOVEL RADICAL-BASED MOLECULAR BEAM EPITAXY APPROACH FOR METAL OXIDE FILMS CONTAINING ELEMENTS OF LOW OXIDATION POTENTIAL
Bharat Jalan, University of Minnesota, MN/Us

09:00 - 09:30 SYNTHESIS STRATEGIES FOR CONTROLLING THE IN-PHASE OCTAHEDRAL ROTATION AXIS IN *PBNM*-TYPE PEROVSKITES
Steven May, Drexel University, PA/Us

09:30 - 10:00 PUSHING THE ENVELOPE ON UNDERSTANDING AND SUPPRESSING ATOM AND ION DIFFUSION ACROSS COMPLEX OXIDE INTERFACES
Scott Chambers; Steven Spurgeon; Yingge Du; Peter Sushko; Pacific Northwest National Laboratory, WA/Us

08:00 - 10:00 Wednesday, August, 2, 2017 Zia Ballroom
Ferroelectric crystals and textured ceramics (1 of 3)
Moderation: Jun Luo[1]; RichardJ. Meyer[2]; [1]TRS/US, [2]Penn State/US

08:00 - 08:30 RECENT DEVELOPMENTS AND UNDERSTANDING OF HIGH-PERFORMANCE PIEZO-/FERROELECTRIC SINGLE CRYSTALS OF COMPLEX PEROVSKITE
Zuo-Guang Ye, Simon Fraser University, BC/Ca

08:30 - 09:00 CRYSTAL GROWTH AND DOMAIN MEMORY EFFECT OF PMN-PT NEAR MPB
Qiang Li; CHAO Xu; Department of Chemistry, Tsinghua University, Cn

09:00 - 09:15 GROWTH, SIMULATION AND PROPERTIES CHARACTERIZATION OF LARGE SIZE $PB(IN_{1/2}NB_{1/2})O_3$-$PB(MG_{1/3}NB_{2/3})O_3$-$PBTIO_3$SINGLE CRYSTAL BY MODIFIED BRIDGEMAN METHOD
Kexin Song[1]; Zhuo Xu[2]; Zhenrong Li[1]; Fei Li[3]; Shiji Fan[1]; Sanhong Wang[1]; Haisheng Guo[1]; Ming Ma[1]; Yao Liu[1]; [1]Xian Jiaotong university, Cn, [2]Xian Jiaotong University, Cn, [3]Material Research Lab, Pennsylvania State University, Us

09:15 - 09:30 HIGH CURIE-TEMPERATURE (T_C) PIEZO-/FERROELECTRIC SINGLE CRYSTALS WITH BISMUTH-BASED COMPLEX PEROVSKITES: GROWTH, STRUCTURES AND PROPERTIES
Zuo-Guang Ye; Zenghui Liu; Hua Wu; Alisa Paterson; Simon Fraser University, BC/Ca

09:30 - 09:45 LEAD-FREE CRYSTAL GROWTH: FROM KTN TO KNN
Hao Tian; Peng Tan; Harbin Institute of Technology, Cn

09:45 - 10:00 COMPOSITION DESIGN AND PIEZOELECTRIC PROPERTY OF PURE KXNA1-XNBO3 SINGLE CRYSTAL FABRICATED BY SEED-FREE SOLID-STATE CRYSTAL GROWTH
Minhong Jiang; Chongyan Hao; Zhengfei Gu; Guilin University of Electronic Technology, Cn

10:30 - 12:00 Wednesday, August, 2017 Anasazi Ballroom North
Thin Film Growth, Epitaxy, and Superlattices (2 of 2)
Moderation: Andrey Krysa[1]; Toby Garrod[2]; [1]U of Sheffield/GB, [2]II-VI/US

10:30 - 11:00 HIGH-INDEX-CONTRAST PHOTONIC CRYSTAL (HC-PC) QUANTUM CASCADE LASERS FABRICATED BY OMVPE
Luke Mawst[1]; Chris Sigler[2]; Colin Boyle[2]; Jeremy Kirch[3]; Don Lindberg Iii[4]; Tom Earles[4]; Dan Botez[2]; [1]University of Wisconsin-madison, WI/Us, [2]Department of Electrical and Computer Engineering, University of Wisconsin-Madison, WI/Us, [3]University of Wisconsin-Madison, WI/Us, [4]Intraband LLC, WI/Us

11:00 - 11:20 TUNING PHASE-SEPARATION AND ATOMIC-ORDERING IN ALGAINP FOR METAMORPHIC DEVICES
Kunal Mukherjee[1]; Eugene Fitzgerald[2]; [1]University of California Santa Barbara, CA/Us, [2]Massachusetts Institute of Technology, MA/Us

11:20 - 11:40 DOMAIN EPITAXY IN ANATASE TIO_2-SAPPHIRE THIN FILM HETEROSTRUCTURE: A NOVEL EPITAXIAL MATCH DERIVED FROM SOLUTION PHASE SYNTHESIS
Marissa Martinez[1]; Andrew Ichimura[2]; Christopher Tassone[3]; [1]University of Colorado, CO/Us, [2]San Francisco State University, Us, [3]Stanford Synchrotron Radiation Lightsource, CA/Us

11:40 - 12:00 IN-SITU SURFACE X-RAY SCATTERING INVESTIGATION INTO HYBRID OXIDE MOLECULAR BEAM EPITAXY GROWTH MECHANISMS FOR PEROVSKITE MATERIALS

Tassie Andersen[1]; Say Young Cook[2]; Hawoong Hong[3]; Laurence Marks[2]; Dillon Fong[4]; [1], Us, [2]Northwestern University, IL/Us, [3]Argonne National Laboratory, IL/Us, [4]Argonne National Laboratory, Us

10:30 – 11:45 Wednesday, August, 2, 2017 Anasazi Ballroom South
Fundamental of Crystal Growth (8 of 9)
Moderation: Peter. Vekilov, U of Houston/US

10:30 - 11:00 THE GROWTH AND DECOMPOSITION OF METASTABLE SEMICONDUCTING ALLOYS

Thomas Kuech[1]; Yingxin Guan[1]; Susan Babcock[2]; Luke Mawst[3]; Dane Morgan[1]; Guangfu Luo[1]; [1]University of Wisconsin Madison, Us, [2]University of Wisconsin-Madison, WI/Us, [3]University of Wisconsin-madison, WI/Us

11:00 - 11:30 THERMODYNAMICS OF DEPOSITION-FLUX DEPENDENT INTRINSIC FILM STRESS

Marcel J Rost[1]; Amirmehdi Saedi[2]; [1]Leiden Institute of Physics, Nl, [2]Leiden Institute of Chemistry, Nl

11:30 - 11:45 STRESS-DIRECTED COMPOSITIONAL PATTERNING OF COMPOUND SEMICONDUCTORS AND STRESS MAPPING BY 2D MICRO-RAMAN IMAGING

Brian Rummel; Michael Rimada; Sang Han; University of New Mexico, NM/Us

10:30 - 12:00 Wednesday, August, 2, 2017 Chapel Room
Symposium on Epitaxy of Complex Oxides (5 of 11)
Moderation: Ho Nyung Lee[1]; Darrel Schlom[2]; Lane Martin[3]; [1]ONRL/US, [2]Cornell/US, [3]Berkeley/US

10:30 - 11:00 OPTOELECTRONIC PROPERTIES OF EPITAXIALLY STRAINED COMPLEX OXIDES FROM FIRST PRINCIPLES

Sebastian Reyes-Lillo[1]; Jeffrey Neaton[2]; [1]LBNL, CA/Us, [2]Molecular Foundry, LBNL, CA/Us

11:00 - 11:15 ELASTIC STRAIN ENGINEERING OF PBTIO3 THIN FILMS GROWN BY REACTIVE MOLECULAR-BEAM EPITAXY
Eric Langenberg[1]; Eva Smith[2]; Hari Nair[3]; Neus Domingo[4]; Gustau Catalan[4]; Darrell Schlom[1]; [1]Cornell University, Us, [2]Department of Material Science and Engineering, Cornell University, Us, [3]Cornell University, NY/Us, [4]Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC, Barcelona Institute of Science and Technology, Campus Universitat Autònoma de Barcelona, Es

11:15 - 11:30 STRAIN CONTROL OF CATIONIC DISTRIBUTION IN $BI_4TI_3O_{12}$-$BIFEO_3$ COMPOSITE FILMS
Changhee Sohn[1]; Dongkyu Lee[2]; Xiang Gao[2]; Ho Nyung Lee[2]; [1]Oak Ridge National Laboratory, Us, [2]Oak Ridge National Laboratory, TN/Us

11:30 - 12:00 SHARPENED VO2 PHASE TRANSITION VIA CONTROLLED RELEASE OF EPITAXIAL STRAIN
Chang-Beom Eom, University of Wisconsin-Madison, Us

10:30 - 12:00 Wednesday, August, 2, 2017 Zia Ballroom
Bulk Crystal Growth (1 of 5)
Moderation: Robert Feigelson[1]; Aleksandar Ostrogorsky[2]; [1]Stanford/US, [2] IIT/US

