ACCGE-20

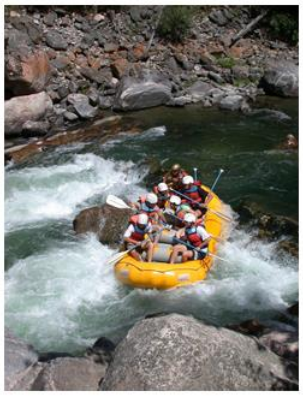
OMVPE-17

Big Sky, Montana, USA
2015

Program Book

20th American Conference on Crystal Growth and Epitaxy (ACCGE-20)
and
17th U.S. Biennial Workshop on Organometallic Vapor Phase Epitaxy (OMVPE-17)
and
The Second 2D Electronic Materials Symposium





August 2-7, 2015

Table of Contents

Maps of Conference Area and Resort

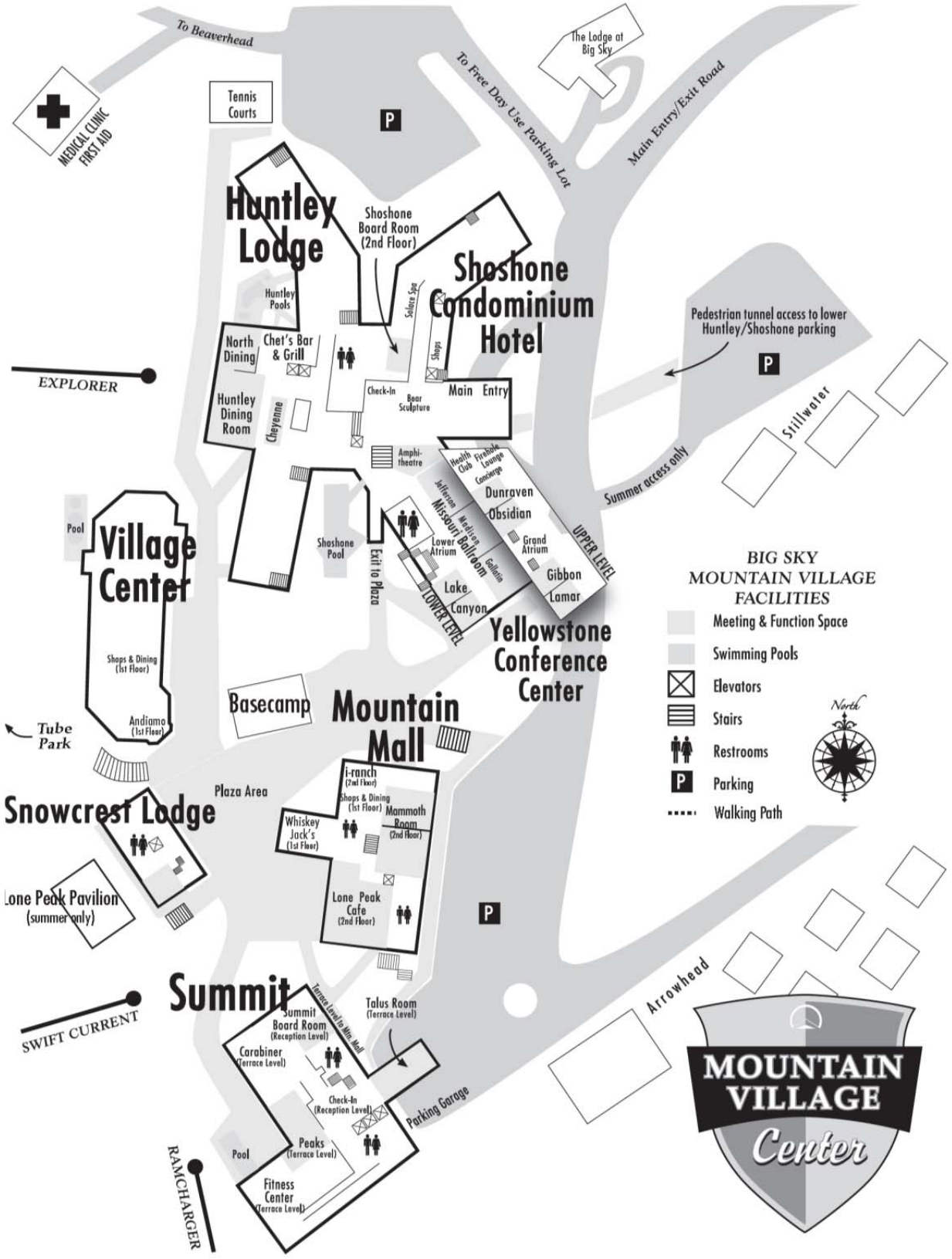


Figure 1 Big Sky Resort Conferene Area and Lodging

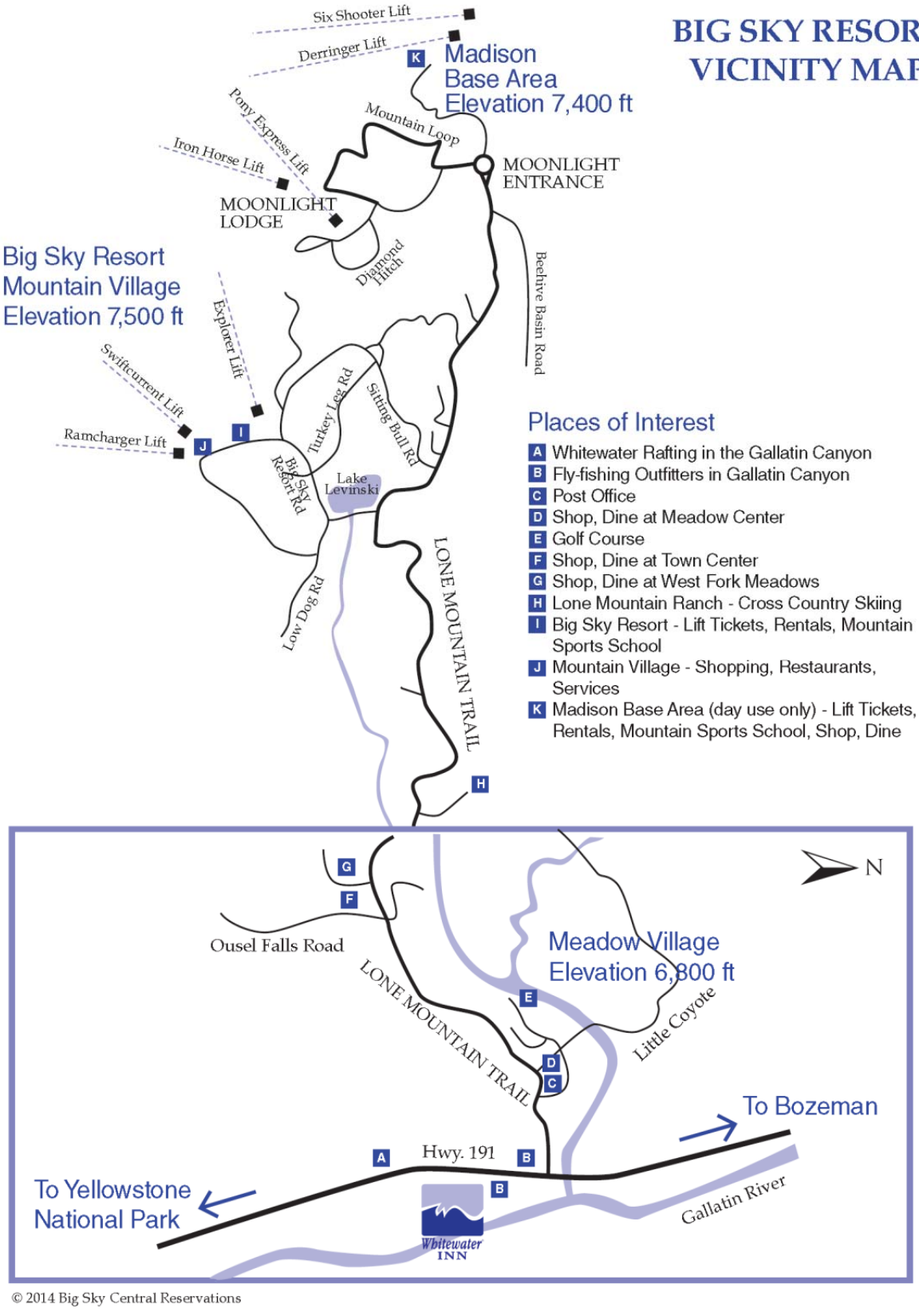


Figure 2 Big Sky Road Map

Conference Corporate Sponsors

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

Coherent Advanced Crystal Group
Crystal Photonics
Dock Chemicals
Dow Electronic Materials
Elsevier BV – Journal of Crystal Growth
J. A. Woollam, Inc.
Kurt Gaskill
ProChem
Thermcraft, Incorporated
UMICORE
W. C. Hereaus – Engineered Materials Division
Wide Band Gap Materials – Division of II-VI, Inc.

Conference Funding Support

At press time, the following organizations have graciously offered to support to this meeting:

Army Research Office
Lawrence Livermore National Laboratory
National Science Foundation
Sandia National Laboratory
The Olsen Foundation

Welcome to Big Sky, Montana

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

- The 20th American Conference on Crystal Growth and Epitaxy (ACCGE-20)
- The 17th Workshop on Organometallic Vapor Phase Epitaxy (OMVPE-17)

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 your personal interests. Efforts have been made to set up the conference schedule to flow among topical areas and avoid overlapping or competing sessions, but this is something that cannot be accomplished with absolute perfection given the very full program and the wide range of interests of attendees.

We trust that the outstanding technical synergies among these meetings, the beautiful surroundings of Big Sky, the lavish hospitality of the Big Sky Resort 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.

Joan Redwing
Luke Mawst

Conference Organizers

ACCGE Conference Chair
Joan Redwing, The Pennsylvania State University

OMVPE Conference Chair
Luke Mawst, University of Wisconsin

ACCGE Program Chair
Candace Lynch, Inrad Optics

OMVPE Program Chairs
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John Geisz, National Renewable Energy Lab

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Robert Biefeld, Sandia National Lab

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Russell Dupuis, Georgia Institute of Technology

Government Support
Kurt Gaskill, Naval Research Laboratory

Industrial Exhibit
Harry Niedecken, WirlNet Inc.

Publicity
Simon Watkins, Simon Fraser University
Mike Tischler, Cooledge Lighting

ACCGE/ OMVPE Proceedings
Tania Paskova, North Carolina State University
Roger Qiu, Lawrence Livermore National Laboratory
Catherine Caneau, Corning
Jeff Cederberg, Sandia National Laboratory

Photography Contest
Balaji Ragothamachar, Stonybrook University

AACG Awards
Tom Kuech, University of Wisconsin
Chris Wang, MIT Lincoln Laboratory

Web Site & Information Management
Shoshana Nash, American Association for Crystal Growth

AACG Organization (2015-2017)

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Christine A. Wang (MIT Lincoln Laboratory)
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Section Presidents:

WEST: Edith Bourret-Courchesne (Lawrence Berkeley Laboratory)
TENNESSEE: Merry Spurrier-Koschan (University of Tennessee)

OMVPE

OMVPE Workshop Program Committee (2015):

Andrew Allerman, Sandia National Laboratories
Robert Biefeld, Sandia National Laboratories
Catherine Caneau, Corning Incorporated
Jeff Cederberg, Sandia National Laboratories
Russell Dupuis, Georgia Institute of Technology
John Geisz, National Renewable Energy Laboratory
Luke Mawst, University of Wisconsin
Mike Tischler, Cooledge Lighting
Christine Wang, MIT Lincoln Laboratory
Simon Watkins, Simon Fraser University

OMVPE Symposia and Organizers:

Novel OMVPE Techniques and In-Situ Monitoring
Oliver Pitts, National Research Council of Canada, Email: oliver.pitts@nrc-cnrc.gc.ca

OMVPE of Compound Semiconductors for Optoelectronics
Jeff Cederberg, Sandia National Laboratory, Email: jgceder@sandia.gov

OMVPE of Wide Bandgap Materials for Power Electronics
Dan Koleske, Sandia National Laboratory, Email: ddkoles@sandia.gov

Joint OMVPE/ACCGE Symposia and Organizers:

III-V Nitride, SiC, and Other Wide Bandgap Materials
Dirk Ehrentraut, Soraa, Email: dehrentraut@soraa.com
Nelson Tansu, Lehigh University, Email: tansu@lehigh.edu

III-Vs on Silicon
ACCGE Tyler Grassman, Ohio State University, Email: grassman.5@osu.edu
OMVPE Kerstin Volz, The University of Marburg, Email: volz@staff.uni-marburg.de

Nanocrystals, Quantum Dots and Nanowires
ACCGE Jeffrey Urban, Lawrence Berkeley National Laboratory, Email: jjurban@lbl.gov
OMVPE Hoe Tan, Australian National University, Email: hoe.tan@anu.edu.au

Materials for Photovoltaics and Energy Technology
ACCGE Ted Ciszek, Siliconsultant, Email: ted_ciszek@siliconsultant.com
OMVPE Rao Tatavarti, MicroLink Devices, Email: rtatavarti@mldevices.com

Second Symposium on 2D Electronic Materials:

ACCGE Kurt Gaskill, U.S. Naval Research Laboratory, Email: kurt.gaskill@nrl.navy.mil
OMVPE: Chris Wang, MIT Lincoln Laboratory, Email: wang@ll.mit.edu

ACCGE Symposia and Organizers:

Biological, Biomimetic, and Organic Crystallization (ACCGE)
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Detector Materials: Scintillators and Semiconductors (ACCGE)
Mariya Zhuravleva, University of Tennessee, Knoxville, Email: mzhuravl@utk.edu
Stacy Swider, CapeSym, Email: swider@capesim.com

Fundamentals of Crystal Growth (ACCGE)
Peter Vekilov, University of Houston, Email: vekilov@uh.edu

Industrial Crystal Growth Technologies and Equipment (ACCGE)
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Govindhan Dhanaraj, Aymont Technology, Email: dhanaraj@aymont.com

Modeling of Crystal Growth Processes (ACCGE)
Jeffrey Derby, University of Minnesota, Email: derby@umn.edu

Nonlinear Optical and Laser Host Materials (ACCGE)
Kevin Zawilski, BAE Systems, Email: zawilski@gmail.com
Dieter Jundt, Gooch and Housego, Email: djundt@goochandhousego.com

ACCGE/OMVPE Corporate Exhibition

Visit the Booths in

Mammoth and the Lone Peak Cafe

Ambrell Induction Heating	www.ambrell.com
Crosslight Software Inc	www.crosslight.com
Dock Chemicals	www.dockchemicals.com
Dow Electronic Materials	www.dowelectronicmaterials.com
k-Space Associates, Inc.	www.k-space.com
Matheson Tri-Gas, Inc	www.mathesongas.com
Mesta Electronics, Inc.	www.mesta.com
Namiki Precision of California	www.namiki.net
Photonic Science Ltd	www.photonic-science.com
ProChem, Inc.	www.prochemonline.com
SAFC HiTech	www.safcglobal.com
Semiconductor Technology Research	www.str-soft.com
Structured Materials Industries, Inc.	www.structuredmaterials.com
W. C. Hereaus – Eng. Materials Division	www.heraeus.com
Zircar Ceramics, Inc.	www.zircarceramics.com

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. Current interest in low dimensional materials and biotechnology has provided the crystal growth field with many new opportunities and challenges for materials preparation and device research. 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 all three meetings.

ACCGE-20 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-17 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 Montana will be temperate. It is a good idea to bring water along on any tours or walks around the area. Attendees are cautioned that the Big Sky Resort is at a rather high elevation (7500 feet or 2286 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.

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 American Association for Crystal Growth and its officers.

ACCGE-20 Photo Contest

Sponsored by the Journal of Crystal Growth

Photographs portraying scientific, technical, or artistic aspects of crystals, crystal growth, or characterization are solicited. The photos will be displayed each day as a slide show in addition to being displayed in a prominent location at the meeting. Submissions will be voted on by conference attendees, who will be asked to judge entries placed in the following 3 categories:

1) Natural untouched micrographs or photographs
2) Photographs including digital manipulation (and computational simulations)
3) Student microscopist/photographer

Judging and Awards

At the ballot box, the images and associated text will be displayed for viewing and judging purposes. Winners will be announced during the Banquet and Awards Ceremony. First-place entries will receive an award and a prize of $150. If a student wins best entry in the other categories, they are only eligible for one prize. Winning photos will be published in the AACG newsletter.

Contest Rules

1. The contest is open to all registered meeting attendees.
2. Contestants are allowed to submit one entry per category.
3. Entries must be submitted by email as a high resolution JPEG with a maximum size of 10MB.
4. Please do not put text on the photo unless it is part of the image.
5. In a separate text or Word file, please include the title, name(s), and affiliation(s) along with a description of the technical significance of the entry, and/or the artistry that it represents (50 words or less). Identify the appropriate category for judging (untouched micrograph or digitally modified). Student entries should be clearly noted.

Entries should be submitted by email to the photo contest organizer, Balaji Raghothamachar, by **July 17, 2015**.
Please direct any questions or comments to the organizer:

Balaji Raghothamachar
Stony Brook University
Phone: 1 (631) 632-4183
Email: balaji.raghothamachar@stonybrook.edu

Proceedings

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

Manuscript submission deadline: September 15, 2015

Authors who have a paper accepted for oral or poster presentations at the 20th American Conference on Crystal Growth and Epitaxy/17th 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 Elsevier author instructions 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:
Manuscript submission will open on July 1, 2015. Please submit manuscripts using the Elsevier Editorial System located at: http://ees.elsevier.com/crys/default.asp and select "SI: CYRS_ACCGE-20 OMVPE-17".

ACCGE-20 Proceedings Editors: **Tania Paskova**, North Carolina State University
E-mail: tmpaskov@ncsu.edu
Roger Qiu, Lawrence Livermore National Laboratory
Email: qiu2@llnl.gov

OMVPE-17 Proceedings Editors: **Catherine Caneau**, Corning
E-mail: CaneauCG@Corning.com
Jeff Cederberg, Sandia National Laboratory
Email: jgceder@sandia.gov

Wednesday Afternoon Group Excursions

Lone Peak Expedition

Take the Tram to the top! The ultimate scenic view and high point of your stay is at the top of Lone Peak in Big Sky Montana.

The Basecamp to Yellowstone is proud to present the experience of a lifetime to stand at an 11,166 ft. summit and view two national parks, three states and many mountain ranges. While you are taking in the views, keep an eye out for Billie and Nanny Goats that call Lone Peak home.

Expeditions will last 2-2.5 hours at the cost of $70/person.

Rafting with Geyser Whitewater Expeditions

Come raft the upper Gallatin River. This is a Class II-III whitewater rafting trip. This is a fun cruise through towering rock formations and some of the Gallatin's most popular rapids. A few good soakings and the occasional wildlife sighting make this a great adventure.

Complimentary transportation is provided to and from the Big Sky Resort. The rafting trips last about 3 hours round trip from our facility. Pricing is $55 per person for adults and $45 per person for children 12 and under.

*Geyser Whitewater Expeditions will do everything possible to insure an enjoyable trip. Because of the nature of outdoor adventure activities, we cannot be responsible for personal injury or lost or damaged articles. Participation is at your own risk. A signed assumption of risk agreement and liability release will be required prior to departure. Please no pregnant women, no drugs, or alcohol before or during trips. All participants' torsos must be 52" or less to fit our life jackets. Minimum age is six.

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 Mammoth. 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

	SUNDAY			MONDAY							TUESDAY							WEDNESDAY					THURSDAY					FRIDAY			
				Missouri (Jefferson)	Missouri (Madison)	Missouri (Gallatin)	Ampitheater	Lake / Canyon	Mammoth		Missouri (Jefferson)	Missouri (Madison)	Missouri (Gallatin)	Ampitheater	Lake / Canyon	Mammoth		Missouri (Jefferson)	Missouri (Madison)	Missouri (Gallatin)	Ampitheater		Missouri (Jefferson)	Missouri (Madison)	Missouri (Gallatin)	Ampitheater		Missouri (Jefferson)	Missouri (Madison)	Missouri (Gallatin)	Ampitheater
7:00-7:30			Registration in Missouri Ballroom foyer	Breakfast	Breakfast	Breakfast				Registration	Breakfast	Breakfast	Breakfast				Registration	Breakfast	Breakfast	Breakfast	Breakfast	Registration	Breakfast	Breakfast	Breakfast	Breakfast	Registration	Breakfast	Breakfast	Breakfast	Breakfast
7:30-800																															
8:00-8:30				Intro & Plenary	Intro & Plenary	Intro & Plenary					Awards Plenary	Awards Plenary	Awards Plenary					Thin Film 3	NLO /Laser 3	PV 3	2D Materials 7		Bulk 1	Industrial 1	OMVPE Opto-electronic 1	Bio 1		Bulk 5	Industrial 5	Nano 2	Bio 5
8:30-9:00																															
9:00-9:30																															
9:30-10:00																															
10:00-10:30				Coffee Break	Coffee Break	Coffee Break	Coffee Break				Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break			Coffee Break	Coffee Break	Coffee Break	Coffee Break		Coffee Break	Coffee Break	Coffee Break	Coffee Break		Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:30-11:00				Fundamentals 1	Detector 1	III / V nitride 1	2D Materials 1	Correlated 1			Fundamentals 4	Detector 4	III / V nitride 4	2D Materials 4	ACCGE / OMVPE III / V on Si 2			Thin Film 4	NLO /Laser 4	PV 4			Bulk 2	Industrial 2	OMVPE Opto-electronic 2	Bio 2		Bulk 6		Nano 3	Bio 6
11:00-11:30																															
11:30-12:00																															
12:00-12:30				Lunch	Lunch	Lunch	Lunch				Lunch	Lunch	Lunch	Lunch	Lunch			Excursions	Excursions	Excursions			Lunch	Lunch	Lunch	Lunch					
12:30-1:00																															
1:00-1:30																															
1:30-2:00				Fundamentals 2	Detector 2	III / V nitride 2	2D Materials 2	Correlated 2			Thin film 1	NLO / Laser 1	III / V nitride 5	2D Materials 5										Bulk 3	Industrial 3	OMVPE Novel In-situ	Bio 3					
2:00-2:30																															
2:30-3:00																															
3:00-2:30	Registration			Coffee Break	Coffee Break	Coffee Break	Coffee Break		Poster set up		Coffee Break	Coffee Break	Coffee Break	Coffee Break		Poster set up								Coffee Break	Coffee Break	Coffee Break	Coffee Break					
3:30-4:00				Fundamentals 3	Detector 3	III / V nitride 3	2D Materials 3				Thin Film 2	NLO / Laser 2	PV 1	2D Materials 6										Bulk 4	Industrial 4	Nano 1	Bio 4					
4:00-4:30																															
4:30-5:00																															
5:00-5:30							Vendor Reception: Mammoth Room		Posters							Posters																
5:30-6:00																															
6:00-6:30	Welcome Reception																	Banquet Reception	Banquet Reception	Banquet Reception	Banquet Reception										
6:30-7:00																															
7:00-7:30					ACCGE/ OMVPE III / V on Si 1							ACCGE / OMVPE PV2						Banquet	Banquet	Banquet	Banquet										
7:30-8:00																															
8:00-8:30																															
8:30-9:00																															
9:00-9:30																															

ACCGE Topical Session Overview

Morning sessions are M1=8:30-10:00; M2=10:30-12:00; Afternoon sessions are A1=1:30-3:00; A2=3:30-5:00; Evening sessions are E1=7:30-9:30PM

Biological, Biomimetic, and Organic Crystallization (ACCGE)
Thursday M1, M2, A1, A2
Friday M1, M2

Bulk Crystal Growth (ACCGE)
Thursday M1, M2, A1, A2
Friday M1, M2

Correlated Electron Crystals (ACCGE)
Monday M2,A1

Detector Materials: Scintillators and Semiconductors (ACCGE)
Monday M2, A1, A2
Tuesday M2

Fundamentals of Crystal Growth (ACCGE)
Monday M2, A1, A2
Tuesday M2

Industrial Crystal Growth Technologies and Equipment (ACCGE)
Thursday M1, M2, A1, A2
Friday M1

Nonlinear Optical and Laser Host Materials (ACCGE)
Tuesday A1, A2
Wednesday M2

OMVPE Workshop Topical Session Overview

Novel OMVPE Techniques and In-Situ Monitoring
Thursday A1

OMVPE of Compound Semiconductors for Optoelectronics
Thursday M1, M2

Joint ACCGE-OMVPE Topical Session Overview

III-V Nitride, SiC, and Other Wide Bandgap Materials
Monday M2, A1, A2
Tuesday M2, A1

III-Vs on Silicon
Monday E1
Tuesday M2

Nanocrystals, Quantum Dots and Nanowires
Thursday A2
Friday M1, M2

Materials for Photovoltaics and Energy Technology
Tuesday A2, E1
Wednesday M1, M2

Second Symposium on 2D Electronic Materials

Monday M2, A1, A2
Tuesday M2, A1, A2
Wednesday M1

Schedule at a Glance

Sunday August 2nd and Monday August 3rd

ACCGE / OMVPE 2015				Missouri (Jefferson)	Missouri (Madison)	Missouri (Gallatin)	Ampitheater	Lake / Canyon	Mammoth
	SUNDAY		MONDAY						
7:00-7:30			Registration in Missouri Ballroom foyer	Breakfast	Breakfast	Breakfast			
7:30-800									
8:00-8:30				Intro & Plenary	Intro & Plenary	Intro & Plenary			
8:30-9:00									
9:00-9:30									
9:30-10:00									
10:00-10:30				Coffee Break	Coffee Break	Coffee Break	Coffee Break		
10:30-11:00				Fundamentals 1	Detector 1	III/V nitride 1	2D Materials 1	Correlated 1	
11:00-11:30									
11:30-12:00									
12:00-12:30				Lunch	Lunch	Lunch	Lunch		
12:30-1:00									
1:00-1:30									
1:30-2:00				Fundamentals 2	Detector 2	III/V nitride 2	2D Materials 2	Correlated 2	
2:00-2:30									
2:30-3:00									Poster set up
3:00-2:30	Registration			Coffee Break	Coffee Break	Coffee Break	Coffee Break		
3:30-4:00				Fundamentals 3	Detector 3	III/V nitride 3	2D Materials 3		
4:00-4:30									
4:30-5:00									
5:00-5:30							Vendor Reception: Mammoth Room		Posters
5:30-6:00									
6:00-6:30	Welcome Reception								
6:30-7:00									
7:00-7:30					ACCGE / OMVPE III/V on Si 1				
7:30-8:00									
8:00-8:30									
8:30-9:00									
9:00-9:30									

Tuesday, August 4th

		Missouri (Jefferson)	Missouri (Madison)	Missouri (Gallatin)	Ampitheater	Lake / Canyon	Mammoth
	TUESDAY						
7:00-7:30	Registration	Breakfast	Breakfast	Breakfast			
7:30-800							
8:00-8:30		Awards Plenary	Awards Plenary	Awards Plenary			
8:30-9:00							
9:00-9:30							
9:30-10:00							
10:00-10:30		Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	
10:30-11:00		Fundamentals 4	Detector 4	III/V nitride 4	2D Materials 4	ACCGE/ OMVPE III/V on Si 2	
11:00-11:30							
11:30-12:00							
12:00-12:30		Lunch	Lunch	Lunch	Lunch	Lunch	
12:30-1:00							
1:00-1:30							
1:30-2:00		Thin film 1	NLO/Laser 1	III/V nitride 5	2D Materials 5		
2:00-2:30							
2:30-3:00							Poster set up
3:00-2:30		Coffee Break	Coffee Break	Coffee Break	Coffee Break		
3:30-4:00		Thin Film 2	NLO/Laser 2	PV 1	2D Materials 6		
4:00-4:30							
4:30-5:00							
5:00-5:30							Posters
5:30-6:00							
6:00-6:30							
6:30-7:00							
7:00-7:30			ACCGE/ OMVPE PV2				
7:30-8:00							
8:00-8:30							
8:30-9:00							
9:00-9:30							

Wednesday, August 5th

		Missouri (Jefferson)	Missouri (Madison)	Missouri (Gallatin)	Ampitheater
	WEDNESDAY				
7:00-7:30	Registration	Breakfast	Breakfast	Breakfast	Breakfast
7:30-800					
8:00-8:30		Thin Film 3	NLO / Laser 3	PV 3	2D Materials 7
8:30-9:00					
9:00-9:30					
9:30-10:00					
10:00-10:30		Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:30-11:00		Thin Film 4	NLO / Laser 4	PV 4	
11:00-11:30					
11:30-12:00					
12:00-12:30		Excursions	Excursions	Excursions	
12:30-1:00					
1:00-1:30					
1:30-2:00					
2:00-2:30					
2:30-3:00					
3:00-2:30					
3:30-4:00					
4:00-4:30					
4:30-5:00					
5:00-5:30					
5:30-6:00					
6:00-6:30		Banquet Reception	Banquet Reception	Banquet Reception	Banquet Reception
6:30-7:00					
7:00-7:30		Banquet	Banquet	Banquet	Banquet
7:30-8:00					
8:00-8:30					
8:30-9:00					
9:00-9:30					

Thursday, August 6th

		Missouri (Jefferson)	Missouri (Madison)	Missouri (Gallatin)	Ampitheater
	THURSDAY				
7:00-7:30	Registration	Breakfast	Breakfast	Breakfast	Breakfast
7:30-800					
8:00-8:30		Bulk 1	Industrial 1	OMVPE Opto-electronic 1	Bio 1
8:30-9:00					
9:00-9:30					
9:30-10:00					
10:00-10:30		Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:30-11:00		Bulk 2	Industrial 2	OMVPE Opto-electronic 2	Bio 2
11:00-11:30					
11:30-12:00					
12:00-12:30		Lunch	Lunch	Lunch	Lunch
12:30-1:00					
1:00-1:30					
1:30-2:00		Bulk 3	Industrial 3	OMVPE Novel In-situ	Bio 3
2:00-2:30					
2:30-3:00					
3:00-2:30		Coffee Break	Coffee Break	Coffee Break	Coffee Break
3:30-4:00		Bulk 4	Industrial 4	Nano 1	Bio 4
4:00-4:30					
4:30-5:00					

Friday, August 7th

		Missouri (Jefferson)	Missouri (Madison)	Missouri (Gallatin)	Ampitheater
		FRIDAY			
7:00-7:30	Registration	Breakfast	Breakfast	Breakfast	Breakfast
7:30-800					
8:00-8:30		Bulk 5	Industrial 5	Nano 2	Bio 5
8:30-9:00					
9:00-9:30					
9:30-10:00					
10:00-10:30		Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:30-11:00		Bulk 6		Nano 3	Bio 6
11:00-11:30					
11:30-12:00					

Monday, August 3, 2015

8:00 AM - 10:00 AM

Introduction/Plenary

Location: Missouri
Session Chair(s): Joan Redwing, Luke Mawst

8:30 AM - 9:15 AM
GIANT CRYSTALS OF NAICA: THE SCIENCE BEHIND THE BEAUTY
Invited
Juan M. Garcia-Ruiz
Consejo Superior de Investigaciones Cientificas, Armilla (Granada), Spain

9:15 AM - 10:00 AM
AlGaN-BASED TECHNOLOGY: STATE-OF-THE-ART AND REMAINING CHALLENGES
Invited
Zlatko Sitar
North Carolina State University, Raleigh, NC, USA

Monday, August 3, 2015

10:30 AM - 12:00 PM

Correlated Electron Crystals 1

Location: Lake/Canyon
Session Chair(s): Athena Safa-Sefat, John E. Greedan

10:30 AM - 11:00 AM
SYNTHESIS, CRYSTAL GROWTH, AND STRUCTURAL CHARACTERIZATION OF NOVEL ZINTL PHASES OF AS, SB AND BI WITH THE D-METALS
Invited
Svilen Bobev
University of Delaware, Newark, Delaware, United States

11:00 AM - 11:15 AM
IN SITU OBSERVATION OF PHASE SEPARATION AND HIERARCHICAL MICROSTRUCTURE OF KXFE2-YSE2 SINGLE CRYSTALS
Yong Liu, Qingfeng Xing, Warren E. Straszhein, Ames Laboratory, Ames, Iowa, United States, Jeff Marshman, Carl Zeiss Microscopy, LLC, Ion Microscopy Innovation Center (IMIC), Peabody, Massachusetts, United States
Pal Pedersen, Carl Zeiss Microscopy, LLC, Thornwood, New York, United States
Thomas A. Lograsso, Ames Laboratory, Ames, Iowa, United States

11:15 AM - 11:30 AM
SINGLE CRYSTAL GROWTH OF FE-BASED HIGH TEMPERATURE SUPERCONDUCTORS
Chenglin Zhang
Huazhong University of Science & Technology, Wuhan, China

11:30 AM - 11:45 AM
STRUCTURE, MAGNETIC AND MAGNETOCALORIC PROPERTIES OF NOVEL $GdNi_{0.85}Al_{0.85}$ COMPOUND
T.P. Rashid[a], S. Nallamuthu[a], K.Arun[a], Marian Reiffers[b], Ivan Curlik[b], Sergej Ilkovic[b], M.Sekar[c], R. Nagalakshmi[a,*]
[a]Department of Physics, National Institute of Technology, Tiruchirappalli 620 0015, India
[b]Faculty of Humanities and Natural Sciences, Presov University, Presov, Slovakia
[c]Material Science Division, Indira Gandhi Centre for Atomic Research, Kalpakkam 603102, Tamil Nadu, India

11:45 AM - 12:00 PM
TUNING OF CRYSTALS ON ATOMIC SCALES IN ORDER TO UNDERSTAND COLLECTIVE PHENOMENA
Athena S. Sefat
Oak Ridge National Laboratory,Oak Ridge, TN, USA

Monday, August 3, 2015

10:30 AM - 12:00 PM

Detector Materials: Scintillators and Semiconductors (ACCGE) 1

Location: Madison
Session Chair(s): Stacy Swider, Mariya Zhuravleva

10:30 AM - 11:00 AM
CRYSTAL GROWTH OF 2INCH EU-DOPED SRI2 SINGLE CRYSTALS FOR SCINTILLATOR APPLICATION
Invited
Akira Yoshikawa, IMR and NICHe, Tohoku Univ., C&A Corp., Sendai, Japan
Yasuhiro Shoji, IMR Tohoku Univ., C&A Corp., Sendai, Japan
Yuui Yokota, NICHe, Tohoku Univ., Sendai, Japan
Shunsuke Kurosawa, IMR and NICHe, Tohoku Univ.,, Sendai, Japan
Shoki Hayasaka, C&A Corp., Sendai, Japan
Valery I. Chani, IMR Tohoku Univ.,, Sendai, Japan
Tomoki Ito, C&A Corp., Sendai, Japan
Kei Kamada, NICHe, Tohoku Univ., C&A Corp., Sendai, Japan
Yuji Ohashi, IMR, Tohoku Univ., C&A Corp., Sendai, Japan
Vladimir V. Kochurikhin, IMR, Tohoku Univ., C&A Corp. General Phys. Inst., Sendai, Japan

11:00 AM - 11:15 AM
GROWTH OF CSCAI3:EU SCINTILLATOR VIA THE MULTI AMPOULE BRIDGMAN METHOD
Adam C. Lindsey, Yuntao Wu, Mariya Zhuravleva, Charles L. Melcher, Scintillation Materials Research Center, The University Tennessee, Knoxville, Tennessee, United States Knoxville, TN, USA

11:15 AM - 11:30 AM
GROWTH OF SRI2 SINGLE CRYSTALS BY THE EFG METHOD
Robert S. Feigelson, George Calvert, Stanford University, Stanford, California, United States
Andrew Yeckel, Jeff Derby, University of Minnesota, Minneapolis, Minnesota, United States
Arnold Burger, Fisk University, Nashville, Tennessee, United States
Stephanie Lam, CapeSym, Natick, Massachusetts, United States

11:30 AM - 11:45 AM
MULTI-RUN VERTICAL BRIDGMAN GROWTH OF CO-DOPED SRI2:EU2+
Emmanuel Rowe,[1]Ardelia Clarke,[1]Pijush Bhattacharya,[1]Michael Groza,[1]Arnold Burger,[1]David Caudel,[1]Eugene Tupitsyn,[1]Nerine Cherepy,[2]Steve Payne[2]
1Fisk University, Nashville, TN, USA, [2]Lawrence Livermore National Lab, Livermore, CA, USA

11:45 AM - 12:00 PM
THE GROWTH AND CHARACTERIZATION OF KCAI3:EU, A NEW HIGH LIGHT YIELD SCINTILLATOR
Adam C. Lindsey, Mariya Zhuravleva, Charles L. Melcher
The University of Tennessee, Knoxville, TN, USA

Monday, August 3, 2015

10:30 AM - 12:00 PM

Fundamentals of Crystal Growth (ACCGE) 1

Location: Jefferson
Session Chair(s): Peter Vekilov

10:30 AM - 11:00 AM
NON-CLASSICAL
PATHWAYS OF NANOPOROUS ZEOLITE CRYSTALLIZATION
Invited
Jeffrey D. Rimer
University of Houston, Houston, TX, USA

11:00 AM - 11:15 AM
IMPURITY PARTITIONING DURING COLLOIDAL POLYCRYSTALLIZATION
Jun Nozawa, Sumeng Hu, Haruhiko Koizumi, Satoshi Uda
Tohoku University, Sendai, Japan

11:15 AM - 11:30 AM
CRYSTAL GROWTH SHAPES IN BOND-COUNTING MODELS AND CONTINUUM MODELS
Tim Krumwiede, Tim Schulze
University of Tennessee, Knoxville, TN, USA

11:30 AM - 11:45 AM
THE EFFECT OF AXIAL MAGNETIC FIELD ON THE MORHOLOGY AND GROWTH OF THE NI5MN24GA22 ALLOYS
Long Hou, Xi Li, Zhongming Ren, Yanchao Dai
Shanghai University, Shanghai, China

Monday, August 3, 2015

10:30 AM - 12:00 PM

III-V Nitride, SiC, and Other Wide Bandgap Materials (Joint ACCGE/OMVPE) 1

Location: Gallatin
Session Chair(s): Dirk Ehrentraut, Nelson Tansu, Dan Koleske

10:30 AM - 10:50 AM
EFFECT OF COOLING RATE ON GROWN-IN DISLOCATION MULTIPLICATION ON PRISMATIC SLIP PLANES FOR GAN SINGLE CRYSTAL
Satoshi Nakano, Bing Gao, Koichi Kakimoto
RIAM, Kyushu University, Kasuga, Japan

10:50 AM - 11:10 AM
3D MODELING AND OPTIMIZATION OF THE GAN THIN FILM PRODUCED BY THE 6-INCH MULTIWAFER HYDRIDE VAPOR PHASE EPITAXY EQUIPMENT
Xue Feng Han
Seoul National University, Seoul, Korea, Republic of

11:10 AM - 11:40 AM
HVPE GAN GROWTH ON AMMONOTHERMAL GAN SEEDS. CHALLENGES AND PERSPECTIVES.
Invited
Michal Bockowski
Institute of High Pressure Physics PAS, Warsaw, Poland

Monday, August 3, 2015

10:30 AM - 12:00 PM

Second Symposium on 2D Electronic Materials (Joint ACCGE/OMVPE) 1

Location: Amphitheater
Session Chair(s): Kurt Gaskill

10:30 AM - 11:00 AM
MATERIALS SCIENCE WITH 2D ATOMIC LAYER BUILDING BLOCKS
Invited
Pulickel M. Ajayan
Rice University, Houston, TX, USA

11:00 AM - 11:30 AM
BUILDING HETEROSTRUCTURES AND DOPING WITH METAL CHALCOGENIDES: TUNABLE PROPERTIES AND POSSIBLE APPLICATIONS
Invited
Nestor Perea
The Pennsylvania State University, University Park, PA, USA

11:30 AM - 12:00 PM
ULTRA LOW NOISE GRAPHENE BASED ELECTRONICS
Invited
Alton Horsfall
Newcastle University, Newcastle, United Kingdom

Monday, August 3, 2015

1:30 PM - 3:00 PM

Correlated Electron Crystals 2

Location: Lake/Canyon
Session Chair(s): Athena Safa-Sefat, John E. Greedan

1:30 PM - 2:00 PM
STRONG COMPETITION BETWEEN ORBITAL ORDERING AND ITINERANCY IN A FRUSTRATED SPINEL VANADATE
Invited
Haidong Zhou
University of Tennessee, Knoxville, TN, USA

2:00 PM - 2:15 PM
CRYSTAL GROWTH OF VANADATES IN DIFFERENT OXIDATION STATES
Casey A. Marjerrison, Hanna A. Dabkowska, Matthieu Bugnet, Bruce D. Gaulin, Antoni Dabkowski
McMaster University, Hamilton, ON, Canada