10:30 - 11:00 IN SITU DIAGNOSTICS OF SCINTILLATOR CRYSTAL GROWTH PROVIDED BY ENERGY-RESOLVED NEUTRON IMAGING
Anton Tremsin[1]; Didier Perrodin[2]; Adrian Losko[3]; Sven Vogel[3]; Mark Bourke[3]; Jeffrey Peterson[4]; Jeffrey Derby[4]; Takenao Shinohara[5]; Gregory Bizarri[2]; Edith Bourret[2]; [1]University of California, CA/Us, [2]Lawrence Berkeley National Laboratory, CA/Us, [3]Los Alamos National Laboratory, NM/Us, [4]University of Minnesota, MN/Us, [5]Japan Atomic Energy Agency, Jp

11:00 - 11:15 FINITE-ELEMENT MODELING OF SCINTILLATOR CRYSTAL GROWTH WITHIN A BRIDGMAN FURNACE IMAGED VIA NEUTRON SCATTERING
Chang Zhang[1]; Jeffrey Peterson[1]; Jan Seebeck[1]; Anton Tremsin[2]; Didier Perrodin[3]; Gregory Bizarri[3]; Edith Bourret[3]; Sven Vogel[4]; Jeffrey Derby[1]; [1]University of Minnesota, MN/Us, [2]University of California, CA/Us, [3]Lawrence Berkeley National Laboratory, CA/Us, [4]Los Alamos National Laboratory, NM/Us

11:15 - 11:30 PREPARATION AND CHARACTERIZATION OF TERNARY CESIUM HAFNIUM CHLORIDE SINGLE CRYSTALS
Robert Kral[1]; Petra Zemenova[2]; Ales Bystricky[2]; Vitezslav Jary[2]; Vladimir Babin[2]; Antonin Cihlar[2]; Karel Nitsch[2]; Pavel Veverka[2]; Martina Kohoutkova[3]; Shohei Kodama[4]; Shunsuke Kurosawa[5]; Yuui Yokota[6]; Akira Yoshikawa[4];

Martin Nikl[2]; [1]Institute of Physics of the Czech Academy of Sciences, Cz, [2]Institute of Physics, Czech Academy of Sciences, Cz, [3]University of Chemistry and Technology Prague, Cz, [4]Institute for Materials Research, Tohoku University, Jp, [5]Department of Physics, Yamagata University, Jp, [6]Tohoku University,

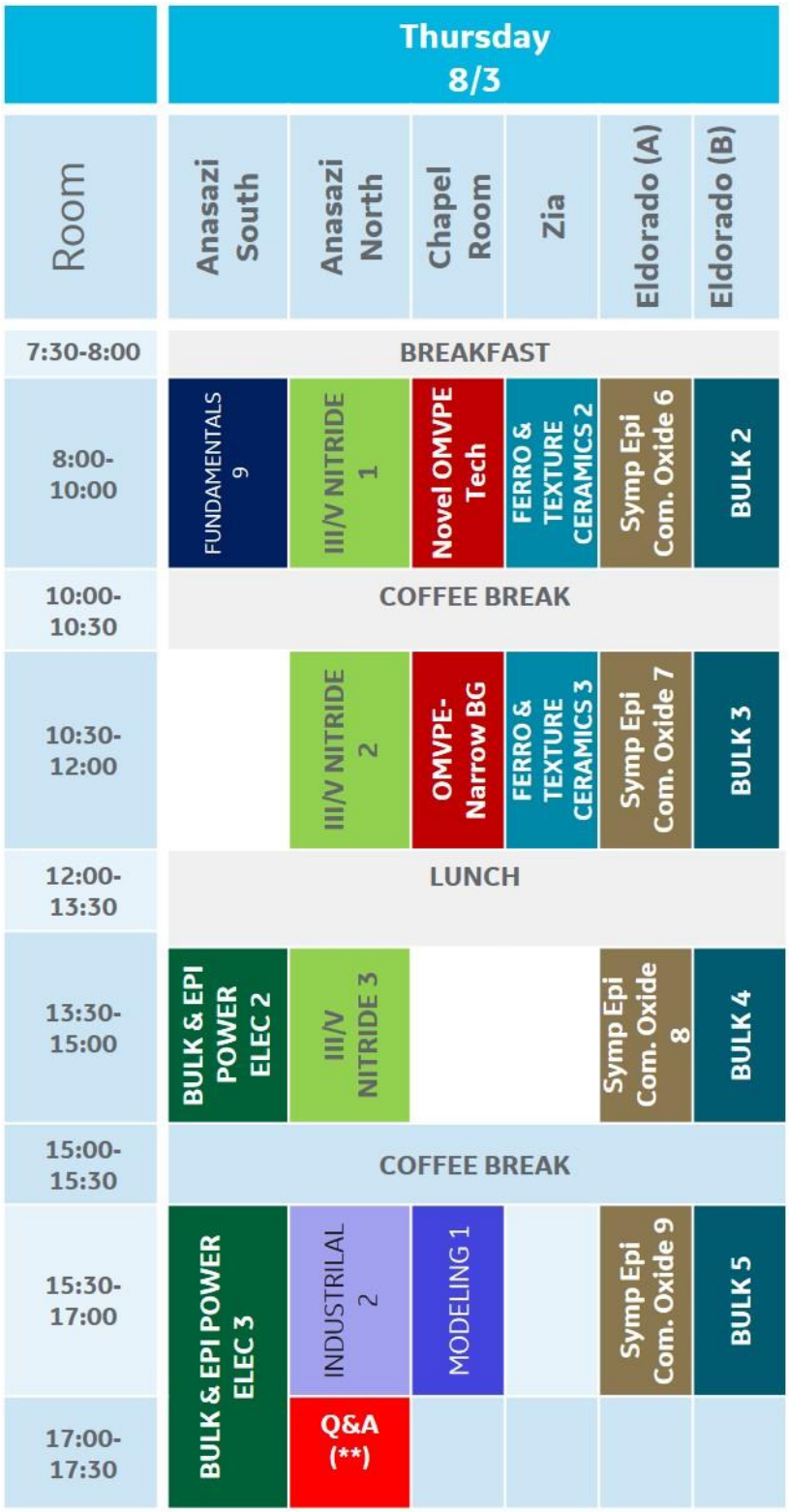
11:30 - 12:00 SOLUTION GROWTH OF BULK ORGANIC CRYSTALS

Natalia Zaitseva[1]; Leslie Carman[2]; Andrew Glenn[2]; Andrew Mabe[2]; Stephen Payne[2]; [1]Lawrence Livermore National Laboratory, Us, [2]Lawrence Livermore National Laboratory, CA/Us

12:00-5:00	**Group Excursions** **(please see page 17 for more information)**	

6:00-7:00	**Banquet Reception** ***Tickets are required.***	**Eldorado A & B**
7:00-9:00	**Banquet** ***Tickets are required.*** Tickets are included with purchase of REGULAR REGISTRATION. Additional banquet tickets are available for purchase at Registration. A limited number of donated tickets are available for students. Please sign up at registration before Wednesday morning and check back Wednesday at noon to see if you have received a ticket.	

Thursday, August 3, 2017
Day at a glance



Thursday, August 3, 2017

08:00 – 9:30 III/V Nitride and Other WBG Semiconductors (1 of 3) Anasazi Ballroom North
Moderation: Dirk Ehrentraut[1]; Nelson Tansu[2]; [1]SOORA, [2]Lehigh

08:00 - 08:30 THICK HVPE GAN FILMS WITH DRAMATICALLY IMPROVED PROPERTIES
Jaime Freitas[1]; James Culbertson[2]; Nadeemullah Mahadik[1]; Shuang Wu[3]; Balaji Raghothamachar[4]; Michael Dudley[4]; Tomasz Socacki[5]; Michal Bockowski[5]; [1]Naval Research Laboratory, DC/Us, [2]Naval Research LAboratory, DC/Us, [3]Dept. of Mat. Sc., Stony Brook University, NY/Us, [4]Stony Brook University, NY/Us, [5]UNIPRESS, Institute of High Pressure, Pl

08:30 - 08:50 SINGLE-CRYSTAL-LIKE III-NITRIDE THIN FILMS DIRECTLY GROWN ON METAL TAPE
Jae-Hyun Ryou[1]; Shahab Shervin[2]; Kamrul Alam[2]; Kaveh Shervin[2]; Seung-Hwan Kim[2]; Tae Hoon Chung[3]; Jie Chen[2]; Wiejie Wang[2]; Sara Pouladi[2]; Rebecca Forrest[2]; Jiming Bao[2]; [1]University of Houston, TX/Us, [2]University of Houston, Us, [3]KOPTI, Kr

08:50 - 09:10 STRAIN RELAXATION PROPERTIES OF OMVPE-GROWN ALINN SEMICONDUCTORS
Wei Sun[1]; Renbo Song[2]; Jonathan Wierer, Jr.[2]; Nelson Tansu[2]; [1]Lehigh University, Us, [2]Lehigh University, PA/Us

09:10 - 09:30 THREADING DISLOCATION REDUCTION IN GAN ON SI(111) BY USING THREE DIMENSIONAL ISLAND GROWTH
Shane Chang, National Chiao Tung University , Tw