2:15 PM - 2:30 PM
SURFACE-STATE-DOMINATED TRANSPORT IN CRYSTALS OF THE TOPOLOGICAL CRYSTALLINE INSULATOR IN-DOPED PB1-XSNXTE
genda gu, Ruidan Zhong, John Schneeloch, Cheng Zhang, Tiansheng Liu, Ivo Pletikosic, Qiang Li, Wei Ku, Tonica Valla, John Tranquada
upton, NY, USA

2:30 PM - 3:00 PM
BOND DIRECTIONAL ANISOTROPY AND THE APPROACH TO A QUANTUM SPIN LIQUID IN A HONEYCOMB IRIDATE
Invited
John F. Mitchell,[1]SaeHwan Chun,[1]Jung-Ho Kim,[1]Jong-woo Kim,[1]Thomas Gog,[1]Yong Choi,[1]Konstantinos Stoumpos,[1]Christos Malliakas,[1]Hong Zheng,[1]Jiri Chaloupka,[2]Yogesh Singh,[3]Kavita Mehlawat,[3]Ali Al Zein,[4]Michael Moretti,[4]Michael Krisch,[4]Giniyat Khaliullin,[5]George Jackeli,[5]Bum Joon Kim[5]
[1]Argonne National Lab, Argonne, IL, USA, [2]Central European Institute for Technology, Brno, Czech Republic, [3]Indian Institute of Science, Education and Research, Mohali, India, [4]ESRF, Grenoble, France, [5]Max Planck Institute, Stuttgart, Germany

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Monday, August 3, 2015

1:30 PM - 3:15 PM

Detector Materials: Scintillators and Semiconductors (ACCGE) 2

Location: Madison
Session Chair(s): Yuui Yakota

1:30 PM - 2:00 PM
DEFECT ENGINEERING AND GROWTH OF Sb:BiI3 FOR ENHANCED NUCLEAR RADIATION SEMICONDUCTOR DETECTORS
Invited
Juan Claudio Nino,[1]Paul Johns,[1]Kelly Jordan,[1]Mary Bliss,[2]James Baciak[1]
[1]University of Florida, Gainesville, FL [2]Pacific Northwest National Laboratory, Richland, WA, USA

2:00 PM - 2:15 PM
GROWTH OF LiIn(1-X)Ga(X)Se2 SEMI-INSULATING CRYSTALS
Ashley C. Stowe,[1]Brenden Wiggins,[1]Keivan Stassun,[2]Arnold Burger[3]
[1]Y-12 National Security Complex, Oak Ridge, TN, USA, [2]Vanderbilt University, Nashville, TN, USA, [3]Fisk University, Nashville, TN, USA

2:15 PM - 2:30 PM
SYNTHESIS, PURIFICATION, AND CHARACTERIZATION OF LEAD AND BISMUTH CHALCOHALIDES AS NEW CANDIDATE SEMICONDUCTORS FOR GAMMA-RAY DETECTION
Duck Young Chung, Konstantinos Stoumpos, Hao Li, Christos Malliakas, Mercouri G. Kanatzidis
Argonne National Labs, Argonne, IL, USA

2:30 PM - 2:45 PM
CRYSTAL GROWTH OF LEAD BASED HARD RADIATION DETECTORS
Peng L. Wang, Zhifu Liu, Pice Chen, John A. Peters, Gangjian Tan, Jino Im, Arthur J. Freeman, Bruce W. Wessels, Mercouri G. Kanatzidis
Northwestern University, Evanston, IL, USA

2:45 PM - 3:00 PM
GROWTH AND CHARACTERIZATION OF UO2 AND NOVEL URANIUM CRYSTALS FROM HYDROTHERMAL SOLUTIONS
J. Matthew Mann,[1]Eric Hunt,[1]Glenn Peterson,[2]Tony Kelly,[2]David Turner,[3]James Petrosky[2]
[1]Air Force Research Laboratory, [2]Air Force Institute of Technology, Wright-Patterson AFB, OH, USA, [3]Oak Ridge Institute for Science and Education, Oak Ridge, TN, USA

3:00 PM - 3:15 PM
HYDROTHERMAL GROWTH AND CHARACTERIZATION OF BULK UO2 CRYSTALS
Eric Hunt,[1]J. Matthew Mann,[1]Christopher Young,[2]David Turner,[3]James Petrosky[2]
[1]Air Force Research Laboratory, [2]Air Force Institute of Technology, Wright-Patterson AFB, OH, USA, [3]Oak Ridge Institute for Science and Education, Oak Ridge, TN, USA

Monday, August 3, 2015

1:30 PM - 3:00 PM

Fundamentals of Crystal Growth (ACCGE) 2

Location: Jefferson
Session Chair(s): Jeffrey Rimer

1:30 PM - 2:00 PM
PROTEIN CLUSTERS AND CRYSTALS AT BIRTH
Invited
Dominique Maes,[1]Maria A. Vorontsova,[2]Tiziano Sanvito,[3]Marco AC Potenza,[3]Marzio Giglio,[3]Mike Sleutel,[1]Peter G. Vekilov[2]
[1]Vrije Universiteit Brussel Brussels, Belgium, [2]University of Houston, Houston, TX, USA, [3]Universita di Milano Milano, Italy

2:00 PM - 2:15 PM
SELECTIVE CRYSTALLIZATION OF ACETAMINOPHEN POLYMORPH WITH HIGH SOLUBILITY
Yoichiro Mori,[1] Mihoko Maruyama,[1] Yoshinori Takahashi,[1,2] Hiroshi Yoshikawa,[1,3] Shino Okada,[2] Hiroaki Adachi,[1,2] Shigeru Sugiyama,[1] Kazufumi Takano,[2,4] Satoshi Murakami,[5] Hiroyoshi Matsumura,[1,2] Tsuyoshi Inoue,[1,2] Masashi Yoshimura,[1] Yusuke Mori[1,2]
[1]Osaka University, [2]SOSHO Inc., [3]Saitama University, [4]Kyoto Prefectural University, [5]Tokyo Institute of Technology, Japan

2:15 PM - 2:30 PM
SURFACE ANISOTROPIC GROWTH OF $GAAS_{1-X}BI_X$ ON PATTERNED GAAS SUBSTRATES BY METAL-ORGANIC VAPOR PHASE EPITAXY
Yingxin Guan, Kamran Forghani, Honghyuk Kim, Luke Mawst, Susan Babcock, Thomas F. Kuech University of Wisconsin-Madison, Madison, WI, USA

Monday, August 3, 2015

1:30 PM - 3:00 PM

III-V Nitride, SiC, and Other Wide Bandgap Materials (Joint ACCGE/OMVPE) 2

Location: Gallatin
Session Chair(s): Dirk Ehrentraut, Nelson Tansu, Dan Koleske

1:30 PM - 2:00 PM
BASIC AMMONOTHERMAL GROWTH OF GALLIUM NITRIDE AND ITS GROWTH IN SILVER LINED AUTOCLAVES
Invited
Siddha Pimputkar,[1]Shinichiro Kawabata,[2]James S. Speck,[1]Shuji Nakamura[1]
[1]University of California-Santa Barbara, Santa Barbara, CA, USA, [2]Mitsubishi Chemical Corp. Ibaraki, Japan

2:00 PM - 2:20 PM
ATOMIC AND MACRO SCALE CALCULATIONS ON CRYSTAL GROWTH OF WIDE BANDGAP SEMICONDUCTORS
Koichi Kakimoto,[1]Shin-ichi NIshizawa,[2]BIng Gao,[1]Satoshi Nakano,[1]Hirofumi Harada,[1]Yoshiji Miyamura,[1]Takafumi Sekiguchi[2]
[1]Research Institute for Applied Mechanics, Kyushu University, Fukuoka, 816-0951, Japan
[2]Advanced Industrial Science and Technology, Tsukuba, Ibaraki, 305-0044 Japan
[3]National Institute for Materials Science, Tsukuba, Ibaraki, 305-0044 Japan

2:20 PM - 2:40 PM
HIGH TEMPERATURE AMMONOTHERMAL BULK CRYSTAL GROWTH GAN
Dirk Ehrentraut, Wenkan Jiang, Jonathan Cook, Derrick S. Kamber, Rajeev T. Pakalapati, Mark P. D'Evelyn
Soraa Inc., Goleta, CA, USA

Monday, August 3, 2015

1:30 PM - 3:00 PM

Second Symposium on 2D Electronic Materials (Joint ACCGE/OMVPE) 2

Location: Amphitheater
Session Chair(s): Sarah Eichfeld

1:30 PM - 2:00 PM
GROWTH OF GRAPHENE AND NOVEL 2D FILM ON SIC
Invited
Wataru Norimatsu, Michiko Kusunoki
Nagoya University, Nagoya, Japan

2:00 PM - 2:30 PM
TOWARDS AN UNDERSTANDING OF CATALYTIC 2D MATERIAL GROWTH
Invited
Piran R. Kidambi
Massachusetts Institute of Technology, MA, USA

2:30 PM - 3:00 PM
EPITAXIAL GRAPHENE ON SILICON CARBIDE STUDIED BY ELECTRON SPECTROSCOPY
Invited
Thomas Seyller
TU Chemnitz, Chemnitz, Germany

Monday, August 3, 2015

3:30 PM - 5:15 PM

Detector Materials: Scintillators and Semiconductors (ACCGE) 3

Location: Madison
Session Chair(s): Stacy Swider, Mariya Zhuravleva

3:30 PM - 4:00 PM
PURIFICATION AND CRYSTAL GROWTH OF TLBR FOR ROOM TEMPERATURE AND COOLED DETECTORS
Invited
Alexei V. Churilov,[1]Hadong Kim,[1]Leonard J. Cirignano,[1]Yaroslav Ogorodnik,[1]Alireza Kargar,[1]Paul R. Bennett,[1]Suyoung Kim,[1]Guido Ciampi,[1]Craig Hines,[1]William Koehler,[2]Sean O'Neal,[2]Zhong He,[2]Adam M. Conway,[3]Stephen A. Payne,[3]Sean R. Bishop,[4]Stuart N. Cook,[4]Harry L. Tuller,[4]Kanai S. Shah[1]
[1]Radiation Monitoring Devices, Inc. Watertown, MA, USA, [2]University of Michigan, Ann Arbor, MI, USA, [3]Lawrence Livermore National Laboratory, Livermore, CA, USA, [4]Massachusetts Institute of Technology, Cambridge, MA, USA

4:00 PM - 4:30 PM
CHARACTERIZATION OF PROCESSES CONTRIBUTING TO DEGRADATION OF THALLIUM BROMIDE DEVICES
Invited
AMLAN DATTA, Shariar Motakef
CapeSym Inc., Natick, MA, USA

4:30 PM - 4:45 PM
MODELING OF DISLOCATION MULTIPLICATION PROCESS IN BRIDGMAN GROWTH OF CZT
Alex Galyukov,[1]Vasif Mamedov,[2]Vladimir Artemyev,[2]Vladimir Kalaev[2]
[1]STR US Inc., Richmond, VA, USA, [2]STR Group Inc., Saint-Petersburg, Russian Federation

4:45 PM - 5:00 PM
ANALYSIS OF THE GROWTH OF CADMIUM ZINC TELLURIDE BY THE TRAVELING HEATER METHOD
Jeff H. Peterson, Andrew Yeckel, Jeffrey J. Derby
University of Minnesota, Minneapolis, MN, USA

5:00 PM - 5:15 PM
ANALYSIS OF SECOND-PHASE PARTICLE MIGRATION IN CADMIUM ZINC TELLURIDE VIA TEMPERATURE GRADIENT ZONE MELTING
Kerry Wang, Andrew Yeckel, Jeffrey J. Derby
University of Minnesota, Minneapolis, MN, USA

Monday, August 3, 2015

3:30 PM - 5:00 PM

Fundamentals of Crystal Growth (ACCGE) 3

Location: Jefferson
Session Chair(s): Dominique Maes

3:30 PM - 4:00 PM
EXACT GROWTH RATE MEASUREMENT OF LYSOZYME CRYSTALS BY INTERFEROMETRY UNDER MICROGRAVITY
Invited
Katsuo Tsukamoto,[1]Yoshihisa Suzuki,[2]Hitoshi Miura,[3]Izumi Yoshizaki[4]
[1]Tohoku University, Sendai, Japan, [2]Tokushima University, Tokushima, Japan, [3]Nagoya City University, Nagoya, Japan, [4]JAXA, Tsukuba, Japan

4:00 PM - 4:15 PM
SPIRAL GROWTH OF PROTEIN CRYSTALS INDUCED BY FEMTOSECOND LASER ABLATION
Yusuke Tominaga,[1] Mihoko Maruyama,[1] Hiroshi Y. Yoshikawa,[1,2] Yuki Hayashi,[1] Satoshi Nakayama,[1] Yoshinori Takahashi,[1] Shigeru Sugiyama,[1] Hiroaki Adachi,[1,2] Hiroyoshi Matsumura,[1,2] Kazufumi Takano,[3,4] Satoshi Murakami,[3,5] Tsuyoshi Inoue,[1,2] Masashi Yoshimura,[1] Yusuke Mori[1,2]
[1]Grad. School of Eng., Osaka University, Japan, [2]Saitama University, Japan, [3]SOSHO Inc., Japan, [4]Grad. School of Life and Environ. Sci., Tokyo Institute of Technology, Japan, [5]Grad. Sch. of Biosci. and Biotech., Tokyo Inst. of Tech

4:15 PM - 4:30 PM
PROTEIN CRYSTALLIZATION WITH INCREASED MECHANICAL STABILITY BY USING A SEMI-SOLID HYDROGEL COMBINED WITH THE STIRRING TECHNIQUE
Mihoko Maruyama,[1]Yuki Hayashi,[1]Masashi Yoshimura,[1]Hiroshi Y. Yoshikawa,[2]Shino Okada,[3]Shigeru Sugiyama,[1]Hiroaki Adachi,[3]Hiroyoshi Matsumura,[1]Tsuyoshi Inoue,[1]Kazufumi Takano,[4]Satoshi Murakami,[4]Yusuke Mori[1]
[1]Osaka University, Suita, Osaka, Japan, [2]Saitama University, Saitama, Japan, [3]SOSHO Inc., Suita, Osaka, Japan, [5]Kyoto Prefectural University, Kyoto, Japan, [5]Tokyo Institute of Technology, Yokohama, Japan

4:30 PM - 4:45 PM
INVESTIGATIONS ON NUCLEATION KINETICS GROWTH OPTICAL SPECTRAL DIELECTRIC AND MECHANICAL STUDIES OF NONLINEAR OPTICAL MATERIAL META NITROANILINE SINGLE CRYSTAL
Ezhil Vizhi R, Vijialakshmi M, Rajan Babu D
VIT University, Vellore, India

Monday, August 3, 2015

3:30 PM - 5:00 PM

III-V Nitride, SiC, and Other Wide Bandgap Materials (Joint ACCGE/OMVPE) 3

Location: Gallatin
Session Chair(s): Dirk Ehrentraut, Nelson Tansu, Dan Koleske

3:30 PM - 3:50 PM
MOCVD GROWTH AND PROCESSING OF GA2O3 FILMS
Gary S. Tompa,[1]Thomas Salagaj,[1]Nick Sbrockey,[1]Yao Yao,[2]Johanne Rokholt,[2]Robert F. Davis,[2]Lisa M. Porter[2]
[1]Structured Materials Industries, Piscataway, NJ, USA, [2]Carnegie Mellon University, Pittsburgh, PA, USA

3:50 PM - 4:10 PM
HOMOEPITAXIAL GROWTH OF SEMICONDUCTING BETA-GA2O3 THIN LAYERS BY MOVPE
Guenter Wagner, Michele Baldini, Klaus Irmscher, Robert Schewski, Martin Albrecht
Institute for Crystal Growth, Berlin, Germany

4:10 PM - 4:30 PM
GROWTH OF THICK ON-AXIS SIC EPITAXIAL LAYERS BY HALIDE CVD FOR HIGH VOLTAGE POWER DEVICES
Mark Fanton,[1]David Snyder,[2]Brian Weiland,[1]Kathleen Trumbull,[2]Gregory Pastir,[2]Cordell Delzer[2]
[1]The Pennsylvania State University, Freeport, PA, USA, [2]The Pennsylvania State University, University Park, PA, USA

4:30 PM - 4:50 PM
EPITAXIAL GROWTH OF HIGH QUALITY, SELF-SEPARATION GAN CRYSTALS BY USING A NOVEL HIGH TEMPERATURE ANNEALING POROUS TEMPLATE
Lei Zhang,[1] Jiaoxian Yu,[2] Yuan Tian,[1] Xiaopeng Hao,[1] Yongzhong Wu,[1] Yongliang Shao,[1] Yuanbin Dai,[1] Qin Huo,[1] Baoguo Zhang[1]
[1]State Key Laboratory of Crystal Materials, Shandong University, Jinan, China, [2]Department of Materials Science and Engineering, Qilu University of Technology, Jinan, China

4:50 PM - 5:10 PM
GROWTH OF GAN ON PATTERN SAPPHIRE SUBSTRATE BY HYDRIDE VAPOR PHASE EPITAXY
Chu An Li, Chien-Te Chiang, Wun-Huei Siang, Chenlong Chen, Chun-Yu Lee, Mitch M.C. Chou Kaohsiung,
Department of Materials and Opto-electronic Science, National Sun Yat-Sen University, Taiwan, Taiwan Consortium of Emergent Crystalline Materials, Ministry of Science and Technology (MOST), Kaohsiung, Taiwan

Monday, August 3, 2015

3:30 PM - 5:00 PM

Second Symposium on 2D Electronic Materials (Joint ACCGE/OMVPE) 3

Location: Amphitheater
Session Chair(s): Thomas Seyller

3:30 PM - 4:00 PM
GROUP IV SEMICONDUCTORS AT THE ATOMIC SCALE
Invited
Joshua Goldberger
The Ohio State University, Columbus, OH, USA

4:00 PM - 4:20 PM
LOCAL SCALE MODIFICATION OF LASER-EXPOSED GRAPHENE
Marc Currie,[1]Anindya Nath,[2]Anthony Boyd,[1]Rachael Myers-Ward,[1]D. Kurt Gaskill[1]
[1]NRL, Washington, DC, USA, [2]George Mason University, Fairfax, VA, USA

4:20 PM - 4:40 PM
NANOSCALE HETEROSTRUCTURES AND DOPING-INDUCED SELF-ASSEMBLY OF GRAPHENE NANORIBBONS
Peter Sutter,[1]Eli Sutter,[1]Alexander Sinitskii[2]
[1]Brookhaven National Laboratory, Upton, NY, USA, [2]University of Nebraska, Lincoln, NE, USA

4:40 PM - 5:00 PM
A NOVEL METHOD FOR THE SYNTHESIS OF TWO DIMENSIONAL CARBON ALLOTROPES OF GRAPHENE
Olanrewaju Tanimola,[1]RUSSELL CHIANELLI,[1]GARY WILLIAMS,[1]LAWRENCE MURR[2]
[1]University of Texas at El Paso, EL PASO, TX, USA, [2]University of Texas at El Paso, Houston, TX, USA

Monday, August 3, 2015

5:00 PM - 7:00 PM

Poster Session 1

Location: Mammoth
Session Chair(s): Candace Lynch, John Geisz, Andrew Allerman

Poster Number: 2D-1
Topic: Second Symposium on 2D Electronic Materials
"CHEMICAL WEATHERING" EXFOLIATION OF ATOM-THICK TRANSITION METAL DICHALCOGENIDES AND THEIR ULTRAFAST SATURABLE ABSORPTION PROPERTIES
Yongzhong Wu, Gang Zhao, Shuo Han, Aizhu Wang, Mingwen Zhao, Zhengping Wang, Xiaopeng Hao
Shandong University, Jinan, China

Poster Number: CE-2
Topic: Correlated Electron Crystals
FE-TE-SE BASE SUPERCONDUCTING MATERIALS SINTERED BY A NEW EXPLOSIVE METHOD
Fengying Wang,[1]Genda Gu[2]
[1]North University of China, Taiyuan, Shanxi, China, [2]Brookhaven National Laboratory, Upton, NY, USA

Poster Number: DET-1
Topic: Detector Materials: Scintillators and Semiconductors
HOMOGENEITY AND ANNEALING STUDY ON CSSRBR3:EU SCINTILLATOR
Matthew Loyd, Luis Stand, Adam Lindsey, Mariya Zhuravleva, Charles L. Melcher
University of Tennessee, Knoxville, TN, USA

Poster Number: DET-10
Topic: Detector Materials: Scintillators and Semiconductors
A DEFECT STUDY OF CZOCHRALSKI GROWN YAG CODOPED WITH CERIUM AND CALCIUM
Peter Dickens,[1]Drew Haven,[1]Stephan Friedrich,[2]Tursun Ablekim,[1]Kelvin Lynn[1]
[1]Washington State University Pullman, WA, USA, [2]Lawrence Livermore National Laboratory Livermore, CA, USA