08:00 – 9:15 Thursday, August 3, 2017 Anasazi Ballroom South
Fundamentals of Crystal Growth (9 of 9)
Moderation: Peter Vekilov, U of Houston/US

08:00 - 08:15 ON ALLEVIATING MORPHOLOGICAL INSTABILITIES IN THE TRAVELING HEATER METHOD (THM) VIA THE ACCELERATED CRUCIBLE ROTATION TECHNIQUE (ACRT)
Jeffrey Peterson; Jeffrey Derby; University of Minnesota, MN/Us

08:15 - 08:30 GROWTH TEMPERATURE OPTIMIZATION OF GAAS-BASED $IN_{0.83}GA_{0.17}AS$ PHOTODETECTOR STRUCTURES ON $IN_XAL_{1-X}AS$ BUFFERS

Xingyou Chen; Yi Gu; Yonggang Zhang; Yingjie Ma; Suping Xi; Ben Du; Jian Zhang; Yanhui Shi; Wanyan Ji; Yi Zhu; Shanghai Institute of Microsystem and Information Technology (SIMIT), Chinese Academy of Sciences (CAS), Cn

08:30 - 08:45 INFLUENCE OF OXYGEN DIFFUSION ON DISLOCATION DENSITY IN SI SINGLE CRYSTAL

Satoshi Nakano[1]; Wataru Fukushima[2]; Hirofumi Harada[1]; Yoshiji Miyamura[1]; Koichi Kakimoto[1]; [1]Research Institute for Applied Mechanics, Kyushu University, Jp, [2]Kyushu University, Jp

08:45 - 09:00 GA(NASSB) CLOSE TO 1 EV GROWN WITH DTBAA

Eduard Sterzer[1]; Nattermann Lukas[2]; Oliver Maßmeyer[2]; Benjamin Ringler[2]; Carsten Von Hänisch[3]; Wolfgang Stolz[2]; Kerstin Volz[2]; [1]Material Sciences Center, De, [2]Philipps-Universität Marburg, Material Sciences Center and Faculty of Physics, De, [3]Philipps-Universität Marburg, Faculty of Chemistry, De

09:00 - 09:15 REVISITING THE TWINNING MECHANISM IN DIRECTIONAL SOLIDIFICATION OF MULTI-CRYSTALLINE SILICON SHEET

Chung-Wen Lan; H K Lin; Dept. of Chem. Eng., National Taiwan University, Tw

08:00 - 09:40 Thursday, August 3, 2017 Chapel Room
Novel OMVPE Techniques and In-Situ Monitoring
Moderation: Matt Highland, Argonne National Laboratory/US

08:00 - 08:20 IN SITU COHERENT X-RAY SCATTERING STUDIES DURING OMVPE OF GAN

Guangxu Ju[1]; Dongwei Xu[1]; Matt Highland[2]; Andrew Ulvestad[3]; Carol Thompson[4]; Jeffrey Eastman[5]; Peter Zapol[3]; Angel Yanguas-Gil[3]; Paul Fuoss[5]; Gregory Stephenson[1]; [1]Argonne National Laboratory, IL/Us, [2]Argonne National Lab, IL/Us, [3]Materials Science Div., Argonne National Lab, IL/Us, [4]Department Of Physics, Northern Illinois University, Us, [5]Materials Science Division, Argonne National Lab, IL/Us

08:20 - 08:40 BROADBAND IN SITU OPTICAL MONITORING FOR OMVPE GROWTH

George Atanasoff[1]; Christopher Metting[2]; [1]AccuStrata, Inc., MD/Us, [2]AccuStrata, MD/Us

08:40 - 09:00 CHARACTERIZING AMPOULE PERFORMANCE FOR LOW VAPOR PRESSURE PRECURSOR DELIVERY
James Maslar[1]; William Kimes[1]; Brent Sperling[1]; William Kimmerle[2]; Kyle Kimmerle[2]; [1]NIST, Us, [2]NSI, Us

09:00 - 09:20 HIGH TEMPERATURE OMVPE REACTOR WITH REDUCED PREMATURE REACTION AND IMPROVED HEATING EFFICIENCY
Kuang-Hui Li[1]; Hamad Alotaibi[2]; Xiaohang Li[2]; [1]KAUST, Sa, [2]King Abdullah University of Science and Technology (KAUST), Sa

09:20 - 09:40 EPITAXIAL GROWTH OF GA_2O_3 BY MOCVD USING OXYGEN: EXPERIMENTAL STUDY AND MODEL VERIFICATION
Maxim Bogdanov[1]; Anna Lobanova[2]; Roman Talalaev[1]; Alex Galyukov[3]; Fikadu Alema[4]; Brian Hertog[4]; Andrei Osinsky[4]; [1]STR Group, Inc. – Soft-Impact, Ltd., Ru, [2]STR, Ru, [3]STR US, Inc., VA/Us, [4]Agnitron Technology, Inc., MN/Us

08:00 - 10:00 Thursday, August 3, 2017 Zia Ballroom
Ferroelectric crystals and textured ceramics (2 of 3)
Moderation: Jun Luo[1]; RichardJ. Meyer[2]; [1]TRS/US, [2]Penn State/US

08:00 - 08:30 TRACKING FERROELECTRIC DOMAIN GROWTH USING LASER SCATTERING TOMOGRAPHY
Robert Feigelson; Howard Lee; Robert Demattei; Stanford University, CA/Us

08:30 - 09:00 MANUFACTURING AND UNIFORMITY OF GRAIN TEXTURED PIEZOELECTRIC CERAMICS
Mark Fanton[1]; Richard Meyer[2]; Elizabeth Kupp[2]; Beecher Watson[2]; Yunfei Chang[2]; Gary Messing[2]; [1]Penn State University, Us, [2]Penn State University, PA/Us

09:00 - 09:15 PROCESSING-ELECTROMECHANICAL PROPERTY RELATIONSHIPS IN TEXTURED PMNT
Richard Meyer[1]; Mark Fanton[2]; Gary Messing[1]; Elizabeth Kupp[1]; Yunfei Change[1]; Beecher Watson[1]; [1]Penn State University, PA/Us, [2]Penn State University, Us

09:15 - 09:30 SHEAR PIEZOELECTRIC PROPERTIES OF RELAXOR-PBTIO3 SINGLE CRYSTALS

Ming Ma[1]; Fei Li[2]; Kexin Song[3]; Yangbin Liu[2]; Zhenrong Li[3]; Shiji Fan[3]; Sanhong Wang[3]; Zhuo Xu[4]; [1]Xi'an Jiaotong University, Cn, [2]Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education and International Center for Dielectric Research,Xi'an Jiaotong University, Cn, [3]Xian Jiaotong university, Cn, [4]Xian Jiaotong University, Cn

09:30 - 10:00 ELECTRO-OPTIC AND NONLINEAR-OPTICAL PROPERTIES OF $PB(MG_{1/3}NB_{2/3})O_3$-$PBTIO_3$SINGLE CRYSTAL

Zhuo Xu; Xin Liu; Xiaotian Fu; Ye Zhao; Weigang Zhao; Yongyong Zhuang; Xiaoyong Wei; Peng Luan; Xian Jiaotong University, Cn

08:15 - 10:00 Thursday, August 3, 2017 Eldorado Grand Ballroom (B)
Bulk Crystal Growth (2 of 5)
Moderation: Aleksandar Ostrogorsky, IIT/US

08:15 - 08:45 PROGRESS IN CZOCHRALSKI CRYSTAL GROWTH OF DISLOCATION FREE SILICON, AND POTENTIAL OF CONTINUOUS CZOCHRALSKI FOR NEXT GENERATION SILICON

Joel Kearns, NASA John H. Glenn Research Center, OH/Us

08:45 - 09:00 TOWARDS GRAPHITE-FREE HOT ZONE FOR DIRECTIONAL SOLIDIFICATION OF SILICON

Natasha Dropka[1]; Iryna Buchovska[2]; Iris Herrmann-Geppert[2]; Frank Kießling[2]; Ulrich Degenhardt[3]; [1]Leibniz Institute for Crystal Growth (IKZ) , De, [2]Leibniz Institute for Crystal Growth (IKZ), De, [3]FCT Ingenieurkeramik GmbH, De

09:00 - 09:15 NUMERICAL SIMULATION OF THE THERMAL AND FLOW FIELDS FOR A CZOCHRALSKI SILICON GROWTH WITH THE SYMMETRIC OR ASYMMETRIC CUSP-SHAPED MAGNETIC FIELD

Thi Hoai Thu Nguyen[1]; Jyh Chen Chen[2]; Chieh Hu[2]; Chun Hung Chen[2]; [1]Department of Mechanical Engineering, National Central University, Tw, [2]National Central University, Tw

09:15 - 09:30 INFLUENCE OF CONTAINMENT ON THE GROWTH OF GERMANIUM-SILICON IN MICROGRAVITY

Martin Volz[1]; Konstantin Mazuruk[2]; Arne Croell[2]; Tina Sorgenfrei[3]; [1]NASA Marshall Space Flight Center, AL/Us, [2]University of Alabama in Huntsville, AL/Us, [3]University of Freiburg, De

09:30 - 09:45 DONOR IMPURITY INCORPORATION DURING LAYER GROWTH OF ZN II-VI SEMICONDUCTORS
Douglas Barlow, Santa Fe College, FL/Us

09:45 - 10:00 AXIAL INFLECTION POINT TEMPERATURE PROFILES FOR THE ENGINEERING OF CONVEX CRYSTAL GROWTH INTERFACES IN BRIDGMAN SYSTEMS
Jeffrey Peterson; Jeffrey Derby; University of Minnesota, MN/Us

08:45 - 10:00 Thursday, August 3, 2017 Eldorado Grand Ballroom (A)
Symposium on Epitaxy of Complex Oxides (6 of 11)
Moderation: Ho Nyung Lee[1]; Darrel Schlom[2]; Lane Martin[3]; [1]ONRL/US, [2]Cornell/US, [3]Berkeley/US

08:45 - 09:00 STRAIN TUNING OF ELECTRONIC GROUND STATE IN CA_2RUO_4 EPITAXIAL THIN FILMS
Hari Nair[1]; Jacob Ruf[2]; Yang Liu[3]; Benjamin Grisafe[4]; Nikhil Shukla[4]; Celesta Chang[5]; Qiang Han[6]; Andrew Millis[6]; David Muller[7]; Suman Datta[4]; Kyle Shen[2]; Darrell Schlom[7]; [1]Cornell University, NY/Us, [2]Department of Physics, Cornell University, Us, [3]Department of Physics, Zhejiang University, Cn, [4]Department of Electrical Engineering, University of Notre Dame, Us, [5]Applied and Engineering Physics, Cornell University, Us, [6]Department of Physics, Columbia University, Us, [7]Cornell University, Us

09:00 - 09:30 SUBSTRATE 'THERMINATION' AND THE ROLE OF SURFACE RECONSTRUCTION FOR THE EPITAXY OF PEROVSKITE OXIDES
Wolfgang Braun; Maren Jäger; Jochen Mannhart; Max Planck Institute for Solid State Research, De

09:30 - 10:00 MAGNETISM AT INTERFACES IN COMPLEX OXIDES GROWN USING MOLECULAR BEAM EPITAXY
Anand Bhattacharya, Argonne National Laboratory, Us

10:00-11:40 Thursday, August 3, 2017 Anasazi Ballroom North
III/V Nitride and Other WBG Semiconductors (2 of 3)
Moderation: Dirk Ehrentraut[1]; Nelson Tansu[2]; [1]SOORA, [2]Lehigh

10:30 - 11:00 BASIC AMMONOTHERMAL GROWTH OF BULK GAN IN MOLYBDENUM CAPSULES
Siddha Pimputkar[1]; James Speck[2]; Shuji Nakamura[2]; [1]Lehigh University, PA/Us, [2]University of California, Santa Barbara, CA/Us

11:00 - 11:20 THE SODIUM FLUX TECHNIQUE FOR BULK GALLIUM NITRIDE
Paul Von Dollen[1]; Mohammed Abo Alreesh[1]; Siddha Pimputkar[2]; Hamad Albrithen[3]; Shuji Nakamura[4]; James Speck[4]; [1]University of California, Santa Barbara, Us, [2]Lehigh University, PA/Us, [3]King Adbulaziz City for Science and Technology, Sa, [4]University of California, Santa Barbara, CA/Us

11:20 - 11:40 *IN-SITU* GROWTH MODE CONTROL OF ALN ON SIC SUBSTRATE BY SUBLIMATION CLOSED SPACE TECHNIQUE
Daichi Dojima[1]; Koji Ashida[2]; Tadaaki Kaneko[2]; [1]Kwansei Gakuin University , Jp, [2]Kwansei Gakuin University, Jp

10:30 - 11:50 Thursday, August 3, 2017 Chapel Room
OMVPE of Narrow Bandgap Semiconductors
Moderation: Simon Watkins, Simon Fraser University/CA

10:30 - 10:50 IMF GROWTH OF GASB ON V-GROOVED SI WITH ASPECT RATIO TRAPPING
Billy Lai[1]; Qiang Li[2]; Kei Lau[2]; [1]The Hong Kong University of Science and Technology, Hk, [2]Hong Kong University of Science and Technology, Hk

10:50 - 11:10 OMVPE GROWTH OF STRAIN-COMPENSATED $GAAS_{1-Y}P_Y/GAAS_{1-X}BI_X$ QUANTUM WELL ACTIVE REGION LASERS
Honghyuk Kim[1]; Yingxin Guan[2]; Thomas Kuech[2]; Luke Mawst[3]; [1]University of Wisconsin-Madison, WI/Us, [2]University of Wisconsin Madison, Us, [3]University of Wisconsin-madison, WI/Us

11:10 - 11:30 THERMODYNAMIC STABILITY ANALYSIS OF BI-CONTAINING III-V QUATERNARY ALLOYS AND THE EPITAXIAL STRAIN EFFECTS
Yingxin Guan; Guangfu Luo; Dane Morgan; Thomas Kuech; University of Wisconsin Madison, Us

11:30 - 11:50 GROWTH AND CHARACTERIZATION OF $IN_XGA_{1-X}SB$ METAMORPHIC BUFFER LAYERS BY METAL-ORGANIC VAPOR PHASE EPITAXY ON THE GASB SUBSTRATE
Yingxin Guan[1]; Aaron Tan[2]; Susan Babcock[3]; Luke Mawst[4]; Thomas Kuech[1]; [1]University of Wisconsin Madison, Us, [2]University of Wisconsin Madison, WI/Us, [3]University of Wisconsin-Madison, WI/Us, [4]University of Wisconsin-madison, WI/Us

10:30 - 12:00 Thursday, August 3, 2017 Eldorado Grand Ballroom (A)
Symposium on Epitaxy of Complex Oxides (7 of 11)
Moderation: Ho Nyung Lee[1]; Darrel Schlom[2]; Lane Martin[3]; [1]ONRL/US, [2]Cornell/US, [3]Berkeley/US

10:30 - 11:00 HIGH PRESSURE OXYGEN SPUTTER DEPOSITION OF PEROVSKITE OXIDE METALS AND SEMICONDUCTORS
Chris Leighton[1]; Jeff Walter[1]; Koustav Ganguly[1]; Palak Ambwani[1]; Shameek Bose[1]; Peng Xu[1]; Abhinav Prakash[1]; Greg Haugstad[1]; Jaume Gazquez[2]; Neven Biskup[3]; Maria Varela[3]; Jong Seok Jeong[1]; Andre Mkhoyan[1]; Bharat Jalan[1]; [1]University of Minnesota, MN/Us, [2]Universidad Complutense de Madrid, Es, [3]Universidad de Complutense de Madrid, Es

11:00 - 11:15 GROWTH OF HIGH QUALITY EPITAXIAL LAALO3 ON SRTIO3 ON (001) SI VIA MOLECULAR-BEAM EPITAXY
Zhe Wang[1]; Darrell Schlom[2]; [1]Cornell University, NY/Us, [2]Cornell University, Us

11:15 - 11:30 GROWTH OF DEFECT MITIGATING, METASTABLE $(SRTIO_3)_N(BATIO_3)_M$SRO SUPERLATTICES
Natalie Dawley[1]; Megan Holtz[2]; Gerhard Olsen[2]; Xifeng Lu[3]; Nathan Orloff[3]; Che-Hui Lee[2]; Jingshu Zhang[2]; James Booth[3]; Craig Fennie[2]; David Muller[2]; Darrell Schlom[2]; [1]Cornell University, NY/Us, [2]Cornell University, Us, [3]NIST, Us

11:30 - 12:00 EPITAXIAL GROWTH OF EXTREME-MOBILITY OXIDES
Jon-Paul Maria, North Carolina State University, NC/Us

10:30 - 12:00 Thursday, August 3, 2017 Eldorado Grand Ballroom (B)
Bulk Crystal Growth (3 of 5)
Moderation: Robert Feigelson[1]; Aleksandar Ostrogorsky[2]; [1]Stanford/US, [2] IIT/US

10:30 - 11:00 TWO-INCH, HIGH TRANSPARENCY ALUMINUM NITRIDE SINGLE CRYSTAL GROWTH FOR COMMERCIAL APPLICATIONS
Leo Schowalter; Robert Bondokov; Jianfeng Chen; Murugesu Yoganathan; Takashi Suzuki; Shailaja Rao; Toru Kimura; Keisuke Yamaoka; Crystal IS, Inc., Us

11:00 - 11:15 SUBLIMATION GROWTH AND CHARACTERIZATION OF ERBIUM NITRIDE CRYSTALS
Hayder Alatabi; Balabalaji Padavala; James Edgar; Kansas State University, Us