Poster Number: DET-11
Topic: Detector Materials: Scintillators and Semiconductors
ANALYSIS OF BRIDGMAN GROWTH OF SCINTILLATOR CRYSTALS FOR ADVANCED DETECTION
Chang Zhang,[1]Jeff H. Peterson,[1]Didier Perrodin,[2]Gregory A. Bizarri,[2]Edith D. Bourret-Courchesne,[2]Jeffrey J. Derby[1]
[1]University of Minnesota, Minneapolis, MN, USA, [2] Lawrence Berkeley National Laboratory, Berkeley, CA, USA

Poster Number: DET-12
Topic: Detector Materials: Scintillators and Semiconductors
ANALYSIS OF A NOVEL BRIDGMAN CRYSTAL GROWTH SYSTEM DESIGNED FOR NEUTRON IMAGING
Yue Wu,[1]Jeff H. Peterson,[1]Didier Perrodin,[2]Gregory A. Bizarri,[2]Edith D. Bourret-Courchesne,[2]Mark Bourke,[3]Anton S. Tremsin,[2]Jeffrey J. Derby[1]
[1]University of Minnesota Minneapolis, MN, USA, [2] Lawrence Berkeley National Laboratory, Berkeley, CA, USA, [3]Los Alamos National Laboratory, Los Alamos, NM, USA

Poster Number: DET-2
Topic: Detector Materials: Scintillators and Semiconductors
GROWTH AND SCINTILLATION PROPERTIES OF CE DOPED YAG SINGLE CRYSTAL
Yuui Yokota, Shunsuke Kurosawa, Yuji Ohashi, Kei Kamada, Akira Yoshikawa
Tohoku University, Sendai, Japan

Poster Number: DET-3
Topic: Detector Materials: Scintillators and Semiconductors
CRYSTAL GROWTH AND SCINTILLATION PROPERTIES OF LU SUBSTITUTED CEBR3 SINGLE CRYSTALS
Tomoki Ito,[1]Yuui Yokota,[2]Shunsuke Kurosawa,[1]Kei Kamada,[1]Jan Pejchal,[3]Yuji Ohashi,[1]Akira Yoshikawa[1]
[1]IMR, Tohoku Univ., Sendai, Japan, [2]New Industry Creation Hatchery Center (NICHe), Tohoku University, Sendai, Japan, [3]New Industry Creation Hatchery Center (NICHe), Tohoku University, Institute of Physics AS CR, Sendai, Japan

Poster Number: DET-4
Topic: Detector Materials: Scintillators and Semiconductors
PURIFICATION, STOICHIOMETRY CONTROL AND CRYSTAL GROWTH OF THALLIUM CHALCOHALIDE ROOM TEMPERATURE HARD RADIATION DETECTORS
Wenwen Lin, Peng Li Wang, Zhifu Liu, Bruce W. Wessels, Mercouri G. Kanatzidis
Northwestern University, Evanston, Illinois, USA

Poster Number: DET-5

Topic: Detector Materials: Scintillators and Semiconductors
SCINTILLATION PROPERTIES OF CE:GD3(GA,AL)5O12 SINGLE CRYSTALS GROWN BY CZOCHRALSKI METHOD WITH DIFFERENT MG CO-DOPING CONCENTRATIONS.
Kei Kamada,[1]Aya Nagura,[1]Martin Nikl,[2]Satoshi Okumura,[1]Seiichi Yamamoto,[3]Shunsuke Kurosawa,[1]Yuui Yokota,[1]Jan Pejchal,[2]Yuji Ohashi,[1]Akira Yoshikawa[1]
[1]Tohoku University, Sendai, Japan, [2] Institute of Physics AS CR, Praque, Czech Republic Praque, Czech Republic, [3] Nagoya University, Nagoya, Japan

.**Poster Number:** DET-6
Topic: Detector Materials: Scintillators and Semiconductors
PHASE FORMATION, STABILITY AND CRYSTAL GROWTH OF CERIUM ACTIVATED SOLID SOLUTION OF GD2SI2O7 AND LU2SI2O7
He Feng,[1] Wusheng Xu,[2] Zhijun Zhang,[1] Xu Zhan,[1] Jingtai Zhao,[1] Fang Lei[1]
[1]Shanghai University , Shanghai, China, [2]GE Global Research, Shanghai, China

Poster Number: DET-7
Topic: Detector Materials: Scintillators and Semiconductors
DISPERSION OF COMPLEX DIELECTRIC PERMITTIVITY AND CONDUCTIVITY OF TlGaSe2 SINGLE CRYSTALS AT RADIO FREQUENCIES
Solmaz N. Mustafaeva,[1] Mirsalim M. Asadov[2]
[1]İnstitute of Physics, Baku, Azerbaijan, [2]İnstitute of Catalysis and Inorganic Chemistry, Baku, Azerbaijan

Poster Number: DET-8
Topic: Detector Materials: Scintillators and Semiconductors
LUMINESCENT PROPERTIES OF CE-DOPED GADOLINIUM PYROSILICATE CRYSTALS GROWN BY THE FLOATING ZONE METHOD
Shunsuke Kurosawa, Toetsu Shishido, Takamasa Sugawara, Akiko Nomura, Kunio Yubuta, Yasuhiro Shoji, Rikito Murakami, Yuui Yokota, Jan Pejchal, Yuji Ohashi, Kei Kamada, Akira Yoshikawa
Tohoku Univ.,Sendai, Miyagi, Japan

Poster Number: DET-9
Topic: Detector Materials: Scintillators and Semiconductors
LUMINESCENT PROPERTIES OF CR-DOPED GALLIUM GARNET CRYSTALS GROWN BY THE MICRO PULLING DOWN METHOD
Shunsuke Kurosawa, Akira Suzuki, Akihiro Yamaji, Kei Kamada, Jan Pejchal, Yuji Ohashi, Yuui Yokota, Akira Yoshikawa
Tohoku Univ., Sendai, Miyagi, Japan

Poster Number: FUND-1
Topic: Fundamentals of Crystal Growth
THE GENERAL APPROACH TO THE MODELING OF DEFECT FORMATION IN THE PROCESS OF CRYSTAL GROWTH
Vitalyi I. Talanin, Igor E. Talanin
Zaporozhye Institute of Economics & Information Technologies, Zaporozhye, Ukraine

Poster Number: FUND-2
Topic: Fundamentals of Crystal Growth
DETERMINATION OF THE CONTACT ANGLE BASED ON THE CASIMIR EFFECT
Konstanty Mazuruk,[1] Martin Volz[2]
[1]UAH, Huntsville, AL, USA, [2]NASA, Huntsville, AL, USA

Poster Number: FUND-3
Topic: Fundamentals of Crystal Growth
ANISOTROPIC ISLAND NUCLEATION AND GROWTH DURING OMVPE OF M-PLANE GAN
Carol Thompson,[1]Edith Perret,[2]Matthew J. Highland,[3]Paul H. Fuoss,[3]Anneli Munkholm,[4]Peter Zapol,[3]Stephen K. Streiffer,[3]G. Brian Stephenson[3]
[1] Dept. of Physics, Northern Illinois University, DeKalb, IL, USA, [2] Dept. of Physics, University of Fribourg, 1700 Fribourg, Switzerland, [3] Materials Science Division, Argonne National Lab, Argonne, IL, USA, [4] Avogy, Inc., Santa Jose, CA, USA

Poster Number: FUND-4
Topic: Fundamentals of Crystal Growth
HORIZONTAL DIRECTIONAL SOLIDIFICATION OF ZN BASE ALLOYS
Alicia E. Ares
[a] Faculty of Sciences, University of Misiones, 1552 Félix de Azara Street, 3300 Posadas-Misiones, Argentina.
[b] Materials Institute of Misiones, IMAM (CONICET - UNaM).

Poster Number: FUND-5
Topic: Fundamentals of Crystal Growth
STUDY OF THE COLUMNAR-TO-EQUIAXED TRANSITION FROM THE GROWING OF A LITTLE NUMBER OF COLUMNAR GRAINS
Alicia E. Ares
[a] Faculty of Sciences, University of Misiones, 1552 Félix de Azara Street, 3300 Posadas-Misiones, Argentina.
[b] Materials Institute of Misiones, IMAM (CONICET - UNaM).

Poster Number: FUND-6
Topic: Fundamentals of Crystal Growth
COUPLED CHEMICAL AND TRANSPORT MODEL FOR ANALYSIS OF SAPPHIRE CRYSTAL GROWTH
Alex Galyukov,[1]Andrey Vorob'ev,[2]Vladimir Kalaev[2]
[1]STR US, Inc Richmond, VA, USA, [2]STR Group, Inc., Saint-Petersburg, Russian Federation

Poster Number: NLO-1
Topic: Nonlinear Optical and Laser Host Materials
FABRICATION OF OPTICAL ELEMENT FROM INVERTED SOLUBILITY LITHIUM SULFATE MONOHYDRATE SINGLE CRYSTAL FOR NLO APPLICATIONS
Rajesh Paulraj, Silambarasan A, Ramasamy P
SSN College of Engineering, Kanchipuram, India

Poster Number: NLO-2
Topic: Nonlinear Optical and Laser Host Materials
THE EFFECT OF ND DOPING LEVEL ON THE SPECTRAL PROPERTIES OF ND:GGG CRYSTAL
Zhitai Jia, Chunming Dong, Jun Shu, Wenxiang Mu, Yanbin Li, Xutang Tao
State Key Laboratory of Crystal Materials, Shandong University, Ji Nan, China

Poster Number: NLO-3
Topic: Nonlinear Optical and Laser Host Materials
Z SCAN STUDY OF HYDROXYETHYLAMMONIUM P-NITROPHENOLATE SINGLE CRYSTAL
N. Sudharsana[1], P.Srinivasan[2], R. Nagalakshmi[1]
[1]Department of Physics, National Institute of Technology, Tiruchirappalli 620015, India
[2]Department of Physics, University College of engineering Panruti, Panruti--607106, India

Poster Number: NLO-4
Topic: Nonlinear Optical and Laser Host Materials
GROWTH AND OPTICAL SPECTROSCOPY OF RARE-EARTH DOPED POTASSIUM LEAD HALIDES FOR POTENTIAL APPLICATIONS IN INFRARED LASERS AND RADIATION DETECTORS
Ei Ei Brown,[1]Althea Bluiett,[2]Uwe Hommerich,[1]Amber Simmons,[1]Bria Andrews,[1]Sudhir Trivedi[3]
[1]Hampton University Hampton, VA, USA, [2]Elizabeth City State University Elizabeth City, NC, USA, [3]Brimrose Corporation of America, Sparks Glencoe, MD, USA

Poster Number: NLO-5
Topic: Nonlinear Optical and Laser Host Materials
INVESTIGATION ON STRUCTURAL AND NONLINESR OPTICAL SPECIFICITY OF BIOLOGICAL AMINO ACID CRYSTALS
Xu Dong, Liu Xi Tao, Zhang Guang Hui, Wang Lei, Wang Xin Qiang, Ren Quan
Shandong University, Jinan, China

Poster Number: NLO-6
Topic: Nonlinear Optical and Laser Host Materials
GROWTH, OPTICAL AND DIELECTRIC PROPERTIES OF A SEMI-ORGANIC SINGLE CRYSTAL: MORPHOLINIUM DIHYDROGEN PHOSPHATE
Rajan Babu D, Arul H, Ezhil Vizhi R
VIT University, Vellore, India

Poster Number: NLO-7
Topic: Nonlinear Optical and Laser Host Materials
GROWTH AND CHARACTERIZATION OF BIS-THIOUREA NICKEL BARIUM CHLORIDE SINGLE CRYSTAL
Rakesh Hajiyani,[1]Harshkant Jethava,[1]Chetan Chauhan,[2]Mihir Joshi[1]
[1]Department of Physics,Saurashtra University, Rajkot, India, [2]Government Science College, Gandhinagar, India

Poster Number: NLO-8
Topic: Nonlinear Optical and Laser Host Materials
(E)-N'-(4-CHLOROBENZYLIDENE)-4-METHYLBENZENESULFONOHYDRAZIDE (4CBTH): SYNTHESIS AND CHARACTERIZATION OF ORGANIC NLO CRYSTAL
Srinivasan Padmanabhan, Balaji Janardhanan, Prabu Subramani
University College of Engg Panruti, Tamil Nadu, India

Poster Number: SI-1
Topic: III/Vs on Silicon
CATALYST FREE GROWTH OF III V NANOWIRE ARRAY ON SI
Jae Cheol Shin, Chan Ho Choi
Yeungnam University, Kyeongbuk, Korea, Republic of

Poster Number: WBG-1
Topic: III/V Nitride and other Wide Bandgap Semiconductors
SINGLE CRYSTAL GROWTH OF GALLIUM OXIDE BY EFG METHOD
Wenxiang Mu, Zhitai Jia, Xutang Tao
State Key Laboratory of Crystal Materials, Shandong University, Ji Nan, China

Poster Number: WBG-2
Topic: III/V Nitride and other Wide Bandgap Semiconductors
STUDY OF INGAN/GAN MQWS ON GAN PYRAMIDS TEMPLATE
XIangqian XIU, Xuemei HUA, Shiying Zhang, Zili Xie, Ping Han, Qingjun Xu, Yongan Li, Dunjun Chen, Peng Chen, Rong Zhang, Youdou Zheng
Nanjing university, Nanjing, China

Poster Number: WBG-3
Topic: Thin Film Growth, Epitaxy, and Superlattices
THE DEPOSITION OF SICN BUFFER LAYER FOR 3C-SIC GROWN ON SI SUBSTRATE
Ping Han, Xiaolong He, Zheyang Li, XuZhao Chai, Shu Fan, Le Yu, Le Huang, Tao Tao, Zili Xie, Xiangqian Xiu, Xuemei Hua, Hong Zhao, Rong Zhang, Youdou Zheng
China

Poster Number: WBG-4
Topic: III/V Nitride and other Wide Bandgap Semiconductors
THE STUDY ON LIGHT EXTRACTION EFFICIENCY OF LIGHT EMITTING DIODE WITH GRADED-INDEX PHOTINIC CRYSTALS
Ping Ma, Hongxi Lu
Institute of Semiconductors Chinese Academy of Sciences, Beijing, China

Monday, August 3, 2015

7:00 PM - 10:00 PM

III-Vs on Silicon (Joint ACCGE/OMVPE) 1

Location: Madison
Session Chair(s): Kerstin Volz, Tyler Grassman

7:00 PM - 7:30 PM
III/V GROWTH STUDY ON PATTERNED (001) SI WAFER FOR CMOS APPLICATION
Invited
Bernardette Kunert,[1]Weiming Guo,[1]Yves Mols,[1]Matty Caymax,[1]Robert Langer,[1]Kathy Barla,[1]Lucien Date,[2]Xinyu Bao,[2]David Carlson,[2]Errol Sanchez[2]
[1]IMEC, Leuven, Belgium, [2]Applied Materials, Santa Clara, CA, USA

7:30PM-7:50PM **BREAK**

7:50 PM - 8:10 PM
INVESTIGATION OF MOVPE-GROWN SB-BASED METAMORPHIC BUFFERS FOR HIGH MOBILITY N-III/V-CHANNELS ON SI
Andrea Ott,[1] Andreas Beyer,[1] Peter Ludewig,[2] Wolfgang Stolz,[1] Kerstin Volz[1]
[1]Philipps-Universität Marburg Marburg, Germany, [2]NAsP III/V GmbH, Marburg, Germany

8:10 PM - 8:30 PM
TOWARDS THE INTEGRATION OF IN53GA47AS ON 300 MM SI FOR CMOS SUB 7 NM NODE: DEVELOPMENT OF THIN GRADED INGAAS BUFFERS
Yves Mols,[1]Bernardette Kunert,[1]Gweltaz Gaudin,[2]Robert Langer,[1]Matty Caymax[1]
[1]IMECLeuven, Belgium, [2]Soitec, Bernin, France

8:30 PM - 8:50 PM
PSEUDOMORPHIC GROWTH OF DIRECT BAND GAP GA(NASP) ON SI (001)
Peter Ludewig,[1]Stefan Reinhard,[2]Tatjana Wegele,[2]Kakhaber Jandieri,[2]Andreas Beyer,[2]Kerstin Volz,[2]Wolfgang Stolz[2]
[1]NAsP III/V Marburg, Germany, [2]Philipps-University Marburg Germany

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Tuesday, August 4, 2015

8:00 AM - 10:00 AM

Young Author and AACG Awards

Location: Missouri
Session Chair(s): Tom Kuech, Chris Wang

8:30 AM - 9:15 AM
CRYSTAL GROWTH AWARD: THE SCIENCE OF MODELING THE ART OF CRYSTAL GROWTH
Jeffrey J. Derby
University of Minnesota, Minneapolis, MN, USA

9:15 AM - 10:00 AM
YOUNG AUTHOR AWARD: NEW HORIZONS IN COMPLEX OXIDE THIN-FILM GROWTH: DESIGNING NEXT-GENERATION, HIGH-PERFORMANCE MATERIALS
Lane W. Martin
University of California, Berkeley, CA, USA

Tuesday, August 4, 2015

10:30 AM - 12:00 PM

Detector Materials: Scintillators and Semiconductors (ACCGE) 4

Location: Madison
Session Chair(s): Chuck Melcher

10:30 AM - 10:45 AM
OXYGEN IMPURITIES IN METAL-HALIDE SCINTILLATORS
Stacy E. Swider,[1]Stephanie Lam,[2]Shariar Motakef,[2]Amlan Datta[2]
[1] CapeSym, Inc., Massachusetts, United States, [2] CapeSym, Inc., Natick, Massachusetts, United States

10:45 AM - 11:00 AM
NUMERICAL MODELING OF SCINTILLATOR PROPORTIONALITY AND LIGHT YIELD FROM EXPERIMENTALLY AND COMPUTATIONALLY DETERMINED HOST AND DOPANT PARAMETERS
Richard T. Williams, Xinfu Lu
Wake Forest University, Winston-Salem, North Carolina, United States

11:00 AM - 11:15 AM
SCALE-UP AND COMMERCIALIZATION OF CLYC SCINTILLATION CRYSTALS
Joshua Tower, Patrick O'Dougherty, Craig Hines, Rastgo Hawrami, Chuncheng Ji, Jaroslaw Glodo, Kanai Shah
Radiation Monitoring Devices, Inc., Watertown, Massachusetts, United States

11:15 AM - 11:30 AM
CZOCHRALSKI GROWTH OF 2INCH CE-DOPED (LA,GD)2SI2O7 SINGLE CRYSTALS FOR SCINTILLATOR APPLICATION
Akira Yoshikawa[1], Shunsuke Kurosawa[2], Yasuhiro Shoji[3], Valery I. Chani[4], Rikito Murakami[4], Kei Kamada[1], Yuui Yokota[5], Yuji Ohashi[4], Vladimir Kochurikhin[6]
[1]IMR and NICHe, Tohoku Univ., C&A Corp., Sendai, Japan
[2]IMR and NICHe, Tohoku Univ., Sendai, Japan
[3]IMR, Tohoku Univ., C&A Corp., Sendai, Japan
[4]IMR, Tohoku Univ., Sendai, Japan
[5]NICHe, Tohoku Univ., Sendai, Japan
[6]C&A Corp.,, General Physics Inst., Sendai, Japan

11:30 AM - 11:45 AM
GROWTH AND SCINTILLATION PROPERTIES OF ALKALI METAL AND CE CO-DOPED LU3AL5O12 SCINTILLATOR
Kei Kamada,[1]Vladimir V. Kochurikhin,[2]Martin Nikl,[3]Shunsuke Kurosawa,[1]Jan Pejchal,[3]Yuui Yokota,[1]Yuji Ohashi,[1]Akira Yoshikawa[1]
[1] Tohoku University, Sendai, Japan, [2] General Physics Institute, Moscow, Russian Federation, [3] Institute of Physics AS CR, Praque, Czech Republic

RECENT DEVELOPMENTS IN HALIDE SCINTILLATORS
Invited
Edith Bourret-Courchesne
Lawrence Berkeley National Laboratory, Berkeley, California, United States

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Tuesday, August 4, 2015

10:30 AM - 12:00 PM

Fundamentals of Crystal Growth (ACCGE) 4

Location: Jefferson
Session Chair(s): Katsuo Tsukamoto

10:30 AM - 11:00 AM
INTEGRATED PHASE-FIELD CRYSTAL APPROACH TO INVESTIGATE INTERFACE TENSION AND NUCLEATION BARRIERS
Invited
M. Ajmal Choudhary,[1]Julia Kundin,[1]Martin Oettel,[2]Heike Emmerich[1]
[1] Materials and Process Simulations, University of Bayreuth, Bayreuth, Germany
, [2] Institute of Applied Physics, University of Tübingen, Tübingen, Germany