11:15 - 11:30 FROM X-RAYS TO NEUTRONS (AND BEYOND): CASE STUDIES OF COMPLEX VANADATES GROWN FROM MICRONS TO CENTIMETERS (AND BEYOND)
Colin McMillen[1]; Vasile Garlea[2]; Michael McGuire[2]; Liurukara Sanjeewa[3]; Joseph Kolis[1]; [1]Clemson University, SC/Us, [2]Oak Ridge National Laboratory, Us, [3]Clemson University, Us

11:30 - 11:45 POSSIBLE PRESENCE OF AL-GA COMPLEX IN THE $CA_3TA(GA,AL)_3SI_2O_{14}$ MELT AND ITS PARTITIONING DURING GROWTH FROM THE MELT
Satoshi Uda; Shuhei Sakano; Chihiro Koyama; Junpei Okada; Tohoku University, Jp

11:45 - 12:00 GROWTH OF CORUNDUM CRYSTALS FOR CALIBRATION STANDARDS USED IN DETERMINING GEOGRAPHICAL ORIGIN OF NATURAL RUBIES AND SAPPHIRES
Zachary Cole[1]; Jennifer Stone-Sundberg[2]; Randy Equall[1]; Tim Thomas[3]; John Emmett[4]; [1]FLIR - Scientific Materials, Us, [2]Crystal Solutions, OR/Us, [3]PDX Photonics, OR/Us, [4]Crystal Chemistry, WA/Us

10:30 - 10:45 Thursday, August 3, 2017 Zia Ballroom
Ferroelectric crystals and textured ceramics (3 of 3)
Moderation: Jun Luo[1]; RichardJ. Meyer[2]; [1]TRS/US, [2]Penn State/US

10:30 - 10:45 PROPERTY MODIFICATION OF RELAXOR-PT CRYSTALS BY ACCEPTOR AND DONOR DOPANTS
Jun Luo[1]; Sam Taylor[1]; Fei Li[2]; Shujun Zhang[3]; Tom Shrout[2]; Wes Hackenberger[1]; [1]TRS Technologies, Inc., Us, [2]Material Research Lab, Pennsylvania State University, Us, [3]Australian Institute of Innovative Materials, University of Wollongong, Au

13:30 – 14:50 **Thursday, August 3, 2017** **Anasazi Ballroom North**

III/V Nitride and Other WBG Semiconductors (3 of 3)

Moderation: Dirk Ehrentraut[1]; Nelson Tansu[2]; [1]SOORA, [2]Lehigh

13:30 - 13:50 PULSED OMVPE GROWTH STUDIES OF INN FOR INTEGRATION IN INGAN ACTIVE REGION

Ioannis Fragkos[1]; Wei Sun[2]; Damir Borovac[1]; Renbo Song[1]; Jonathan Wierer, Jr.[1]; Nelson Tansu[1]; [1]Lehigh University, PA/Us, [2]Lehigh University, Us

13:50 - 14:10 PROPERTIES OF GAN ON HIGH QUALITY ALN SAPPHIRE TEMPLATE BY USING METALORGANIC CHEMICAL VAPOR DEPOSITION

Akira Mishima[1]; Yuji Tomita[1]; Guanxi Piao[1]; Yoshiki Yano[2]; Toshiya Tabuchi[2]; Koh Matsumoto[2]; [1]Taiyo Nippon Sanso corporation., Jp, [2]Taiyo Nippon Sanso, Jp

14:10 - 14:30 DELTA DOPING AND BIASED ENHANCED GROWTH DIAMOND BY HOT FILAMENT CVD TECHNOLOGY

Gary Harris[1]; Aaron Jackson[1]; Amber Wingfield[1]; James Griffin[1]; Crawford Taylor[1]; Marko Loncar[2]; [1]Howard University, DC/Us, [2]Harvard University, MA/Us

14:30 - 14:50 DOPED, HIGH MOBILITY CADMIUM OXIDE FILMS FOR TUNABLE PLASMONICS

Evan Runnerstrom[1]; Jon-Paul Maria[2]; [1]NC State University, Us, [2]North Carolina State University, NC/Us

13:30 - 15:00 **Thursday, August 3, 2017** **Anasazi Ballroom South**

Bulk Growth and Epitaxy for Power Electronics (2 of 3)

Moderation: Michael Dudley; Balaji Raghothamachar; Stony Brook/US

13:30 - 14:00 INFLUENCE OF CARRIER CONCENTRATION ON BULK LIFETIME IN CZ-SI CRYSTAL

Koichi Kakimoto, Research Institute for Applied Mechanics, Kyushu University, Jp

14:00 - 14:30 SIC CRYSTAL GROWTH AND SUBSTRATE TECHNOLOGY FOR DEVICE MANUFACTURING
Robert Leonard; Yuri Khlebnikov; Michael Paisley; Simon Bubel; Jyothi Ambati; Eugene Deyneka; Ian Currier; Valeri Tsvetkov; Jeff Seaman; Adrian Powell; Mike O'Loughlin; Edward Van Brunt; Al Burk; Elif Balkas; Cree, Inc., NC/Us

14:30 - 15:00 OMVPE GROWTH OF AL-RICH ALGAN ALLOYS FOR POWER ELECTRONICS
Andrew Allerman[1]; Mary Crawford[2]; Greg Pickrell[2]; Andrew Armstrong[2]; Robert Kaplar[2]; Jeramy Dickerson[2]; Brianna Klein[2]; Michael King[2]; Michael Van Heukelom[2]; [1]Sandia National Laboratories, Us, [2]Sandia National Laboratories, NM/Us

13:30 - 15:00 Thursday, August 3, 2017 Eldorado Grand Ballroom (A)
Symposium on Epitaxy of Complex Oxides (8 of 11)
Moderation: Ho Nyung Lee[1]; Darrel Schlom[2]; Lane Martin[3]; [1]ONRL/US, [2]Cornell/US, [3]Berkeley/US

13:30 - 14:00 MAESTRO: A SYNCHROTON BEAMLINE FOR ELECTRONIC STRUCTURE DETERMINATION OF IN-SITU GROWN OXIDES AND 2D MATERIALS
Eli Rotenberg, Lawrence Berkeley National Laboratory, CA/Us

14:00 - 14:30 IN SITU X-RAY STUDIES OF EPITAXIAL OXIDE NANOCOMPOSITE FORMATION
Matt Highland[1]; Dillon Fong[2]; Hua Zhou[3]; Carol Thompson[4]; Peter Baldo[5]; Jeffrey Eastman[5]; Paul Fuoss[5]; [1]Argonne National Lab, IL/Us, [2]Argonne National Laboratory, Us, [3]X-ray Science Division, Argonne National Lab, IL/Us, [4]Department Of Physics, Northern Illinois University, Us, [5]Materials Science Division, Argonne National Lab, IL/Us

14:30 - 15:00 ISLAND GROWTH DYNAMICS IN PULSED LASER DEPOSITION OF $SRTIO_3$
Gyula Eres, Oak Ridge National Laboratory, TN/Us

13:30 - 15:00 Thursday, August 3, 2017 Eldorado Grand Ballroom (B)
Bulk Crystal Growth (4 of 5)
Moderation: Robert Feigelson[1]; Aleksandar Ostrogorsky[2]; [1]Stanford/US, [2] IIT/US

13:30 - 14:00 HIGH PRESSURE FLOATING ZONE GROWTH OF CORRELATED ELECTRON TRANSITION METAL OXIDES
John Mitchell; Junjie Zhang; Hong Zheng; Michael Norman; Daniel Phelan; Antia Botana; Argonne National Laboratory, IL/Us

14:00 - 14:15 EFFECT OF MOLTEN-ZONE INSTABILITY ON THE IMPURITY PARTITIONING DURING FZ GROWTH
Satoshi Uda; Yutaroh Takehara; Chihiro Koyama; Tohoku University, Jp

14:15 - 14:30 SEARCHING FOR IDEAL BI-SYSTEM TOPOLOGICAL INSULATOR, PB-SYSTEM TOPOLOGICAL CRYSTALLINE INSULATOR AND THEIR TOPOLOGICAL SUPERCONDUCTOR
Genda Gu, Brookhaven National Laboratory, NY/Us

14:30 - 14:45 GROWTH OF 8-HYDROXYQUINOLINE SINGLE CRYSTAL BY MODIFIED CZOCHRALSKI GROWTH TECHNIQUE AND CHARACTERIZATION
SONU Kumar[1]; Binay Kumar[2]; [1]UNIVERSITY OF DELHI, In, [2]Crystal Lab, Department of Physics & Astrophysics, University of Delhi, Delhi-7, India, In

14:45 - 15:00 GROWTH, INTERNAL STRUCTURE AND MECHANICAL PROPERTIES OF PLATINUM FIBER CRYSTALS BY ALLOY-MICRO-PULLING-DOWN METHOD
Takayuki Nihei[1]; Yuui Yokota[2]; Akihiro Yamaji[1]; Yuji Ohashi[3]; Shunsuke Kurosawa[4]; Kei Kamada[3]; Akira Yoshikawa[1]; [1]Institute for Materials Research, Tohoku University, Jp, [2]Tohoku University, Jp, [3]NICHe, Tohoku University, Jp, [4]Department of Physics, Yamagata University, Jp

15:30 - 17:00 Thursday, August 3, 2017 Anasazi Ballroom North
Industrial Crystal Growth Technologies and Equipment (2 of 2)
Moderation: Matt Whittaker, Gooch & Housego/US

15:30 - 16:00 REFRACTORY METALS - MATERIAL OF CHOICE FOR SINGLE CRYSTAL GROWTH .
Heike Larcher, Plansee SE, At

16:00 - 16:15 IMPROVED CARBON AND GRAPHITE MATERIALS FOR CRYSTAL GROWTH
Chong Chen; Helen Mayer; GrafTechAGM, OH/Us

16:15 - 16:30 APPLICATION OF HEATER MAGNET MODULE FOR IMPROVED CRYSTAL GROWTH OF SEMICONDUCTORS
Christiane Frank-Rotsch[1]; Iryna Buchovska[2]; Natasha Dropka[3]; Radoslaw Zwierz[1]; Peter Rudolph[4]; Frank Kießling[2]; [1]Leibniz Institute for Crystal Growth, De, [2]Leibniz Institute for Crystal Growth (IKZ), De, [3]Leibniz Institute for Crystal Growth (IKZ) , De, [4]Crystal Technology Consulting, De

16:30 - 16:45 TEMPERATURE UNIFORMITY OF INDUCTION-HEATED OMVPE SUSCEPTORS AT HIGH TEMPERATURE
Kuang-Hui Li[1]; Hamad Alotaibi[2]; Xiaohang Li[2]; [1]KAUST, Sa, [2]King Abdullah University of Science and Technology (KAUST), Sa

16:45 - 17:00 A SMALL BUSINESS PERSPECTIVE ON INDUSTRIAL CRYSTAL GROWTH
Candace Lynch[1]; Thomas Caughey[2]; Sergey Selin[2]; Tony Inzalaco[2]; [1]Inrad Optics, Inc., Us, [2]Inrad Optics, Inc., NJ/Us

15:30 - 17:20 Thursday, August 3, 2017 Anasazi Ballroom South
Bulk Growth and Epitaxy for Power Electronics (3 of 3)
Moderation: Michael Dudley; Balaji Raghothamachar, Stony Brook/US

15:30 - 16:00 LATEST PROGRESS IN GALLIUM OXIDE EPITAXIAL GROWTH TECHNOLOGIES FOR POWER DEVICES
Masataka Higashiwaki[1]; Yoshiaki Nakata[1]; Man Hoi Wong[1]; Keita Konishi[2]; Takafumi Kamimura[1]; Ken Goto[3]; Kohei Sasaki[3]; Akito Kuramata[3]; Shigenobu Yamakoshi[3]; Hisashi Murakami[2]; Yoshinao Kumagai[2]; [1]National Institute of Information and Communications Technology, Jp, [2]Department of Applied Chemistry, Tokyo University of Agriculture and Technology, Jp, [3]Tamura Corporation, Jp

16:00 - 16:30 FAST CVD CRYSTAL GROWTH OF 4H-SIC FOR POWER DEVICES
Hidekazu Tsuchida[1]; Isaho Kamata[2]; Masahiko Ito[2]; Tetsuya Miyazawa[2]; Norihiro Hoshino[2]; [1]Central Resea r ch Institute of Electric Power Industry (CRIEPI), Jp, [2]Central Research Institute of Electric Power Industry (CRIEPI), Jp

16:30 - 17:00 GROWTH AND CHARACTERIZATION OF SIC
Balaji Raghothamachar[1]; Michael Dudley[1]; Yu Yang[2]; Jianqiu Guo[1]; [1]Stony Brook University, NY/Us, [2]Stony Brook University,

17:00 - 17:20 UNDERSTANDING THE MICROSTRUCTURES OF TRIANGULAR DEFECTS IN 4H-SIC HOMOEPITAXIAL LAYERS GROWN BY CVD METHOD
Jianqiu Guo[1]; Yu Yang[1]; Jungyu Kim[2]; Tae Jin Kim[1]; Balaji Raghothamachar[1]; Michael Dudley[1]; [1]Stony Brook University, NY/Us, [2]LG Chem, Kr

15:30 - 17:00 Thursday, August 3, 2017 Chapel Room
Modeling of Crystal Growth Processes (1 of 3)
Moderation: JeffreyJ. Derby, U of Minnesota/Us

15:30 - 16:00 INSIGHTS INTO THE MATERIALS SCIENCE OF COLLOIDAL CRYSTALS FORMED BY DNA-FUNCTIONALIZED PARTICLES
Talid Sinno; Ian Jenkins; Mehdi Zanjani; John Crocker; University of Pennsylvania, Us

16:00 - 16:30 DIRECT CALCULATION OF SOLID-LIQUID INTERFACIAL FREE ENERGIES FROM EQUILIBRIUM MOLECULAR DYNAMICS SIMULATIONS.
Luis Zepeda, Lawrence Livermore National Laboratory, CA/Us

16:30 - 17:00 ANALYSIS OF RE-MELTING PROCESS OF SILICON GROWN BY TRANSVERSE MAGNETIC FIELD APPLIED CZ METHOD
Koichi Kakimoto, Research Institute for Applied Mechanics, Kyushu University, Jp

15:30 - 17:00 Thursday, August 3, 2017 Eldorado Grand Ballroom (A)
Symposium on Epitaxy of Complex Oxides (9 of 11)
Moderation: Ho Nyung Lee[1]; Darrel Schlom[2]; Lane Martin[3]; [1]ONRL/US, [2]Cornell/US, [3]Berkeley/US

15:30 - 16:00 CRYSTALLIZATION BY PARTICLE ATTACHMENT OF METASTABLE NANOPARTICLES IN PULSED LASER DEPOSITION
David Geohegan, Oak Ridge National Laboratory, TN/Us

16:00 - 16:30 ENGINEERING DEFECT FORMATION IN FUNCTIONAL OXIDE THIN FILMS AND HETEROSTRUCTURES
Regina Dittmann[1]; Felix Gunkel[2]; Felix Hensling[1]; Chencheng Xu[1]; [1]Forschungszentrum Jülich GmbH, De, [2]Institut f¨ur Werkstoffe der Elektrotechnik II, RWTH Aachen University, De

16:30 - 16:45 TUNING THE SUPERCONDUCTIVITY IN SINGLE-LAYER FESE/OXIDES BY INTERFACE ENGINEERING
Haichao Xu; Rui Peng; Donglai Feng; Fudan University, Cn

16:45 - 17:00 RAPID-ANNEAL SOLID PHASE EPITAXY OF ATOMICALLY FLAT HIGH SURFACE ENERGY RUO_2(001) FILMS
Paul Snijders[1]; Yang Wang[1]; Yang Song[1]; Rui Peng[1]; Andreas Herklotz[1]; Matthew Chisholm[1]; Zili Wu[1]; Thomas Ward[1]; Hanno Weitering[2]; [1]Oak Ridge National Laboratory, Us, [2]University of Tennessee, TN/Us

17:00 - 17:30 Special Q&A session: What they don't teach you about industrial crystal growth in school **Anasazi Ballroom North**
Moderation: Matt Whittaker[1], Candance Lynch[2] , Kevin Zawailski[3], [1] Gooch & Housego/US, [2]INRAD/US,[3]BAE/US

15:30 - 16:00 Thursday, August 3, 2017 Bulk Crystal Growth (5 of 5) Moderation: Robert Feigelson,Stanford/US **Eldorado Grand Ballroom (B)**

15:30 - 15:45 DETACHED MELT AND VAPOR GROWTH OF INI IN SUBSA FURNACE
Aleksandar Ostrogorsky[1]; Vladimir Riabov[2]; Martin Volz[3]; Lodewijk Van Den Berg[4]; Arne Cröll[5]; [1], , [2]Illinois Institute of Technology, IL/Us, [3]NASA Marshall Space Flight Center, AL/Us, [4]Constellation Technology, FL/Us, [5]NASA MSFC, AL/Us

15:45 - 16:00 EFFECT OF POWER HISTORY ON THE SHAPE AND THE THERMAL STRESS OF LARGE SIZE SAPPHIRE CRYSTAL DURING THE KYROPOULOS PROCESS
Tran Phu Nguyen[1]; Jyh-Chen Chen[2]; Hsiao-Tsun Chuang[2]; Chieh Hu[2]; [1]National Central University, Vn, [2]National Central University, Tw

Friday, August 4, 2017
Day at a glance

	Friday 8/4			
Room	Anasazi North	Zia	Eldorado (A)	Eldorado (B)
7:30-8:00	BREAKFAST			
8:00-10:00	MAT'LS FOR PV & ENERGY	NANO 1	Symp Epi Com. Oxide 10	MODELING 2
10:00-10:30	COFFEE BREAK			
10:30-12:00		NANO 2	Symp Epi Com. Oxide 11	MODELING 3

Friday, August 4, 2017

08-04-2017
08:00 - 10:00 **Materials for Photovoltaics and Energy Technology (1 of 1)**
Moderation: JohnF. Geisz, NREL/Us
Anasazi Ballroom North