11:00 AM - 11:15 AM
NON-EQUILIBRIUM MOLECULAR DYNAMICS SIMULATIONS OF CU SOLIDIFICATION
Luis A. Zepeda-Ruiz
Lawrence Livermore National Laboratory, Livermore, California, United States

11:15 AM - 11:30 AM
GROWTH KINETICS AND BULK GROWTH OF INVERTED SOLUBILITY LITHIUM SULFATE MONOHYDRATE SINGLE CRYSTAL AND ITS OPTICAL CHARACTERIZATION
Rajesh Paulraj, Silambarasan A, Ramasamy P
SSN College of Engineering, Kanchipurma, India

11:30 AM – 11:45 PM
NUCLEATION KINETICS GROWTH STRUCTURAL OPTICAL MECHANICAL THERMAL AND DIELECTRIC STUDIES OF LITHIUM SUCCINATE SINGLE CRYSTAL
Ezhil Vizhi R, Lakshmipriya M
VIT University, Vellore, India

Tuesday, August 4, 2015

10:30 AM - 12:00 PM

III-Vs on Silicon (Joint ACCGE/OMVPE) 2

Location: Lake/Canyon
Session Chair(s): Kerstin Volz, Tyler Grassman

10:30 AM - 11:00 AM
OMVPE FROM FIRST PRINCIPLES - REALISTIC QUANTUM-CHEMICAL MODELS FOR GROWTH AND PROPERTIES
Invited
Ralf Tonner
Philipps-Universität Marburg, Marburg, Germany

11:00 AM - 11:20 AM
IN SITU OBSERVATION OF THE GAP/SI(100) HETEROINTERFACE FORMATION
Sebastian Brueckner, Oliver Suppplie, Matthias May, Andreas Naegelein, Peter Kleinschmidt, Thomas
TU Ilmenau, Ilmenau, Germany

11:20 AM - 11:40 AM
OMVPE GROWTH OF APD-FREE GAP ON ASH3-CLEANED VICINAL SI(100)
William E. McMahon, Emily L. Warren, Alan E. Kibbler, Ryan M. France, Andrew G. Norman, Jerry M. Olson, Adele Tamboli, Pauls Stradins
NREL, Golden, Colorado, United States

Tuesday, August 4, 2015

10:30 AM - 12:00 PM

Second Symposium on 2D Electronic Materials (Joint ACCGE/OMVPE) 4

Location: Amphitheater
Session Chair(s): Ajayan Pulickel, Han Wang

10:30 AM - 11:00 AM
GOING BIG IN 2D
Invited
Sarah M. Eichfeld, Joshua A. Robinson
The Pennsylvania State University, University Park, Pennsylvania, United States

11:00 AM - 11:20 AM
MOLYBDENUM DISULFIDE CHEMICAL VAPOR DEPOSITION FOR HIGH VOLUME MANUFACTURING
James Maslar,[1]William Kimes,[1]Brent Sperling,[1]Robert Tieckelmann,[2]Tommaso Orzali,[2]Albert Davydov,[1]Ryan Beams,[1]Stephan Stranick[1]
[1] NIST, Gaithersburg, Maryland, United States, USA, [2] SEMATECH, Albany, New York, United States

11:20 AM - 11:40 AM
EPITAXIAL GROWTH OF TWO-DIMENSIONAL LAYERED SEMICONDUCTORS
Masihhur R. Laskar, David H. K. Jackson, Kamran Forghani, Thomas F. Kuech
University of Wisconsin-Madison, Madison, Wisconsin, United States

11:40 AM - 12:00 PM
2D SEMICONDUCTORS: CONTROLLABLE SYNTHESIS AND APPLICATIONS IN ELECTRONICS
Jun He
National Center for Nanoscience and Technology, Beijing, China

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Tuesday, August 4, 2015

10:30 AM - 12:00 PM

III-V Nitride, SiC, and Other Wide Bandgap Materials (Joint ACCGE/OMVPE) 4

Location: Gallatin
Session Chair(s): Dirk Ehrentraut, Nelson Tansu, Dan Koleske

10:30 AM - 10:50 AM
ELECTRICALLY CONDUCTING AlGaN/GaN DISTRIBUTED BRAGG REFLECTOR GROWN BY METALORGANIC CHEMICAL VAPOR DEPOSITION
Yuh-Shiuan Liu,[1]A F M Saniul Haq,[1]Tsung-Ting Kao,[1]Karan Mehta,[1]Shyh-Chiang Shen,[1]Theeradetch Detchprohm,[1]Paul Douglas Yoder,[1]Russell Dupuis,[1]Hongen Xie,[2]Fernando Ponce[2]
[1] Georgia Institute of Technology, Atlanta, GA, USA, [2] Arizona State University, Tempe, AZ, USA

10:50 AM - 11:10 AM
GAN/INGAN HETEROJUNCTION PHOTOTRANSISTORS GROWN BY METALORGANIC CHEMICAL VAPOR DEPOSITION
Tsung-Ting Kao, Jeomoh Kim, Yi-Che Lee, Mi-Hee Ji, Saniul Haq, Theeradetch Detchprohm, Russel Dupuis, Shyh-Chiang Shen
Georgia Institute of Technology, Atlanta, Georgia, United States

11:10 AM - 11:30 AM
INCREASED INDIUM INCORPORATION AND EFFICIENCY IN INGAN QUANTUM WELLS EMITTING AT 530 - 590 NM WITH ALGAN INTERLAYERS
Daniel D. Koleske, Arthur J. Fischer, Ben N. Bryant, Jonathan J. Wierer
Sandia National Laboratories, Albuquerque, New Mexico, United States

11:30 AM - 11:50 AM
IN SITU METROLOGY DURING GROWTH OF NOVEL NITRIDE BASED SEMICONDUCTOR BRAGG MIRRORS
Christoph Berger,[1]Stephanie Fritze,[2]Armin Dadgar,[1]André Strittmatter[1]
[1] Otto-von-Guericke-University Magdeburg, Magdeburg, Germany, [2] LayTec AG, Berlin, Germany

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Tuesday, August 4, 2015

1:30 PM - 3:00 PM

Nonlinear Optical and Laser Host Materials (ACCGE) 1

Location: Madison
Session Chair(s): Kevin Zawilski

1:30 PM - 2:00 PM
CZOCHRALSKI GROWTH OF FERROELECTRIC LaBGeO5 SINGLE CRYSTALS FOR UV-GENERATION
Invited
Yasunori Furukawa, Mistuyoshi Sakairi, Junji Hirohashi, Koichi Imai
OXIDE Corp., Hokuto, Yamanashi, Japan

2:00 PM - 2:15 PM
CONFIGURATION OF POINT DEFECTS OF IMPURITY-DOPED CONGRUENT LITHIUM NIOBATE
Chihiro Koyama, Jun Nozawa, Kozo Fujiwara, Satoshi Uda
Institute for Materials Research, Tohoku University, Sendai, Japan

2:15 PM - 2:30 PM
DEVELOPING PERIODICALLY ORIENTED GALLIUM NITRIDE FOR FREQUENCY CONVERSION
Jennifer Hite,[1]Ramasis Goswami,[1]Jaime Freitas,[1]Michael Mastro,[1]Igor Vurgaftman,[1]Jerry Meyer,[1]Christopher Brown,[2]Francis Kub,[1]Steven Bowman,[1]Charles Eddy, Jr.[1]
[1] US Naval Research Laboratory, Washington, Dist. of Columbia, United States, [2] University Research Foundation, Greenbelt, Maryland, United States

2:30 PM - 2:45 PM
IMPROVED GRATING PROPAGATION DURING HVPE GROWTH OF ORIENTATION-PATTERNED GALLIUM ARSENIDE
Peter G. Schunemann
BAE Systems, Nashua, New Hampshire, United States

2:45 PM - 3:00 PM
POLARIZATION DEPENDENCE OF SECOND HARMONIC GENERATION IN CUBIC CRYSTALS
Shekhar Guha,[1]Jacob O. Barnes,[1]Peter G. Schunemann[2]
[1] Air Force Research Laboratory, WPAFB, Ohio, United States, [2] BAE Systems, Nashua, New Hampshire, United States

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Tuesday, August 4, 2015

1:30 PM - 3:00 PM

Thin Film Growth, Epitaxy, and Superlattices (Joint ACCGE/OMVPE) 1

Location: Jefferson
Session Chair(s): Andrey Krysa

1:30 PM - 1:50 PM
QUANTUM CASCADE LASER ACTIVE REGIONS ON METAMORPHIC BUFFER LAYERS
Ayushi Rajeev, Luke Mawst, Jeremy Kirch, Dan Botez, Junyan Miao, Brian Zutter, Phillip Buelow, Kevin Schulte, Thomas Kuech, Thomas Earles
University of Wisconsin-Madison, Madison, Wisconsin, United States

1:50 PM - 2:10 PM
EPITAXIAL GROWTH OF GERMANIUM ON GAAS FOR INTEGRATED NANOMEMBRANE HETEROSTRUCTURES
Jose R. Sanchez-Perez, Garrett D. Cogburn, Shelley A. Scott, Thomas F. Kuech, Max G. Lagally
University of Wisconsin-Madison, Madison, Wisconsin, United States

2:10 PM - 2:30 PM
INP-BASED METAMORPHIC HIGH INDIUM INALAS/INGAAS EPITAXIAL STRUCTURES FOR LASERS AND DETECTORS IN 2-3UM RANGE
Yi Gu, Y. G. Zhang, X. Y. Chen, S. P. Xi, B. Du, Y. J. Ma, L. Zhou
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, Shanghai, China

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Tuesday, August 4, 2015

1:30 PM - 3:00 PM

Second Symposium on 2D Electronic Materials (Joint ACCGE/OMVPE) 5

Location: Amphitheater
Session Chair(s): Marc Currie

1:30 PM - 2:00 PM
FROM THE FIRST PRINCIPLES: GROWTH, GRAIN BOUNDARIES, AND ELECTRONIC CONSEQUENCES FOR GRAPHENE, H-BN, TMDC
Invited
Boris I. Yakobson
Rice University, Houston, Texas, United States

2:00 PM - 2:20 PM
HYBRID PHYSICAL-CHEMICAL VAPOR DEPOSITION OF BISMUTH SELENIDE FILMS FOR TOPOLOGICAL INSULATOR APPLICATIONS
Tanushree H. Choudhury,[1]Joseph E. Brom,[1]Joan M. Redwing,[1]Raj Kumar,[2]Frank Hunte,[2]Andrew S. Hewitt,[2]Daniel B. Dougherty[2]
[1] The Pennsylvania State University, University Park, Pennsylvania, United States
, [2] North Carolina State University, Raleigh, North Carolina, United States

2:20 PM - 2:40 PM
BRIDGING THE GAP - REDISCOVERING BLACK PHOSPHORUS AS AN ANISOTROPIC LAYERED MATERIAL FOR ELECTRONICS AND OPTOELECTRONICS
Han Wang
University of Southern California, Los Angeles, California, United States

2:40 PM - 3:00 PM
SURFACE STRUCTURE DETERMINATION OF TWO-DIMENSIONAL NICKEL SILICIDE (NI2SI) ON NI(111) BY LEED
Md. Sazzadur Rahman, Takeshi Nakagawa, Seigi Mizuno
Kyushu University, Fukuoka, Japan

Tuesday, August 4, 2015

1:30 PM - 3:00 PM

III-V Nitride, SiC, and Other Wide Bandgap Materials (Joint ACCGE/OMVPE) 5

Location: Gallatin
Session Chair(s): Dirk Ehrentraut, Nelson Tansu, Dan Koleske

1:30 PM - 1:50 PM
III-NITRIDE GROWTH BY A NEW GENERATION OF MBE SYSTEMS
W. Alan Doolittle, Brendan P. Gunning, Chloe A. M. Fabien, Evan Clinton, Joseph Merola
Georgia Institute of Technology, Atlanta, Georgia, United States

1:50 PM - 2:10 PM
MATERIALS CHALLENGES FOR HIGH-VOLTAGE SIC POWER DEVICES
D. Kurt Gaskill, Rachael L. Myers-Ward, Paul B. Klein, Kevin M. Daniels, Anthony K. Boyd, Nadeem A. Mahadik, Robert E. Stahlbush
US Naval Research Laboratory, Washington, Dist. of Columbia, United States

2:10 PM - 2:30 PM
IN SITU STRESS MEASUREMENTS DURING DIRECT MOCVD GROWTH OF GAN ON SIC
Zakaria Y. Al Balushi, Joan M. Redwing
The Pennsylvania State University, University Park, Pennsylvania, United States

2:30 PM - 2:50 PM
DISPERSION FREE HIGH VOLTAGE III-N BUFFER DEVELOPMENT ON 200MM SILICON FOR POWER ELECTRONICS
Yoga N. Saripalli,[1]Ming Zhao,[1]Tomas Novak,[2]Hu Liang,[1]Prem Kumar Kandaswamy,[1]Marleen Van Hove,[1]Steve Stoffels,[1]Niels Posthuma,[1]Denis Marcon,[1]Stefaan Decoutere,[1]Robert Langer[1]
[1] IMEC, Leuven, Belgium, [2] On-Semiconductor, Roznov, Czech Republic

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Tuesday, August 4, 2015

3:30 PM - 5:00 PM

Materials for Photovoltaics and Energy Technology (Joint ACCGE/OMVPE) 1

Location: Gallatin
Session Chair(s): Ted Ciszek

3:30 PM - 3:50 PM
PARTICLE ENGULFMENT DYNAMICS DURING THE GROWTH OF CRYSTALLINE SILICON
Yutao Tao, Andrew Yeckel, Jeffrey J. Derby
University of Minnesota, Minneapolis, Minnesota, United States

3:50 PM - 4:10 PM
DYNAMICS OF HORIZONTAL RIBBON GROWTH OF CRYSTALLINE SILICON
Mia Divecha, Andrew Yeckel, Jeffrey J. Derby
University of Minnesota, Minneapolis, Minnesota, United States

4:10 PM - 4:30 PM
NUMERICAL STUDY OF IMPURITY TRANSPORT IN CZOCHRALSKI SILICON MELT DURING HEAVILY ARSENIC-DOPEN SILLICON CRYSTAL GROWTH
Thi Hoai Thu Nguyen,[1]Jyh-Chen Chen,[1]Chun-Hung Chen,[2]Huy Bich Nguyen[3]
[1] National Central University, Taoyuan, Taiwan, [2] Sino-American Silicon Products Inc., Hsinchu, Taiwan, [3] Nong Lam University, Ho Chi Minh, Viet Nam

4:30 PM - 4:50 PM
CONTROLLED FACETING AND MORPHOLOGY FOR OPTIMIZED LIGHT-TRAPPING IN ALUMINUM-CATALYZED SILICON NANOSTRUCTURES
Mel F. Hainey, Jr.,[1]Chen Chen,[1]Marcie Black,[2]Joan Redwing[1]
[1] Penn State University, University Park, Pennsylvania, United States, [2] Advanced Silicon Group, Lincoln, Massachusetts, United States

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Tuesday, August 4, 2015

3:30 PM - 5:00 PM

Nonlinear Optical and Laser Host Materials (ACCGE) 2

Location: Madison
Session Chair(s): Dave Zelmon

3:30 PM - 3:45 PM
LARGE AREA MBE FREE ORIENTAION PATTERNED GALLIUM PHOSPHIDE TEMPLATES
Shiva Vangala, Vladimir Tassev, Martin Kimani, Michael Snure, Rita Peterson
Air Force Research Lab, Wright Patterson AFB, Ohio, United States

3:45 PM - 4:00 PM
MATERIAL ASPECTS OF THE NONLINEAR FREQUENCY CONVERSION IN OPGAP AND OTHER RELATED QPM MEDIA
Vladimir L. Tassev,[1]Shiva Vangala,[2]Michael Snure,[1]Martin Kimani,[1]Rita Peterson[1]
[1] Air Force Research Laboratory, Wright-Patterson AFB, Ohio, United States, [2] Solid State Scientific Corporation, Nashua, New Hampshire, United States

4:00 PM - 4:15 PM
ALL-EPITAXIAL GROWTH OF DEVICE-QUALITY ORIENTATION-PATTERNED GALLIUM PHOSPHIDE FOR MID-INFRARED OPTICAL PARAMETRIC OSCILLATORS
Peter G. Schunemann, Daniel J. Magarrell, Leonard A. Pomeranz
BAE Systems, Nashua, New Hampshire, United States

4:15 PM - 4:30 PM
CONTINUOUS WAVE MID-WAVE INFRARED GENERATION BY DIFFERENCE FREQUENCY MIXING IN ORIENTATION PATTERNED GALLIUM PHOSPHIDE CRYSTAL
Shekhar Guha,[1]Jacob O. Barnes,[1]Peter G. Schunemann[2]
[1] Air Force Research Laboratory, WPAFB, Ohio, United States, [2] BAE Systems, Nashua, New Hampshire, United States

4:30 PM - 4:45 PM
HYDRIDE VAPOR PHASE EPITAXY OF BULK INDIUM GALLIUM ARSENIDE
Peter G. Schunemann, Kevin T. Zawilski
BAE Systems, Nashua, New Hampshire, United States

4:45 PM - 5:00 PM
CONTROL OF SAPPHIRE CRYSTAL MORPHOLOGY GROWN IN A KYROPOULOS FURNACE
Gourav Sen,[1]Thierry Duffar,[1]Guillaume Alombert-Goget,[2]Kheirreddine Lebbou,[2]Nicolas Barthalay,[3]Cyril Pezzani,[3]Bruno Delagenière[1]
[1] SIMaP, Grenoble, France, [2] Institut Lumière Matière, Lyon, France, [3] RSA le rubis SA, Jarrie/Grenoble, France

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Tuesday, August 4, 2015

3:30 PM - 5:00 PM

Thin Film Growth, Epitaxy, and Superlattices (Joint ACCGE/OMVPE) 2

Location: Jefferson
Session Chair(s): Luke Mawst

3:30 PM - 3:50 PM
GROWTH OF BGAN ALLOYS ON ALN
Michael W. Moseley, Daniel D. Koleske, Stephen R. Lee, Andrew A. Allerman
Sandia National Laboratories, Albuquerque, New Mexico, United States

3:50 PM - 4:10 PM
BORON PHOSPHIDE FILM GROWTH ON ALUMINUM NITRIDE(0001) BY CVD PROCESS
Balabalaji Padavala,[1]Clint D. Frye,[1]Zihao Ding,[2]Ruifen Chen,[2]Michael Dudley,[2]Balaji Raghothamachar,[2]Jason Schmitt,[3]James H. Edgar[1]
[1] Kansas State University, MANHATTAN, Kansas, United States, [2] Stony Brook University, Stony Brook, New York, United States, [3] Nitride Solutions Inc.,, Wichita, Kansas, United States

4:10 PM - 4:30 PM
EPITAXIAL ICOSAHEDRAL BORON PHOSPHIDE GROWN ON VICINAL (0001) 4H-SIC SUBSTRATES
Clint D. Frye,[1]Cheng K. Saw,[1]Balabalaji Padavala,[2]Rebecca J. Nikolic,[1]James H. Edgar[2]
[1] Lawrence Livermore National Laboratory, Livermore, California, United States, [2] Kansas State University, Manhattan, Kansas, United States

4:30 PM - 4:50 PM
NEW ARCHITECTURE TO FABRICATE LARGE PENTACENE SINGLE CRYSTAL FOR HIGH PERFORMANCE ORGANIC FIELD EFFECT TRANSISTORS
Chao Jiang
National Center for Nanoscience and Technology, China, Beijing, China

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Tuesday, August 4, 2015

3:30 PM - 5:00 PM

Second Symposium on 2D Electronic Materials (Joint ACCGE/OMVPE) 6

Location: Amphitheater
Session Chair(s): X. Cai

3:30 PM - 3:50 PM
SNS2 - AN EMERGING LAYERED METAL DICHALCOGENIDE SEMICONDUCTOR: MATERIALS PROPERTIES, DEVICE CHARACTERISTICS, AND ELECTRON-INDUCED STRUCTURAL TRANSFORMATION
Eli Sutter, Yuan Huang, Peter Sutter
Brookhaven National Laboratory, New York, United States

3:50 PM - 4:10 PM
EXPLORING THE EFFECTS OF GROWTH CONDITIONS ON THE PROPERTIES OF MOS2
Robert Burke, Barbara Nichols, Matt Chin, Alex Mazzoni, Tyler Klarr, Sina Najmaei, Madan Dubey
U.S. Army Research Laboratory, Adelphi, Maryland, United States