08:00 - 08:20 LOW COST III-V PHOTOVOLTAICS BY HYDRIDE VAPOR PHASE EPITAXY
Kevin Schulte[1]; John Simon[2]; Nikhil Jain[2]; John Mangum[3]; Corinne Packard[3]; Brian Gorman[3]; Aaron Ptak[2]; [1], , [2]National Renewable Energy Laboratory, CO/Us, [3]Colorado School of Mines Department of Metallurgical and Materials Engineering, CO/Us

08:20 - 08:40 FIRST BIFACIAL GROWTH AND BIFACIAL EPITAXIAL LIFT OFF (B-ELO) OF 3J SOLAR CELLS ON 6 INCH GAAS SUBSTRATES
Kamran Forghani; Andree Wibowo; Chris Stender; Joshua Wood; Noren Pan; MicroLink Devices Inc., IL/Us

08:40 - 09:00 ELECTRON CHANNELING CONTRAST IMAGING OF GAINP/GAAS/SI SOLAR CELLS
Ryan France[1]; Markus Feifel[2]; Jens Ohlmann[2]; David Lackner[2]; Frank Dimroth[2]; [1]National Renewable Energy Laboratory, Us, [2]Fraunhofer Institute for Solar Energy, De

09:00 - 09:20 GROWTH OF GAASPN P-I-N JUNCTIONS ON SI SUBSTRATES WITH LATTICE MATCHING CONDITIONS FOR MONOLITHIC III-V/SI MULTI-JUNCTION SOLAR CELLS
Keisuke Yamane; Kento Sato; Masaya Goto; Kenjiro Takahashi; Hiroto Sekiguchi; Hiroshi Okada; Akihiro Wakahara; Toyohashi University of Technology, Jp

09:20 - 09:40 SELECTIVE AREA GROWTH OF GAAS ON SI FOR PHOTOVOLTAIC APPLICATIONS
Michelle Vaisman[1]; Nikhil Jain[2]; Qiang Li[3]; Kei Lau[3]; Emily Makoutz[4]; William McMahon[4]; Jeramy Zimmerman[5]; Adele Tamboli[4]; Emily Warren[4]; [1]National Renewable Energy Lab, Us, [2]National Renewable Energy Laboratory, CO/Us, [3]Hong Kong University of Science and Technology, Hk, [4]National Renewable Energy Lab, CO/Us, [5]Colorado School of Mines, Us

09:40 - 10:00 SINGLE-CRYSTAL-LIKE THIN FILM III-V MATERIAL DIRECTLY GROWN ON HASTELLOY TAPE FOR FLEXIBLE SOLAR CELLS
Jae-Hyun Ryou[1]; Venkat Selvamanickam[2]; Sara Pouladi[2]; Mojtaba Asadirad[2]; Monika Rathi[2]; Seung Kyu Oh[2]; Devendra Khatiwada[2]; Pavel Dutta[2]; Shahab Shervin[2]; Yao Yao[2]; Yongkuan Li[2]; Jie Chen[2]; [1]University of Houston, TX/Us, [2]University of Houston, Us

08:00 - 10:00 Friday, August 4, 2017 Zia Ballroom
Nanocrystals, Quantum Dots, and Nanowires (1 of 2)
Moderation: Kris Bertness[1]; Daniel Feezell[2]; [1]NIST/US, [2]U of New Mexico/US

08:00 - 08:30 THREE-DIMENSIONAL, HIGH ASPECT RATIO GAN NANOSTRUCTURES BY TOP-DOWN ETCHING
George Wang[1]; Benjamin Leung[2]; Miao-Chan Tsai[2]; Changyi Li[3]; Ganesh Balakrishnan[4]; [1]Sandia National Laboratories, Us, [2]Sandia National Laboratories, NM/Us, [3]The University of New Mexico, NM/Us, [4]University of New Mexico, Us

08:30 - 08:50 EFFECT OF ALGAN UNDERLAYER ON REVERSE-LEAKAGE CURRENT REDUCTION IN GAN/INGAN CORE-SHELL NANOSTRUCTURE LIGHT-EMITTING DIODES
Mohsen Nami[1]; Ashwin Rishinaramangalam[2]; Darryl Shima[1]; Ganesh Balakrishnan[1]; Steve Brueck[2]; Daniel Feezell[2]; [1]University of New Mexico, Us, [2]University of New Mexico, Center for High Technology Materials, Us

08:50 - 09:10 POLARITY INVERSION IN EPITAXIAL ALN: NEW INSIGHTS IN OBTAINING SELECTIVE AREA EPITAXY OF GA-POLAR GAN-ON-SILICON
Kris Bertness[1]; Matt Brubaker[2]; Alexana Roshko[2]; Joel Weber[2]; Todd Harvey[2]; Paul Blanchard[2]; Bryan Spann[2]; Norman Sanford[2]; [1]National Institute of Standards and Technology, CO/Us, [2]NIST, CO/Us

09:10 - 09:30 QUANTUM SIZE CONTROLLED ETCHING OF INGAN QUANTUM DOTS
George Wang[1]; Benjamin Leung[2]; Xiaoyin Xiao[2]; Arthur Fischer[2]; Daniel Koleske[2]; Ping Lu[2]; Miao-Chan Tsai[2]; Michael Coltrin[2]; Jeffrey Tsao[2]; [1]Sandia National Laboratories, Us, [2]Sandia National Laboratories, NM/Us

09:30 - 10:00 SELF-ASSEMBLED GROWTH OF GAN NANOWIRES ON METALLIC SUBSTRATES
Lutz Geelhaar, Paul-Drude-Institut für Festkörperelektronik, De

08:15 - 10:00 Friday, August 4, 2017 Eldorado Grand Ballroom (B)

Modeling of Crystal Growth Processes (2 of 3)

Moderation: Jeffrey Derby, U of Minnesota/US

08:15 - 08:45 PHASE FIELD MODELING OF GRAIN STRUCTURE EVOLUTION DURING DIRECTIONAL SOLIDIFICATION OF MULTI-CRYSTALLINE SILICON SHEET

Chung-Wen Lan; H K Lin; Dept. of Chem. Eng., National Taiwan University, Tw

08:45 - 09:00 OPTIMIZATION OF HEAT TRANSFER DURING THE DIRECTIONAL SOLIDIFICATION PROCESS OF 1600 KG SILICON FEEDSTOCK CAPACITY

Hu Chieh[1]; Jyh-Chen Chen[2]; Thi Hoai Thu Nguyen[1]; Hou Zhi Zhong[1]; Chun Hung Chen[3]; [1]Department of Mechanical Engineering, National Central University, Tw, [2]National Central University, Tw, [3]Research and Development Division, GlobalWafers Co., Ltd., Tw

09:00 - 09:15 CONTROL OF CRUCIBLE MOVEMENT ON MELTING PROCESS AND CARBON CONTAMINATION IN CZOCHRALSKI SILICON CRYSTAL GROWTH

Xin Liu; Xuefeng Han; Satoshi Nakano; Koichi Kakimoto; Research Institute for Applied Mechanics, Kyushu University, Jp

09:15 - 09:30 3D GLOBAL MODELING OF INDUCTION HEATING OF SILICON IN THE FLOATING ZONE PROCESS

Xuefeng Han; Satoshi Nakano; Xin Liu; Koichi Kakimoto; Research Institute for Applied Mechanics, Kyushu University, Jp

09:30 - 10:00 ANALYSIS OF THE V/G CRITERION IN SI SINGLE CRYSTAL GROWTH

Francois Dupret, Université catholique de Louvain, Be

08:30 - 10:00 Friday, August 4, 2017 Eldorado Grand Ballroom (A)

Symposium on Epitaxy of Complex Oxides (10 of 11)

Moderation: Ho Nyung Lee[1]; Darrel Schlom[2]; Lane Martin[3]; [1]ONRL/US, [2]Cornell/US, [3]Berkeley/US

08:30 - 08:45 COMPOSITION CONTROL AND STEP COVERAGE FOR ALD DEPOSITED PBTIO3 AND PZT THIN FILMS
Nick Sbrockey[1]; Gary Tompa[2]; Mark Fanton[3]; Kathleen Trumbull[3]; Robert Lavelle[3]; David Snyder[4]; Ronald Polcawich[5]; Daniel Potrepka[5]; [1]Structured Materials Industries, NJ/Us, [2]Structured Materials Industries, Inc., NJ/Us, [3]Penn State University, Us, [4]Penn State Applied Research Laboratory, PA/Us, [5]U.S. Army Research Laboratory, Us

08:45 - 09:00 EPITAXIAL GROWTH OF $CAMN_7O_{12}$ THIN FILMS BY BOTH OZONE-PLD AND OXIDE MBE
Amanda Huon[1]; Ho Nyung Lee[2]; Steven May[1]; [1]Drexel University, PA/Us, [2]Oak Ridge National Laboratory, TN/Us

09:00 - 09:15 SELF-TEMPLATED EPITAXIAL GROWTH OF LOW-SYMMETRY VANADIUM DIOXIDES ON PEROVSKITES
Xiang Gao[1]; Shinbuhm Lee[1]; Matthew Chisholm[2]; Ho Nyung Lee[1]; [1]Oak Ridge National Laboratory, TN/Us, [2]Oak Ridge National Laboratory, Us