4:10 PM - 4:30 PM
SYNTHESIS AND CHEMICAL DOPING OF CENTIMETER-SIZE HOMOGENEOUS EPITAXIAL GRAPHENE ON SIC
Yanfei Yang,[1]Chiashain Chuang,[1]Lung-I Huang,[2]Chi-Te Liang,[2]Randolph E. Elmquist[1]
[1] National Institute of Standards and Technology, Gaithersburg, Maryland, United States, [2] National Taiwan University, Taipei, Taiwan

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Tuesday, August 4, 2015

5:00 PM - 7:00 PM

Poster Session 2

Location: Mammoth
Session Chair(s): Candace Lynch, John Geisz, Andrew Allerman

Poster Number:
Topic: Materials for Photovoltaics and EnergyTechnology
EMBEDDED SIC NANO-PARTICLES IN SI BY LOW ENERGY CARBON ION IMPLANTATION FOLLOWED BY ANNEALING
Sarah Purdy,[1]Michael Bradley,[1]Gap Soo Chang,[1]Andrew Knights[2]
[1]Saskatoon, SK, Canada, [2]Hamilton, ON, Canada

Poster Number: BIO-1
Topic: Biological, Biomimetic, and Organic Crystal Growth
MOLECULAR DYNAMICS SIMULATIONS OF PEPTOIDS ADSORBED ONTO CALCITE SURFACES; WHICH MOLECULE-SURFACE INTERACTIONS ALTER CALCITE GROWTH RATES
John H. Harding, Shaun A. Hall
Sheffield, United Kingdom

Poster Number: BULK-1
Topic: Bulk Crystal Growth
OBSERVATIONS OF INTERSTITIAL ATOMS GENERATION NEAR GROWTH INTERFACE DEPENDING ON CRYSTAL PULLING RATES DURING CZ SILICON GROWTH BY DETACHING FROM THE MELT
Takao Abe,[1]Toru Takahashi,[1]Koun Shirai,[2]X. W. Zhang[3]
[1]Gunma, Japan, [2]Osaka, Japan, [3]Ibaraki, Japan

Poster Number: BULK-10
Topic: Bulk Crystal Growth
ANALYSIS OF THE ACCELERATED CRUCIBLE ROTATION TECHNIQUE DURING THE BRIDGMAN GROWTH OF CADMIUM ZINC TELLURIDE
Lei Zhang,[1]Jeff H. Peterson,[1]Santosh K. Swain,[2]Kelvin G. Lynn,[2]Jeffrey J. Derby[1]
[1]Minneapolis, MN, USA, [2]Pullman, WA, USA

Poster Number: BULK-11
Topic: Bulk Crystal Growth
NON-POLAR (10-10) AND SEMI-POLAR (10-11)GAN TRULY BULK GROWN BY HVPE
Aleksey Pechnikov, Vladimir Nikolaev
Perfect Crystals LLC,
26 Politekhnicheskaya str., St.Petersburg, 194021

Poster Number: BULK-12
Topic: Bulk Crystal Growth
EFFECTIVE SEGREGATION COEFFICIENT OF RARE-EARTH IONS IN FLUORITE CRYSTALS
Octavian M. Bunoiu, Marius Stef, Irina Nicoara
Timisoara, Romania

Poster Number: BULK-13
Topic: Bulk Crystal Growth
CHEMICAL COMPOSITION CHARACTERIZATION OF CA3TA(GA0.5AL0.5)3SI2O14 SINGLE CRYSTAL BY THE LINE-FOCUS-BEAM ULTRASONIC MATERIAL CHARACTERIZATION SYSTEM
Yuji Ohashi, Tetsuo Kudo, Yuui Yokota, Yasuhiro Shoji, Shunsuke Kurosawa, Kei Kamada, Akira Yoshikawa
Institute for Materials Research, Tohoku University[1]
New Industry Creation Hatchery Center (NICHe), Tohoku University[2]
C&A Corporation[3]

Poster Number: BULK-2
Topic: Bulk Crystal Growth
THE ROLE OF CRYSTALLITE WITHDRAWAL RATE AND EXTERNAL HEAT AND MASS SOURCES DURING SOLIDIFICATION IN NUCLEATION AND CRYSTAL GROWTH PROCESSES
Irina Nizovtseva, Dmitri Alexandrov, Alexey Malygin, Sergey Vikharev, Anna Britousova
Yekaterinburg, Russian Federation

Poster Number: BULK-3
Topic: Bulk Crystal Growth
A STUDY ON THE SPECTRAL, MECHANICAL AND SOLID STATE PARAMETERS OF METAL-ORGANIC BIS(HYDROGENMALEATE)-CO(II) TETRAHYDRATE CRYSTAL
Rajesh Paulraj
Kanchipuram, India

Poster Number: BULK-4
Topic: Bulk Crystal Growth
BULK GROWTH AND CHARACTERIZATION STUDIES OF NOVEL SEMI ORGANIC PIPERAZINIUM HYDROGEN SUCCINATE SINGLE CRYSTAL
Ezhil Vizhi R, Vijialakshmi M
Vellore, India

Poster Number: BULK-5
Topic: Bulk Crystal Growth
SYNTHESIS BULK GROWTH AND CHARACTERIZATION ON COMPLEX METAL ORGANIC SODIUM BORO OXALATE SINGLE CRYSTAL A THIRD ORDER NONLINEAR OPTICAL MATERIAL
Ezhil Vizhi R, Ramkee C
Vellore, India

Poster Number: BULK-6
Topic: Bulk Crystal Growth
GROWTH OF CA3NBGA3SI2O14 PIEZOELECTRIC CRYSTALS GROWN FROM CONGRUENT COMPOSITION
Yuui Yokota, Yuji Ohashi, Shunsuke Kurosawa, Kei Kamada, Akira Yoshikawa
Sendai, Japan

Poster Number: BULK-7
Topic: Bulk Crystal Growth
PHASE TRANSITION AND DIELECTRIC PROPERTIES IN HIGH-STRAIN ZR-DOPED 92.5%(BI0.5NA0.5)TIO3-7.5%BATIO3 PIEZOELECTRIC SINGLE CRYSTALS
Chengsao Chen, P. Y. Chen, C. S. Tu, M. C. Liu
New Taipei City, Taiwan

Poster Number: BULK-8
Topic: Bulk Crystal Growth
PECULIARITIES OF GROWING BULK BAY2F8 AND SrAlF5 SINGLE CRYCTALS FOR APPLICATION IN UV AND VUV SPECTRAL RIGIONS
Tatiana V. Uvarova, Artemy Kirillovich Ovchinnicov, Anastasiia Gennadevna Uvarova
Moscow, Russian Federation

Poster Number: BULK-9
Topic: Bulk Crystal Growth
CZOCHRALSKI GROWTH OF 2 INCH CA3TA(GA,AL)3SI2O14 SINGLE CRYSTALS FOR PIEZOELECTRIC APPLICATION
Akira Yoshikawa, Yasuhiro Shoji, Yuji Ohashi, Yuui Yokota, Valery I. Chani, Masanori Kitahara, Tetsuo Kudo, Kei Kamada, Shunsuke Kurosawa, Andrey Medvedev, Vladimir Kochurikhin
Sendai, Japan

Poster Number: EPI-1
Topic: Thin Film Growth, Epitaxy, and Superlattices
EFFECT OF SURFACE RECONSTRUCTION ON GE-SI(001) HETEROEPITAXY
Paramita Ghosh, Dr. Madhav Ranganathan
Kanpur, India

Poster Number: EPI-4
Topic: Thin Film Growth, Epitaxy, and Superlattices
EXPERIMENTAL STUDY OF GROWTH MECHANISM OF GAAS MICROCHANNEL EPITAXY
Yosuke Mizuno, Masafumi Tomita, Hiroyuki Takakura, Muneki Iwakawa, Daisuke Kambayashi, Takahiro Maruyama, Shigeya Naritsuka
Nagoya, Japan

Poster Number: EPI-5
Topic: Thin Film Growth, Epitaxy, and Superlattices
FORMATION OF CU2ZNSNS4 FILMS ON SILICON
Ahmed Yusupov[1], Adambaev Kadambay[2], Turaev Zafar[2], Kutlimratov Alexander[3]
1 Tashkent Automobile and Road Institute, Tashkent, Uzbekistan
2 National University of Uzbekistan, Tashkent, Uzbekistan
3 Institute of Physics and Technology of Uzbek Academy of Sciences, Tashkent, Uzbekistan

Poster Number: EPI-6
Topic: Thin Film Growth, Epitaxy, and Superlattices
ANALYSIS OF TMGA OUTPUT OF ON-BOARD CYLINDERS FOR CHEMICAL VAPOR DEPOSITION
Egbert Woelk, Ronald DiCarlo
North Andover, MA, USA

Poster Number: IND-1
Topic: Industrial Crystal Growth
NUMERICAL INVESTIGATION OF THE AXIAL OXYGEN CONCENTRATION DISTRIBUTION IN SILICON CRYSTAL DURING CZOCHRALSKI GROWTH WITH A TRANSVERSE MAGNETIC FIELD
Jyh-Chen Chen,[1]Pei-Yi Chiang,[1]Chun-Hung Chen[2]
[1]Taoyuan, Taiwan, [2]Hsinchu, Taiwan

Poster Number: IND-2
Topic: Industrial Crystal Growth
HYDROTHERMAL GROWTH OF FINE MAGNETITE AND FERRITE CRYSTALS
Neel Dhanaraj,[1]K. Byrappa,[2]K. Namratha[3]
[1]MERRIMACK, NH, USA, [2]MANGALORE, India, [3]MYSORE, India

Poster Number: NANO-1
Topic: Nanocrystals, Quantum Dots, and Nanowires
SIZE AND SYNTHESIS EFFECTS ON THE CRYSTALLINE STRUCTURE OF BARIUM TITANATE
Todd Monson,[1]Sun Hwi Bang,[2]Nate Bean,[2]Jean-Claude de Sugny,[2]Robert Gambee,[2]Eric Puma,[2]Richard Haskell,[2]Adrian Hightower,[2]Chenyang Shi,[3]Simon Billinge,[3]Qing Ma[4]
[1]Albuquerque, NM, USA, [2]Claremont, CA, USA, [3]New York, NY, USA, [4]Chicago, IL, USA

Poster Number: NANO-2
Topic: Nanocrystals, Quantum Dots, and Nanowires
INVESTIGATION OF IONIC CONDUCTIVITY OF LANTHANUM CERIUM OXIDE NANO CRYSTALLINE POWDER SYNTHESIZED BY CO PRECIPITATION METHOD
HOZEFA J. TINWALA, Patij K. Shah, Kirit S. Siddhapara, Dimple V. Shah, Jyoti V. Menghani
SURAT, India

Poster Number: NANO-3
Topic: Nanocrystals, Quantum Dots, and Nanowires
THE OPTICAL PROPERTY OF NANO-SIZED INGAN/GAN POLARIZED LIGHT EMITTING DIODES
Zili Xie[1,2],Tao Tao[1,2],Ting Zhi[1,2], Zhe Zhuang[1,2],Jiangping Dai[1,2], Yi Li[1,2], Fulong Jiang[1,2], Bin Liu[1,2], Yang Hua[1,2], Hong Zhao[1,2],Rong Zhang[1,2], and Youdou Zheng[1,2]
[1]Jiangsu Provincial Key Laboratory of Advanced Photonic and Electronic Materials, School of Electronic Science and Engineering, Nanjing National Laboratory of Microstructures, Nanjing University, Nanjing 210093, P. R. China
[2]National Laboratory of Solid Microstructures, Nanjing University, Nanjing 210093, People's Republic of China

Poster Number: NANO-4
Topic: Nanocrystals, Quantum Dots, and Nanowires
STUDY OF PHOTOCATALYTIC AND MAGNETIC PROPERTY OF CO, MN METAL IONS DOPED NANOCRYSTALLINE TIO2 PREPARED BY SOL-GEL METHOD.
Dimple V. Shah, Kirit Siddhapara
Surat, India

Poster Number: NANO-5
Topic: Nanocrystals, Quantum Dots, and Nanowires
PECVD GROWTH AND CHARACTERIZATION OF SI NANOWIRES
Gary S. Tompa,[1]Thomas Salagaj,[1]Elane Coleman,[1]Nick Sbrockey,[1]Kate J. Norris,[2]Junce Zhang,[2]Nobuhiko P. Kobayashi[2]
[1]Piscataway, NJ, USA, [2]Santa Cruz, CA, USA

Poster Number: OMVPE-1
Topic: Novel OMVPE Techniques and In-Situ Monitoring
BN FILM GROWTH USING PLASMA ENHANCED AND THERMAL CVD PROCESSES
Gary S. Tompa,[1]Thomas Salagaj,[1]Elane Coleman,[1]Nick Sbrockey,[1]Michael Spencer,[2]Jeonghyun Hwang,[2]Brian Calderon,[2]Joon Young Kwak[2]
[1]Piscataway, NJ, USA, [2]Ithaca, NY, USA

Poster Number: OMVPE-2
Topic: OMVPE of Compound Semiconductors for Optoelectronics
EFFECT OF WIDE BAND GAP TUNNEL DIODES ON THE CHARACTERISTICS OF INGAP/INGAAS/GE TRIPLE JUNCTION SOLAR CELLS
Hogyoung Kim,[1]Chang Zoo Kim,[2]Sang Hyun Jung,[2]Dong Hwan Jun,[2]Ho Kwan Kang,[2]Wonkyu Park[2]
[1]Seoul, Korea, Republic of, [2]Korea, Republic of

Poster Number: PV-1
Topic: Materials for Photovoltaics and EnergyTechnology
GRAIN SIZE OF POLYCRYSTALLINE BA8GA16SN30 TYPE-VIII CLATHRATES GROWN FROM FLUX SOLUTIONS BY VERTICAL BRIDGEMAN TECHNIQUE
Li-Shin Chang,[1]Qin-Gang Hong,[1]Huey-Lin Hsieh,[2]Jing-Yi Huang[2]
[1]Taichung, Taiwan, [2]Kaohsiung, Taiwan

Poster Number: PV-2
Topic: Materials for Photovoltaics and EnergyTechnology
GAINP GRADED BUFFERS FOR 4-JUNCTION METAMORPHIC SOLAR CELLS
Ryan M. France, William E. McMahon, Andrew G. Norman, Ivan Garcia, John F. Geisz, Joongoo Kang, Myles A. Steiner, Daniel J. Friedman
Golden, CO, USA

Poster Number: PV-4
Topic: Materials for Photovoltaics and EnergyTechnology
GROWTH AND PYROELECTRIC ENERGY CONVERSION OF PLZST ANTIFERROELECTRIC SINGLE CRYSTAL
QIANG LI, JINGHAN GAO, FANGPING ZHUO, YILING ZHANG, QINGFENG YAN
Beijing, China

Tuesday, August 4, 2015

7:00 PM - 9:30 PM

Materials for Photovoltaics and Energy Technology (Joint ACCGE/OMVPE) 2

Location: Madison
Session Chair(s): John Geisz, Chris Fetzer

7:00 PM - 7:30 PM
III-V NANOWIRES FOR SOLAR CELL APPLICATIONS
Invited
Hoe Tan
The Australian National University, ACT, Australia

7:30 PM - 7:50 PM
MOVPE-GROWN INGAP SOLAR CELL ON GE-ON-SI VIRTUAL SUBSTRATE
TAEWAN KIM, Brian Albert, Brian Pearson, Lionel C. Kimerling, Jurgen Michel
Massachusetts Institute of Technology, Cambridge, Massachusetts, United States

7:50 PM - 8:10 PM
INVERTED METAMORPHIC TANDEM DEVICES FOR EFFICIENT PHOTOELECTROCHEMICAL WATER SPLITTING
Henning Döscher, Ryan M. France, James L. Young, Todd G. Deutsch, John F. Geisz, John A. Turner
National Renewable Energy Laboratory, Golden, Colorado, United States

8:10 PM – 8:20 PM **BREAK**

8:20 PM - 8:40 PM
MOVPE GROWTH OF HIGH EFFICIENCY INVERTED METAMORPHIC 4-JUNCTION SOLAR CELLS
Xingquan Liu, Eric Rehder, Joseph Boisvert, Christopher Fetzer, Daniel Law, Shoghig Mesropian
Boeing Spectrolab Inc., Sylmar, California, United States

8:40 PM - 9:00 PM

IMPACT OF IN-SITU ANNEALING ON DILUTE BISMIDE MATERIALS AND ITS APPLICATION TO SOLAR CELL

Honghyuk Kim,[1]Yingxin Guan,[1]Kamran Forghani,[1]Kangho Kim,[2]Youngjo Kim,[2]Thomas F. Kuech,[1]Jaejin Lee,[2]Luke J. Mawst[1]

[1] University of Wisconsin-Madison, Madison, Wisconsin, United States

, [2] Ajou University, Suwon, Korea, Republic of

9:00 PM - 9:30 PM

THIN-FILM SOLAR CELLS BASED ON GAINN ALLOYS AND QUANTUM WELL STRUCTURES: CURRENT STATUS AND FUTURE PROSPECTS

Invited

Louis J. Guido

Virginia Tech, Blacksburg, Virginia, United States

Wednesday, August 5, 2015

8:00 AM - 10:00 AM

Materials for Photovoltaics and Energy Technology (Joint ACCGE/OMVPE) 3

Location: Gallatin
Session Chair(s): Ted Ciszek, Jeff Derby

8:00 AM - 8:30 AM
ON THE POTENTIAL AND LIMITS OF LARGE AREA SEEDING FOR PHOTOVOLTAIC SILICON
Invited
Nathan Stoddard
SolarWorld Americas, Hillsboro, OR, USA

8:30 AM - 8:50 AM
NUMERICAL MODELING OF A KYROPOULOS PROCESS TO GROW QUASI SQUARE SILICON INGOTS FOR PHOTOVOLTAIC APPLICATIONS
Ahmed NOURI,[1]Leslie Lhomond,[1]Guy Chichignoud,[1]Yves Delannoy,[1]Bachir Helifa,[2]Ibn Khaldoun Lefkaier,[2]Kader Zaidat[1]
[1]Grenoble University Alpes, CNRS-SIMaP laboratory, St Martin d'Heres Cedex, France, [2] Laghouat University, LPM Laboratory, Laghouat, Algeria

8:50 AM - 9:10 AM
PHOTOVOLTAIC SI INGOTS IN COMPARISON WITH MONOLIKE SI AND HIGH-PERFORMANCE MULTICRYSTALLINE SI
Kentaro Kutsukake, Momoko Deura, Yutaka Ohno, Ichiro Yonenaga
Tohoku University, Sendai, Japan

9:10 AM - 9:30 AM
CONCENTRATION AND LOCALIZATION OF IMPURITIES IN SILICON BY COLD-CONTAINER CRYSTAL GROWTH FOR ENHANCED ANALYTICAL DETECTION
Ted F. Ciszek
Siliconsultant Division of Geolite, Evergreen, CO, USA

9:30 AM - 10:00 AM
THREE-DIMENSIONAL ANALYSIS OF DISLOCATION MULTIPLICATION IN SINGLE-CRYSTAL SILICON UNDER ACCURATE CONTROL OF COOLING HISTORY OF TEMPERATURE
Invited
Bing Gao, Satoshi Nakano, Koichi Kakimoto
Kyushu University, Fukuoka, Japan

Wednesday, August 5, 2015

8:00 AM - 10:00 AM

Nonlinear Optical and Laser Host Materials (ACCGE) 3

Location: Madison
Session Chair(s): Shekhar Guha

8:00 AM - 8:30 AM
SINGLE-CRYSTAL FIBER OPTICS-A REVIEW
Invited
James A. Harrington
Rutgers University, Piscataway, NJ, USA

8:30 AM - 8:45 AM
STRESS-OPTIC MEASUREMENTS IN POLYCRYSTALLINE YAG
David E. Zelmon,[1]Steven T. Fenstermaker[2]
[1]US Air Force Research Laboratory, Wright-Patterson AFB, OH, USA, [2]University of Dayton Research Institute Dayton, OH, USA

8:45 AM - 9:00 AM
ADVANCES IN CRYSTAL GROWTH AND CHARACTERIZATION OF SINGLE CRYSTAL CdSiP2
Kevin T. Zawilski,[1]Peter G. Schunemann,[1]F. Kenneth Hopkins,[2]Shekhar Guha,[2]Jon Slagle,[2]Joel Murray,[2]Jacob Barnes,[2]David E. Zelmon,[2]Steve Fenstermaker[2]
[1]BAE Systems, Nashua, NH, USA, [2] US Air Force Research Laboratory, AFRL/RX, Wright-Patterson AFB, OH, USA

9:00 AM - 9:15 AM
IDENTIFICATION OF NATIVE DEFECTS IN CdSiP2 CRYSTALS USING ELECTRON PARAMAGNETIC RESONANCE
Eric M. Golden,[1]Ember Maniego,[1]Nancy C. Giles,[1]Larry E. Halliburton,[2]F. Kenneth Hopkins,[1]Peter G. Schunemann,[3]Kevin T. Zawilski[3]
[1]Air Force Institute of Technology, Wright-Patterson Air Force Base, OH, USA, [2]West Virginia University, Morgantown, WV, USA, [3]BAE Systems, Nashua, NH, USA

9:15 AM - 9:30 AM
BULK GROWTH ON SODIUM TETRABORATE DECAHYDRATE SINGLE AND INVESTIGATIONS ON THEIR THERMAL AND OPTICAL PROPERTIES
Ezhil Vizhi R, Lakshmipriya M
VIT University, Vellore, India

9:30 AM - 9:45 AM
GROWTH OF N-BENZYL-2-METHYL-4-NITROANILINE (BNA) SINGLE CRYSTAL FIBER FOR TERAHERTZ GENERATION.
Kei Kamada,[1] Yuma Takida,[2] Hiroaki Minamide,[2] Shunsuke Kurosawa,[1]Yuui Yokota,[1] Yuji Ohashi, Akira Yoshikawa[1]
[1]Tohoku University, Sendai, Japan, [2]The Institute of Physical and Chemical Research (RIKEN), Sendai, Japan

9:45 AM - 10:00 AM
GROWTH,THERMAL AND SPECTROSCOPIC PROPERTIES OF A YTTERBIUM DOPED LASER CRYSTAL
Zhongben Pan,[1]Huaqiang Cai,[1]Haohai Yu,[2]Huaijin Zhang,[2]Jiyang Wang[2]
[1]Key Laboratory of Science and Technology on High Energy Laser, Institute of Chemical Materials and A, Mianyang, China, [2]State Key Laboratory of Crystal Materials and Institute of Crystal Materials, Shandong University, Jinan, China

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Wednesday, August 5, 2015

8:00 AM - 10:00 AM

Second Symposium on 2D Electronic Materials (Joint ACCGE/OMVPE) 7

Location: Amphitheater
Session Chair(s): Alton Horsfall

8:00 AM - 8:30 AM
EXPLORE THE ROLE OF THE BUFFER LAYER AND SURFACE FEATURES FOR QUALITY GRAPHENE ON SIC
Invited
Gholamreza Yazdi,[1]Tihomir Iakimov,[1]Fatima Akhtar,[1]Ivan Ivanov,[1]A. Zakharov,[2]Rositsa Yakimova[1]
[1]Linkoping University, Linkoping, Sweden, [2] Lund University, Lund, Sweden

8:30 AM - 9:00 AM
PLASMON-ENHANCED TERAHERTZ DETECTION VIA THE PHOTOTHERMOELECTRIC EFFECT IN EPITAXIAL GRAPHENE
Invited
Xinghan Cai,[1]Andrei B. Sushkov,[1]Ryan J. Suess,[1]Mohammad M. Jadidi,[1]Gregory S. Jenkins,[1]Luke O. Nyakiti,[2]Rachel L. Myers-Ward,[3]Shanshan Li,[1]Jun Yan,[4]D. Kurt Gaskill,[3]Thomas E. Murphy,[1]H. Dennis Drew,[1]Michael S. Fuhrer[5]
[1]University of Maryland, College Park, MD, USA, [2]Texas A&M University, TX, USA, [3]U.S. Naval Research Laboratory, Washington, DC, USA, [4]University of Massachusetts, Amherst, MA, USA, [5]Monash University, Victoria, Australia

9:00 AM - 9:20 AM
TOP GATED GRAPHENE PN JUNCTIONS FOR TERAHERTZ DETECTION
Anthony K. Boyd,[1]Anindya Nath,[1]Marc Currie,[1]Mehdi Jadidi,[2]Ryan Suess,[2]Andrei Sushkov,[2]Greg Jenkins,[2]H. Dennis Drew,[2]Thomas Murphy,[2]Kevin Daniels,[1]Rachael Myers-Ward,[1]D. Kurt Gaskill[1]
[1]US Naval Research Laboratory, Washington, DC, USA, [2]University of Maryland, College Park, MD, USA

9:20 AM - 9:40 AM
GROWTH OF HIGH MOBILITY EPITAXIAL GRAPHENE VIA SYSTEMATIC HYDROGEN INTERCALATION FOR THZ PLASMONICS
Kevin M. Daniels, Anthony Boyd, Rachael Myers-Ward, D. Kurt Gaskill
U.S. Naval Research Laboratory, Washington, DC, USA

Wednesday, August 5, 2015

8:00 AM - 10:00 AM

Thin Film Growth, Epitaxy, and Superlattices (Joint ACCGE/OMVPE) 3

Location: Jefferson
Session Chair(s): Tom Kuech

8:00 AM - 8:20 AM
MOCVD GAN EPITAXY METAL SUBSTRATES
Chris Yung,[1]Daniel Koleske,[2]Vladimir Matias[1]
[1]iBeam Materials, Santa Fe, NM, USA, [2]Sandia National Laboratories, Albuquerque, NM, USA

8:20 AM - 8:40 AM
CONSTRAINED NUCLEATION OF CDS, ZNS AND $(CD_XZN_{1-X})S$ HETEROEPITAXIAL NANOCRYSTALS ON POLYDIACETYLENE LANGMUIR FILMS
Amir Berman, Alexander Upcher, Yuval Golan
Ben-Gurion University, Beer-Sheva, Israel

8:40 AM - 9:00 AM
RECONCILING CAPTURE-ZONE DISTRIBUTIONS AND GROWTH EXPONENTS: ROLE OF HOT PRECURSORS IN SUBMONOLAYER GROWTH OF HEXAPHENYL ON MICA
Theodore L. Einstein,[1]Josue R. Morales-Cifuentes,[1]Alberto Pimpinelli[2]
[1]University of Maryland, College Park, MD, USA, [2]Rice Quantum Institute, Houston, TX, USA

9:00 AM - 9:20 AM
MOLECULAR DYNAMICS SIMULATION OF GE DEPOSITION AND ISLANDING ON AMORPHOUS SILICA SUBSTRATES
Talid Sinno,[1]Claire Y. Chuang,[1]Sang M. Han,[2]Luis A. Zepeda-Ruiz[3]
[1] University of Pennsylvania, Philadelphia, PA, USA, [2] University of New Mexico, Albuquerque, NM, USA, [3] Lawrence Livermore National Laboratory, Livermore, CA, USA

9:20 AM - 9:40 AM
KINETIC MONTE CARLO SIMULATIONS OF EPITAXIAL GROWTH OF WURTZITE GaN
Manjusha Chugh, Dr. Madhav Ranganathan
Indian Institute of Technology, Kanpur, India

9:40 AM - 10:00 AM
PREPARATION AND CHARACTERIZATION OF EPITAXIAL ERBIUM OXIDE FILMS
Wei Mao
The University of Tokyo, Tokyo, Japan

Wednesday, August 5, 2015

10:30 AM - 12:00 PM

Nonlinear Optical and Laser Host Materials (ACCGE) 4

Location: Madison
Session Chair(s): Kevin Zawilski

10:30 AM - 12:00 PM

Nonlinear Optical and Laser Host Materials (ACCGE) 4

Location: Madison
Session Chair(s): Kevin Zawilski

10:30 AM - 11:00 AM
CR AND FE DOPED II-VI MID-IR GAIN MEDIA. FABRICATION CHALLENGES AND PRACTICAL APPLICATIONS IN FIBER-BULK MID-IR LASER SYSTEMS
Invited
Sergey Mirov,[1] Vladimir Fedorov,[1] Dmitry Martyshkin,[1] Igor Moskalev,[2] Mike Mirov,[2] Alan Martinez,[1] Sergey Vasilyev[2]
[1]University of Alabama at Birmingham, Birmingham, AL, USA, [2]IPG Photonics Mid-IR Lasers, Birmingham, Alabama, USA

11:00 AM - 11:15 AM
HYDROTHERMAL GROWTH AND STUDY OF BULK ZNSE SINGLE CRYSTALS
Martin M. Kimani, Eric Hunt, Vlad Tassev, J. Matthew Mann
Air Force Research Laboratory, Wright-Patterson AFB, OH, USA

11:15 AM - 11:30 AM
HYDROTHERMAL GROWTH AND SPECTROSCOPY OF DOPED LU2O3 SINGLE CRYSTALS
Joseph Kolis,[1]Colin McMillen,[1]Cheryl Moore,[1]Duminda Sanjeewa,[1]David Brown[2]
[1]Clemson University, Clemson, SC, USA, [2]Snake Creek Lasers, Friendsville, PA, USA

11:30 AM - 12:00 PM
THIN FILM GROWTH OF OPTICALLY ACTIVE CORRELATED OXIDES
Invited
Shriram Ramanathan
Harvard University, Cambridge, MA, USA

Wednesday, August 5, 2015

10:30 AM - 12:00 PM

Thin Film Growth, Epitaxy, and Superlattices (Joint ACCGE/OMVPE) 4

Location: Jefferson
Session Chair(s): Andrey Krysa

10:30 AM - 11:00 AM
DESIGN AND GROWTH OF STRAIN-BALANCED SUPERLATTICE FOR EFFICIENCY ENHANCEMENT OF MULTI-JUNCTION SOLAR CELLS
Invited
Masakazu Sugiyama
The University of Tokyo, Tokyo, Japan

11:00 AM - 11:20 AM
LATERAL PHASE SEPARATION IN COMMERCIALLY IMPORTANT (GA,AL)INP LAYERS GROWN BY MOCVD AND MBE
Andrew Norman,[1]Kunal Mukherjee,[2]Theresa Christian,[1]Nancy Haegel,[1]Angelo Mascarenhas,[1]Eugene Fitzgerald,[2]Pranob Misra,[3]Ting Liu,[3]Arsen Sukiasyan,[3]Evan Pickett,[3]Homan Yuen[3]
[1]National Renewable Energy Laboratory, Golden, CO, USA, [2]Massachusetts Institute of Technology, Cambridge, MA, USA, [3]Solar Junction, Inc., San Jose, CA, USA

11:20 AM - 11:40 AM
3D MAPPING OF BI ATOM DISTRIBUTION IN OMVPE-GROWN GAAS1-XBIX/GAAS SUPERLATTICE STRUCTURES BY ATOM PROBE TOMOGRAPHY
Weixin Chen, Adam Wood, Kamran Forghani, Luke Mawst, Thomas Kuech, Susan Babcock
University of Wisconsin–Madison, Madison, WI, USA

11:40 AM - 12:00 PM
STRAIN-MEDIATED INTERFACIAL DIFFUSION AND SHIFTS IN INTERSUBBAND TRANSITION ENERGIES IN ALN/ALGAN SUPERLATTICES
Michael W. Moseley, Andrew A. Allerman, Inès Montaño, Jonathan J. Wierer, Jr., Anna Tauke-Pedretti, Erik Skogen, G. Allen Vawter
Sandia National Laboratories, Albuquerque, New Mexico, USA

Wednesday, August 5, 2015

10:30 AM - 12:00 PM

Materials for Photovoltaics and Energy Technology (Joint ACCGE/OMVPE) 4

Location: Gallatin
Session Chair(s): Joan Redwing, Todd Monson

10:30 AM - 10:50 AM
FABRICATION OF BULK IRON NITRIDE FOR ENERGY CONVERSION
Todd Monson,[1]Baolong Zheng,[2]Yizhang Zhou,[2]Enrique Lavernia[2]
[1]Sandia National Labs, Albuquerque, NM, USA, [2]University of California, Davis, Davis, CA, USA

10:50 AM - 11:10 AM
SYNTHESIS AND CHARACTERIZATION OF SILICON DICHALCOGENIDES, SI(SEXS1-X)2, FOR PHOTOVOLTAIC APPLICATIONS
Chen Chen,[1]XiaoTian Zhang,[1]Lakshmi Krishna,[2]Chito Kendrick,[2]ShunLi Shang,[1]Eric Toberer,[2]Zi-Kui Liu,[1]Reuben Collins,[2]Adele Tamboli,[3]Joan M. Redwing[1]
[1]The Pennsylvania State University, University Park, PA, USA, [2]Department of Physics, Colorado School of Mines, Golden, Colorado, CO, USA, National Center for Photovoltaics, [3]National Renewable Energy Laboratory, Golden, Colorado, Colorado, USA

11:10 AM - 11:30 AM
DISCUSSION ON THE PURITY AND THE CRYSTALLIZATION OF CZTS COMPOUND
Meftah Tablaoui,[1]Kheirreddine Lebbou,[2]Mourad Derbal[1]
[1]Centre de Recherche en Technologie des Semi-conducteurs pour l'Énergétique (CRTSE), Algiers, Algeria, [2]Institut Lumière Matière, UMR5306 Université Lyon 1-CNRS, Villeurbanne, France, [3]Université de Blida, département de physique, Algiers, Algeria

11:30 AM - 11:50 AM

THE DETERMINATION OF PBSNTE NANOLAYERS CRITICAL THICKNESS PREPARED BY MBE TECHNIQUE ON BAF2 (111) SUBSTRATES

Alexander M. Samoylov,[1]Anton S. Toreev,[1]Alexander E. Klimov,[2]Alexey Akimov,[2]Vladimir N. Shumsky[2]

[1]Voronezh State University, Voronezh, Russian Federation, [2]Russian Academy of Science, Institute of Physics of Semiconductors, Novosibirsk, Russian Federation

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Thursday, August 6, 2015

8:00 AM - 10:00 AM

Bulk Crystal Growth 1

Location: Jefferson
Session Chair(s): Aleksandar Ostrogorsky, Jeffrey Derby

8:00 AM - 8:30 AM
PROGRESS IN CONTINUOUS CZOCHRALSKI CRYSTAL GROWTH FOR SILICON MONO WITH DOPANT EXHIBITING SEGREGATION COEFFICIENT FAR FROM UNITY
Invited
Joel K. Kearns,[1]Joseph C. Holzer[2]
[1]NASA Glenn Research Center, Cleveland, OH, USA, [2]SunEdison, Incorporated, St. Peters, MO, USA

8:30 AM - 9:00 AM
OBSERVATIONS OF SECONDARY DEFECTS OF INTRINSIC POINT DEFECTS IN CZ SILICON CRYSTALS DETACHED FROM MELT USING FOUR DIFFERENT TYPES OF CHARACTERIZATION TECHNIQUE
Invited
Takao Abe,[1]Toru Takahashi,[1]Koun Shirai[2]
[1]ShinEtsu Handotai, Gunma, Japan, [2]ISIR, Osaka Univ., Osaka, Japan

9:00 AM - 9:15 AM
ONE-SEED CASTING LARGE-SIZE MONOCRYSTALLINE SILICON FOR HIGH-EFFICIENCY AND LOW-COST SOLAR CELLS
Bing Gao,[1]Satoshi Nakano,[1]Hirofumi Harada,[2]Yoshiji Miyamura,[2]Takashi Sekiguchi,[2]Koichi Kakimoto[1]
[1]Kyushu University, Fukuoka, Japan, [2]National Institute for Materials Science, Tsukuba, Japan

9:15 AM - 9:30 AM
TWIN GENERATION DURING CZOCHRALSKI-GROWN OF SI AND SIGE
Ichiro Yonenaga, Kaihei Inoue, Kentaro Kutsukake, Yutaka Ohno
Tohoku University, Sendai, Japan

9:30 AM - 9:45 AM
LATTICE PARAMETER OF IV-IMPURITY DOPED SI: REVISITED TO VEGARD'S LAW
Ichiro Yonenaga,[1]Raira Gotoh,[1]Kazuhiko Omote,[2]Toshinori Taishi,[3]Yuki Tokumoto,[4]Kentaro Kutsukake,[1]Yutaka Ohno[1]
[1]Tohoku University, Sendai, Japan, [2]RIGAKU Corporation, Akishima, Japan, [3]Shinshu University, Nagano, Japan, [4]University of Tokyo, Tokyo, Japan

9:45 AM - 10:15 AM
SCALE UP OF DS- AND CZ-SILICON GROWTH PROCESSES UNDER TMF
Invited
Natasha Dropka, Frank M. Kiessling
Leibniz Institute for Crystal Growth, Berlin, Germany

Thursday, August 6, 2015

8:00 AM - 10:00 AM

Industrial Crystal Growth Technologies and Equipment (ACCGE) 1

Location: Madison
Session Chair(s): Peter Schunemann

8:00 AM - 8:30 AM
WORLD'S LARGEST SAPPHIRE FOR MANY APPLICATIONS
Invited
Chandra P. Khattak, Raj Shetty, C. Richard Schwerdtfeger, Saurabh Ullal
ARC Energy, Nashua, NH, USA

8:30 AM - 9:00 AM
SYNCHROTRON TOPOGRAPHY STUDIES OF THE ORIGINS AND EVOLUTION OF DEFECTS IN INDUSTRIALLY GROWN 4H-SIC SUBSTRATES AND EPILAYERS
Invited
Michael Dudley
Stony Brook University, Stony Brook, NY, USA

9:00 AM - 9:15 AM
RAPID FURNACE THERMAL STABILIZATION
Steve Kimbel
SunEdison Inc, St. Peters, MO, USA

9:15 AM - 9:30 AM
EQUIPMENT AND METHODS FOR GROWING LARGE DIAMETER 4H SIC BOULES FOR POWER APPLICATIONS
Eugene Tupitsyn, Neel Dhanaraj, Jeffery Wyatt, Stan Hemstad, Govindhan Dhanaraj, Larry Rowland
Aymont Technology Inc., Ballston Spa, NY, USA

9:30 AM - 9:45 AM
ANALYSIS OF THE EFFECT OF SYMMETRIC AND ASYMMETRIC CUSP MAGNETIC FIELDS ON SOLIDIFICATION INTERFACE DURING CZOCHRALSKI SILICON GROWTH
Parthiv Daggolu,[1]ALEX GALYUKOV,[2]Alexey Kondratyev[2]
[1]SunEdison Semiconductor LLC, St Peters, MO, USA, [2]STR US Inc, Richmond, VA, USA

9:45 AM - 10:00 AM
EFFECTS OF THE POWER ARRANGEMENT AND HOT ZONE DESIGN DURING THE GROWTH OF LARGE SIZE MULTICRYSTALLINE SILICON INGOTS BY THE SEEDED DIRECTIONAL SOLIDIFICATION PROCESS
Szu-Han Liao,[1]Jyh-Chen Chen,[1]Chun-Hung Chen,[2]Yen-How Huang,[2]Cheng-Jui Yang,[2]Huang-Wei Lin[2]
[1]National Central University, Taoyuan, Taiwan, [2]Sino-American Silicon Products Inc., Hsinchu, Taiwan

Thursday, August 6, 2015

8:00 AM - 10:00 AM

Biological, Biomimetic, and Organic Crystallization (ACCGE) 1

Location: Amphitheater
Session Chair(s): Sidney Omelon & Roland Kroger

8:00 AM - 8:30 AM
MINERAL NUCLEATION AND GROWTH ON FUNCTIONALIZED SURFACES
Invited
Maria Sushko,[1]Donghai Mei,[1]Robert Darkins,[2]Dorothy Duffy,[2]Jun Liu[1]
[1]Pacific Northwest National Laboratory, Richland, WA, USA, [2]University College London, London, United Kingdom

8:30 AM - 9:00 AM
PRE-NUCLEATION CLUSTERS AS SOLUTE PRECURSORS IN PHASE SEPARATION
Invited
Denis Gebauer
University of Konstanz, Konstanz, Germany

9:00 AM - 9:30 AM
INSIGHTS FROM SIMULATION FOR CALCIUM CARBONATE NANOPHASES, CRYSTALS AND NUCLEATION
Invited
P. M. Rodger, Aaron R. Finney, Yuriy G. Bushuev
University of Warwick, Coventry, United Kingdom

9:30 AM - 10:00 AM
A CLASSICAL VIEW ON A NONCLASSICAL CRYSTALLIZATION PROCESS: THE PILP-PROCESS REVISITED.
Invited
Stephan E. Wolf
Friedrich-Alexander-University Erlangen-Nürnberg, Erlangen, Germany