09:15 - 09:30 MBE GROWN (LU1-XFEO3)M/(LU1-YMN(1/3)FE(2/3)O3)N SUPERLATTICES
Rachel Steinhardt[1]; Julia Mundy[2]; Megan Holtz[3]; Charles Brooks[1]; Darrell Schlom[3]; [1]Cornell University, NY/Us, [2]berkeley university, NY/Us, [3]Cornell University, Us

09:30 - 10:00 25 YEARS OF PROGRESS IN PEROVSKITE-TYPE SUBSTRATE CRYSTAL GROWTH AT THE LEIBNIZ INSTITUTE FOR CRYSTAL GROWTH
Christo Guguschev[1]; Detlef Klimm[1]; Reinhard Uecker[1]; Mario Brützam[1]; Isabelle Schulze-Jonack[1]; Zbigniew Galazka[2]; Rainer Bertram[1]; Steffen Ganschow[1]; Matthias Bickermann[1]; [1]Leibniz Institute for Crystal Growth, De, [2]Institute for Crystal Growth, De

10:30 - 12:00 Friday, August 4, 2017 Eldorado Grand Ballroom (A)
Symposium on Epitaxy of Complex Oxides (11 of 11)
Moderation: Ho Nyung Lee[1]; Darrel Schlom[2]; Lane Martin[3]; [1]ONRL/US, [2]Cornell/US, [3]Berkeley/US

10:30 - 11:00 CHEMICAL SOLUTION SYNTHESIS OF EPITAXIAL THIN-FILM OXIDES
José Manuel Vila-Fungueiriño[1]; Beatriz Rivas-Murias[2]; Andrés Gómez[3]; Jaume Gazquez[3]; Marti Gich[3]; Adrian Carretero-Genevrier[1]; Francisco Rivadulla[2]; [1]Institut d´Électronique et des Systèmes (IES), Fr, [2]Universidad de Santiago de Compostela, Es, [3]ICMAB, CSIC, Es

11:00 - 11:30 *IN SITU* OBSERVATION OF LAYER-BY-LAYER MEAN INNER POTENTIAL OSCILLATIONS AND PRECISE GROWTH CONTROL OF OXIDE INTERFACES
Yuefeng Nie, Nanjing University, Cn

11:30 - 12:00 ATOMICALLY ENGINEERED FERROIC LAYERS YIELD A ROOM-TEMPERATURE MAGNETOELECTRIC MULTIFERROIC
Julia Mundy, University of California, Berkeley, CA/Us

10:30 - 11:00 Friday, August 4, 2017 Eldorado Grand Ballroom (B)
Modeling of Crystal Growth Processes (3 of 3)
Moderation: Jeffrey Derby, U of Monnesota/US

10:30 - 10:45 EFFECT OF WETTING ON THE TRANSITION FROM HOMOGENEOUS TO HETEROGENEOUS NUCLEATION OF DEUTERIUM
Luis Zepeda, Lawrence Livermore National Laboratory, CA/Us

10:45 - 11:00 ANALYSIS OF SILICON CARBIDE AND SILICON NITRIDE PARTICLE ENGULFMENT DURING MULTI-CRYSTAL SILICON GROWTH FOR PHOTOVOLTAICS
Yutao Tao[1]; Jeffrey Peterson[1]; Christian Reimann[2]; Jochen Friedrich[2]; Thomas Jauss[3]; Tina Sorgenfrei[3]; Arne Croell[4]; Jeffrey Derby[1]; [1]University of Minnesota, MN/Us, [2]Fraunhofer IISB, De, [3]University of Freiburg, De, [4]University of Alabama in Huntsville, AL/Us

10:30 - 11:30 Friday, August 4, 2017 Zia Ballroom
Nanocrystals, Quantum Dots, and Nanowires (2 of 2)
Moderation: Kris Bertness[1]; Daniel Feezell[2]; [1]NIST/US, [2]U of New Mexico/US

10:30 - 10:50 ELECTRON-BEAM-INDUCED CURRENT IN GAAS/FE CORE-SHELL NANOWIRES
Mingze Yang; Simon Watkins; Karen Kavanagh; Department of Physics, Simon Fraser University, BC/Ca

10:50 - 11:10 MOVPE OF INAS QDS ON INP EMITTING AROUND THE TELECOM C-BAND

Andrey Krysa[1]; Joanna Skiba-Szymanska[2]; Jan Huwer[2]; Tina Müller[2]; M Felle[3]; Brett Harrison[4]; R M Stevenson[2]; Jon Heffernan[4]; Andrew Shields[2]; [1]National Centre for III-V Technologies, University of Sheffield, Gb, [2]Toshiba Research Europe Limited, Gb, [3]Department of Engineering, University of Cambridge, Gb, [4]EPSRC National Centre for III-V Technologies, Dept. of Electronic and Electrical Eng., University of Sheffield, Gb

11:10 - 11:30 LARGE AREA UNIFORM VLSI NANOWIRE GROWTH TOOL

Serdal Okur[1]; Tom Salagaj[2]; Nick Sbrockey[2]; Gary Tompa[3]; Jignesh Vanjaria[4]; Ebraheem Azhar[4]; Hongbin Yu[4]; [1]Structured Materials Industries, Inc., Us, [2]Structured Materials Industries, NJ/Us, [3]Structured Materials Industries, Inc., NJ/Us, [4]Arizona State University, Us

26th AACGE Western Section Conference on Crystal Growth & Epitaxy

Stanford Sierra Camp, Fallen Leaf Lake, CA

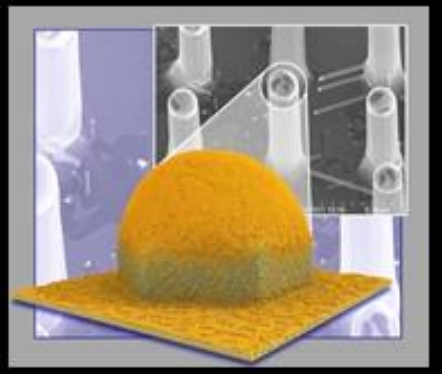
June 10-13, 2018

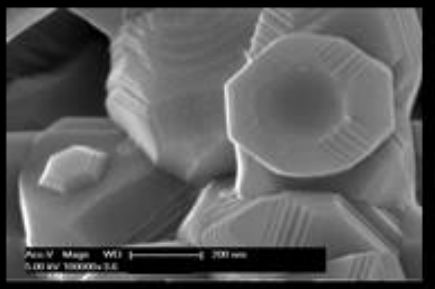
Past Session Topics included:

- Fundamentals
- Biomineralization, Bioinspired Materials and Self-assembly
- Energy Storage and Conversion
- Low dimensional materials

•The 25th AACGE Western Section Conference on Crystal Growth & Epitaxy will continue the tradition of a highly interdisciplinary program with emphasis on an understanding of the fundamental nanoscale physics and chemistry that are central to the growth of crystals for a wide array of technologies. The beautiful Fallen Leaf Lake Lodge is an intimate venue with nearby hiking and boating. Communal dinners and single session format allow time for both formal and informal discussion.

Visit www.crystalgrowth.org for the Call for Abstracts, registration information, and other announcements.





Conference sponsored

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The 19th International Conference on Crystal Growth and Epitaxy (ICCGE-19)

Keystone, Colorado, U.S.A. * July 28–August 2, 2019

and

The 17th International Summer School on Crystal Growth (ISSCG-17)

Colorado, U.S.A. * July 21–27, 2019 (Tentative)

You are invited to the beautiful mountains of Colorado for the 19th International Conference on Crystal Growth and Epitaxy (ICCGE-19) and the 17th International Summer School on Crystal Growth (ISSCG-17), to be convened over two weeks in July-August, 2019. ICCGE will be held at the Keystone Resort and Conference Center, featuring modern, comfortable accommodations and the largest conference center in the Rocky Mountains. ISSCG will take place at a companion location to be determined.

These triennial meetings, organized under the auspices of the International Organisation for Crystal Growth (IOCG), are the premier forums for the world's crystal growth communities. The International Summer School on Crystal Growth will feature world-renowned scholars delivering tutorials on the fundamentals and practice of crystal growth. The International Conference on Crystal Growth and Epitaxy will provide a forum for the presentation and discussion of recent research and development activities in crystal growth and will feature all aspects of bulk crystal and epitaxial thin film growth; sessions will integrate fundamentals, experimental and industrial growth processes, characterization, and applications.

The technical program will include both oral and poster sessions, as well as plenary and invited talks to provide a complete picture of the latest developments in the fields. The official language of the conference will be English. Conference proceedings will be reviewed and published in a special issue of the Journal of Crystal Growth.

The magnificent setting of the Rocky Mountains and the American West will provide multiple opportunities for recreation and enjoyment of nature for the conferees and their families before and after, as well as during the conference. There will be a full social program and vendor exhibit together with the technical sessions.

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Organized under the auspices of the International Organisation for Crystal Growth

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Celebrating 50 years of Crystal Growth In the U.S.A., 1969-2019