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Thursday, August 6, 2015

8:00 AM - 10:00 PM

OMVPE of Compound Semiconductors for Optoelectronics 1

Location: Gallatin
Session Chair(s): Jeff Cederberg

8:00 AM - 8:20 AM
ENHANCING THE QUANTUM EFFICIENCY OF III-V NANOWIRES
Hoe Tan,[1]Nian Jiang,[1]Patrick Parkinson,[2]Sudha Mokkapati,[1]Dhruv Saxena,[1]Qiang Gao,[1]Chennupati Jagadish[1]
[1]The Australian National University, ACT, Australia, [2]The University of Manchester, Manchester, United Kingdom

8:20 AM - 8:40 AM
EFFICIENT YELLOW AND GREEN EMITTING INGAN / GAN NANOSTRUCTURED QW MATERIALS AND LEDS
Yoshitake Nakajima, Yenting Lin, Daniel P. Dapkus
University of Southern California, Los Angeles, CA, USA

8:40 AM - 9:00 AM
GROWTH AND CHARACTERIZATION OF AlxGa1-xN ULTRAVIOLET AVALANCHE PHOTODIODES GROWN BY METALORGANIC CHEMICAL VAPOR DEPOSITION
Jeomoh Kim,[1]Mi-Hee Ji,[1]Theeradetch Detchprohm,[1]Russell Dupuis,[1]Ashok Sood,[2]Nabir Dhar[3]
[1]Georgia Institute of Technology, Atlanta, GA, USA, [2]Magnolia Optical Technologies, Woburn, MA, USA, [3]Night Vision Sensors and Electronic Division, Ft. Belvoir, VA, USA

9:00 AM - 9:20 AM
MOVPE GROWTH OF GA(PASBI)/GAAS AND GA(NASBI)/GAAS AT LOW TEMPERATURES FOR OPTOELECTRONIC APPLICATIONS
Lukas Nattermann
Philipps Universität Marburg, Marburg, Germany

9:20 AM - 9:40 AM
ORGANOMETALLIC VAPOR PHASE EPITAXY (OMVPE) OF HIGH BI CONTENT GA(ASPBI) "BULK" LAYERS
Kamran Forghani,[1]Maria Losurdo,[2]Yingxin Guan,[1]April Brown,[3]Guangfu Luo,[1]Adam Wood,[1]Susan Babcock,[1]Luke Mawst,[1]Dane Morgan,[1]Thomas F. Kuech[1]
[1]University of Wisconsin, Madison, WI, USA, [2]Institute of Nanotechnology, CNR, Bari, Italy, [3]Duke University, NC, USA

9:40 AM - 10:00 AM
N-INCORPORATION IN GAAS USING A NOVEL GROUP-V-PRECURSORS WITH NO DIRECT C-N-BOND
Eduard Sterzer
Philipps-Universität Marburg, Marburg, Germany

Thursday, August 6, 2015

10:30 AM - 12:00 AM

OMVPE of Compound Semiconductors for Optoelectronics 2

Location: Gallatin
Session Chair(s): Jeff Cederberg

10:30 AM - 10:50 AM
MOVPE GROWTH OF LASER STRUCTURES FOR HIGH-POWER APPLICATIONS AT DIFFERENT AMBIENT TEMPERATURES
Frank Bugge, Andre Maaßdorf, Paul Crump, Carlo Frevert, Steffen Knigge, Hans Wenzel, Götz Erbert, Markus Weyers
Ferdinand-Braun-Institut, Berlin, Germany

10:50 AM - 11:10 AM
DEVELOPMENT OF STRAIN-COMPENSATED INGAAS/GAASP QW FOR OPTICALLY PUMPED VERTICAL EXTERNAL CAVITY SURFACE EMITTING LASERS AT 1178 NM
Jeffrey G. Cederberg,[1]Darrell L. Alliman,[1]Gregory M. Peake,[1]Alexander R. Albrecht,[2]Shawn Hacket,[2]Shawn Hacket,[2]Zhou Yang,[2]Mansoor Sheik-Bahae[2]
[1]Sandia National Laboratories, NM, USA, [2]University of New Mexico, Albuquerque, NM, USA

11:10 AM - 11:30 AM
SENSITIVITY OF QUANTUM CASCADE LASER PERFORMANCE TO THICKNESS AND DOPING VARIATIONS
Dominic F. Siriani,[1]Christine A. Wang,[1]Joseph P. Donnelly,[1]Leo J. Missaggia,[1]Michael K. Connors,[1]Daniel R. Calawa,[1]Daniel McNulty,[1]Tobias S. Mansuripur,[2]Federico Capasso[2]
[1]MIT Lincoln Laboratory, Lexington, MA, USA, [2]Harvard University, Cambridge, MA, USA

11:30 AM - 11:50 AM
MID-INFRARED QUANTUM CASCADE LASERS FABRICATED BY NON-SELECTIVE REGROWTH AND CHEMICAL POLISHING
Luke J. Mawst, Chun-Chieh Chang, Chris Sigler, Jeremy Kirch, Phillip Buelow, Colin Boyle, Thomas Kuech, Don Lindberg, Thomas Earles, Dan Botez
University of Wisconsin, Madison, WI, USA

Thursday, August 6, 2015

10:30 AM - 12:00 PM

Bulk Crystal Growth 2

Location: Jefferson
Session Chair(s): Aleksandar Ostrogorsky, Robert Feigelson

10:45 AM - 11:00 AM
ENHANCEMENT OF GAAS VGF PROCESS USING A HEATER MAGNET MODULE
Christiane Frank-Rotsch, Natasha Dropka, Alexander Glacki, Uta Juda
Leibniz-Institute for Crystal Growth, Berlin, Germany

11:00 AM - 11:30 AM
DETACHED BRIDGMAN GROWTH OF GERMANIUM AND GERMANIUM-SILICON CRYSTALS UNDER MICROGRAVITY
Invited
Arne Croell,[1]Adam Hess,[1]Jan Zähringer,[1]Tina Sorgenfrei,[1]Alexander Egorov,[2]Alexander Senchenkov[2]
[1]University of Freiburg, Freiburg, Germany, [2]NIISK - Research and Development Institute for Launch Complexes, Moscow, Russian Federation

11:30 AM - 11:45 AM
SHAPE EVOLUTION OF DETACHED BRIDGMAN CRYSTALS GROWN IN MICROGRAVITY
Martin Volz,[1] Konstantin Mazuruk[2]
[1]NASA MSFC, Huntsville, AL, USA, [2]Univeristy of Alabama, Huntsville, AL, USA,

11:45 AM - 12:00 PM
GROWTH OF INSB AND INI CRYSTALS ON EARTH AND IN MICROGRAVITY
Aleksandar G. Ostrogorsky,[1] Alexei Churilov,[2] Martin Volz,[3] Vladimir Riabov,[1] Lodewijk van den Berg[4]
[1]IIT, Chicago, IL, USA, [2]RMD, Watertown, MA, USA, [3]MSFC, NASA, Huntswille, AL, USA, [4]Constellation Technology Corporation, Largo, FL, USA

Thursday, August 6, 2015

10:30 AM - 12:00 PM

Industrial Crystal Growth Technologies and Equipment (ACCGE) 2

Location: Madison
Session Chair(s): Matt Whittaker

10:30 AM - 11:00 AM
ADVANCEMENTS ON THE LARGE DIAMETER SIC SUBSTRATE GROWTH AT II-VI
Invited
Varatharajan Rengarajan, Xueping Xu, Avinash Gupta, Ping Wu, Mark Ramm, Ilya Zwieback, Gary Ruland
Advanced Materials Group, II-VI Inc., Pine brook, NJ, USA

11:00 AM - 11:15 AM
CHARACTERIZATION OF CdZnTe SINGLE CRYSTALS GROWN UNDER DIFFERENT CD OVERPRESSURES
Ouloide Y. GOUE,[1] Raghothamachar Balaji,[1] Michael Dudley,[1] Ching-Hua Su[2]
[1]Stony Brook University, Stony Brook, NY, USA, [2]NASA/Marshall Space Flight Center, Huntsville, AL, USA

11:15 AM - 11:45 AM
MATERIALS INNOVATION PLATFORMS: A NEW NSF MID-SCALE INSTRUMENTATION AND USER PROGRAM TO ACCELERATE THE DISCOVERY OF NEW MATERIALS
Invited
Sean L. Jones, Guebre X. Tessema, Tom Rieker
National Science Foundation, Arlington, VA, USA

Thursday, August 6, 2015

10:30 AM - 12:00 PM

Biological, Biomimetic, and Organic Crystallization (ACCGE) 2

Location: Amphitheater
Session Chair(s): Hamid Nurrohman & Laurie Gower

10:30 AM - 11:00 AM
SYNTHESIS OF STABLE AMORPHOUS NUCLEI FROM IONIC LIQUIDS
Invited
Wolfgang Tremel,[1]Michael Dietzsch,[1]Sebastian Leukel,[1]Aaron Gehl,[1]Bastian Barton,[1]Ute Kolb,[1]Renee Siegel,[2]Jürgen Senker[2]
[1]Johannes Gutenberg Universität, Mainz, Germany, [2]Universität Bayreuth, Bayreuth, Germany

11:00 AM - 11:30 AM
CORRELATION OF MINERALIZATION PATTERNS ON THE NANO- AND MICROMETER SCALE IN BONE
Invited
Roland Kroeger,[1]Natalie Reznikov,[2]Charlotte A. Boig,[1]Teresa Roncal-Herrero[1]
[1]University of York, York, United Kingdom, [2]Imperial College, London, United Kingdom

11:30 AM - 12:00 PM
CRYSTALLIZATION MODIFIES THE STRESS-STRAIN BEHAVIOR OF COLLAGEN FIBERS
Invited
Patrick J. Kiley, James A. Elliott
University of Cambridge, Cambridge, United Kingdom

Thursday, August 6, 2015

1:30 PM - 3:00 PM

Bulk Crystal Growth 3

Location: Jefferson
Session Chair(s): Aleksandar Ostrogorsky, Robert Feigelson

1:30 PM - 1:45 PM
ANALYSIS OF THE EFFECTS OF A ROTATING MAGNETIC FIELD ON THE GROWTH OF CADMIUM ZINC TELLURIDE BY THE TRAVELING HEATER METHOD
Zaoyang Li, Jeff H. Peterson, Andrew Yeckel, Jeffrey J. Derby
University of Minnesota, Minneapolis, MN, USA

1:45 PM - 2:00 PM
GROWTH AND CHARACTERIZATION OF BRIDGMAN GROWN DETECTOR GRADE CdZnTe BULK CRYSTALS IN PBN CRUCIBLE
Santosh K. Swain, Jedidiah McCoy, Rohan Rao, Kelvin Lynn
Washington State University, Pullman, WA, USA

2:00 PM - 2:15 PM
EMPIRICAL CORRELATIONS FOR EFFECTIVE SEGREGATION COEFFICIENT
Alekandar G. Ostrogorsky
IIT, Chicago, IL, USA

2:15 PM - 2:30 PM
CZOCHRALSKI GROWTH OF LEAD IODIDE
Arne Croell,[1]Justus Tonn,[1]Andreas Danilewsky,[1]Marie Matuchova[2]
[1]University of Freiburg, Freiburg, Germany, [2]Institute of Chemical Technology, Prague, Czech Republic

2:30 PM - 2:45 PM
DEVELOPMENT OF THE CZOCHRALSKI TECHNIQUE FOR SINGLE CRYSTAL GROWTH OF MIXED ALKALI EARTH HALIDES
Didier Perrodin, Zewu YAN, Ivan Khodyuk, Gregory Bizarri, Edith Bourret
Lawrence Berkeley National Laboratory, Berkeley, CA, USA

Thursday, August 6, 2015

1:30 PM - 3:00 PM

Industrial Crystal Growth Technologies and Equipment (ACCGE) 3

Location: Madison
Session Chair(s): Matt Whittaker

1:30 PM - 2:00 PM
GROWTH OF FARADAY ROTATOR MATERIALS FOR OPTICAL ISOLATOR APPLICATIONS
Invited
Kevin T. Stevens,[1]Greg Foundos,[1]John Sundeen,[1]Allen Brady,[1]David E. Zelmon,[2]Emily C. Erdman[2]
[1]Northrop Grumman SYNOPTICS, Charlotte, NC, USA, [2]Air Force Research Lab, Dayton, OH, USA

2:00 PM - 2:30 PM
LASER HEATED PEDESTAL GROWTH OF YB DOPED CAALGDO4
Invited
Gisele Maxwell, Bennett Ponting, Eminet Gebremichael, Ruben Magana
Shasta Crystals Inc., San francisco, CA, USA

2:30 PM - 3:00 PM
STRATEGIES FOR IMPROVING INDUSTRIAL CRYSTAL GROWTH PROCESSES
Hunter Marshall
CTG Advanced Materials, Bolingbrook, IL, USA

Thursday, August 6, 2015

1:30 PM - 3:00 PM

Novel OMVPE Techniques and In-Situ Monitoring

Location: Gallatin
Session Chair(s): Oliver Pitts

1:30 PM - 1:50 PM
DIFFRACTOMETER AND GROWTH SYSTEM FOR IN-SITU COHERENT X-RAY STUDIES OF EPITAXY
Guangxu Ju,[1]Matthew J. Highland,[1]Carol Thompson,[2]Jeffrey A. Eastman,[1]G. Brian Stephenson,[1]Paul H. Fuoss[1]
[1]Argonne National Lab, Argonne, IL, USA, [2]Northern Illinois University, DeKalb, IL, USA

1:50 PM - 2:10 PM
IN-SITU OPTICAL MONITORING OF QUANTUM CASCADE LASER STRUCTURES DURING MOVPE GROWTH
Andrey Krysa, John Roberts, Dmitry Revin, John Cockburn
University of Sheffield, Sheffield, United Kingdom

2:10 PM - 2:30 PM
LARGE AREA SEMI-POLAR (11-22)-GAN: HETEROEPITAXIAL GROWTH OPTIMIZATION WITH THE AID OF IN-SITU METROLOGY
Frank Brunner, Markus Weyers
Ferdinand-Braun-Institut, Berlin, Germany

2:30 PM - 2:50 PM
IN SITU MEASUREMENT OF BULK III-V ATOMIC ORDERING USING TWO-DIMENSIONAL WAFER CURVATURE
Ryan M. France, William E. McMahon, Joongoo Kang, Myles A. Steiner, John F. Geisz
National Renewable Energy Laboratory, Golden, CO, USA

Thursday, August 6, 2015

1:30 PM - 3:00 PM

Biological, Biomimetic, and Organic Crystallization (ACCGE) 3

Location: Amphitheater
Session Chair(s): Patrick Kiley & James Elliot

1:30 PM - 2:00 PM
BIOLOGICAL DEPOLYMERIZATION PATHWAY TO APATITE NUCLEATION
Invited
Sidney Omelon
University of Ottawa, Ottawa, ON, Canada

2:00 PM - 2:15 PM
MINERALIZATION OF DENSE LAMELLAR COLLAGEN FILMS
Brian Wingender,[1]Laurie Gower,[1]Patrick Bradley,[2]Jeff Ruberti[2]
[1]University of Florida, Gainesville, FL, USA, [2]Northeastern University, Boston, MA, USA

2:15 PM - 2:45 PM
CAN CARIES-INFECTED DENTIN AND INHERITED DENTIN DEFECTS BE RECOVERED BY GUIDED TISSUE REMINERALIZATION
Invited
Hamid Nurrohman,[1]Kuniko Saeki,[1]Karina Carneiro,[1]Yung-Ching Chien,[1]Chunlin Qin,[2]Stefan Habelitz,[1]Sally J. Marshall,[1]Grayson W. Marshall[1]
[1]University of California-San Francisco, San Francisco, CA, USA, [2]Texas A&M University Baylor College of Dentistry, Dallas, TX, USA

2:45 PM - 3:00 PM
BIOMIMETIC RANDALL'S PLAQUE AS AN IN VITRO MODEL SYSTEM FOR STUDYING THE ROLE OF ACIDIC BIOPOLYMERS IN IDIOPATHIC STONE FORMATION
Archana Lovett, Douglas Rodriguez, Saeed Khan, Laurie Gower
University of Florida, Gainesvile, FL, USA

Thursday, August 6, 2015

3:30 PM - 5:00 PM

Bulk Crystal Growth 4

Location: Jefferson
Session Chair(s): Aleksandar Ostrogorsky, Robert Feigelson

3:30 PM - 4:00 PM
SrTiO3 BULK CRYSTAL GROWTH FROM MELT
Invited
Christo Guguschev, Zbigniew Galazka, Dirk J. Kok, Uta Juda, Reinhard Uecker
Leibniz Institute for Crystal Growth, Berlin, Germany

4:00 PM - 4:15 PM
LARGE LGT (LA3 GA5.5TA0.5O14) BULK CRYSTAL GROWTH FROM THE MELT AND OPTICAL CHARACTERIZATION.
Abdesselem El Hassouni,[1]Belkacem Boutahraoui,[1]Hugues Cabane,[2]Marc Dumortier,[2]Kheirreddine Lebbou,[1]Patricia Jeandel,[2]Jean Jaques Boy,[3]Maroua Allani,[3]Thomas Baron,[3]Sylvain Ballandras,[4]Thierry Laroche,[4]Sébastien Alzuaga,[5]François Gegot[5]
[1]ILM, Villeurbanne, France, [2]Cristal Innov – Université Lyon, Sainte-Hélène du Lac, France, [3]FEMTO-ST Institute, Besançon, France, [4]frec|n|sys SAS, Besançon, France, [5]Senseor, Besançon, France

4:15 PM - 4:30 PM
OXYGEN TRANSPORT DURING CRYSTALLIZATION OF OXIDE CRYSTAL FROM THE MELT
Satoshi Uda
Tohoku University, Sendai, Japan

4:30 PM - 4:45 PM
BULK SINGLE CRYSTALS AND PROPERTIES OF TRANSPARENT SEMICONDUCTING OXIDES: β-GA2O3, IN2O3, SNO2 AND MGGA2O4
Zbigniew Galazka, Reinhard Uecker, Klaus Irmscher, Detlef Klimm, Mike Pietsch, Martin Albrecht, Albert Kwasniewski, Martin Naumann, Robert Schewski, Matthias Bickermann
Leibniz Institute for Crystal Growth, Berlin, Germany

4:45 PM - 5:00 PM
CA3NBGA3SI2O14 PIEZOELECTRIC FIVER CRYSTAL FOR ELECTRICAL GENERATION FROM OSCILLATION GROWN BY MICRO-PULLING-DOWN MATHOD
Masanori Kitahara, [1] Yuui Yokota, [1] Yuji Ohashi, [1] Andrey Medvedev, [1] Syunsuke Kurosawa, [1] Kei Kamada, [1] Osamu Eguchi, [2] Akira Yoshikawa[1]
[1]Tohoku University, Miyagi Sendai, Japan, [2]Piezo Studio Corporation, Miyagi Sendai, Japan

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Thursday, August 6, 2015

3:30 PM - 5:00 PM

Industrial Crystal Growth Technologies and Equipment (ACCGE) 4

Location: Madison
Session Chair(s): Mike Dudley

3:30 PM - 4:00 PM
DEVELOPMENT OF NOVEL RADIATION DETECTION MATERIALS: FROM R&D TO PRODUCTION
Invited
Sudhir Trivedi, Henry Chen, Joo-Soo Kim
Brimrose Technology, Sparks, MD, USA

4:00 PM - 4:30 PM
HIGH-QUALITY LANGASITE-TYPE CRYSTALS FOR NEXT GENERATION SENSORS
Invited
Christine K. Rivenbark
Titusville, FL, USA

4:30 PM - 4:45 PM
GROWTH OF 3 INCH DIAMETER CE DOPED GD3GA3AL2O12 SINGLE CRYSTAL SCINTILLATOR
Kei Kamada,[1]Yasuhiro Shoji,[1]Vladimir V. Kochurikhin,[2]Aya Nagura,[1]Satoshi Okumura,[3]Seiichi Yamamoto,[3]Shunsuke Kurosawa,[1]Jan Pejchal,[4]Yuui Yokota,[1]Yuji Ohashi,[1]Akira Yoshikawa[1]
[1]Tohoku University, Sendai, Japan, [2]General Physics Institute, Woscow, Japan, [3]Nagoya University, Nagoya, Japan, [4]Institute of Physics AS CR, Praque, Czech Republic

4:45 PM - 5:00 PM
THERMOELECTRIC POWER GENERATION USING SILICIDES AND LEAD MAGNESIUM TELLURIDE
Patrick Taylor,[1]Sudhir Trivedi,[2]Susan Kutcher,[2]Wiltod Palosz,[2]Dajie Zhang,[2]Jogender Singh,[3]Narasimha Prasad[4]
[1]U.S. Army Research Laboratory, Adelphi, MD, USA, [2]Brimrose Technology, Sparks, MD, USA, [3]Pennsylvania State Univeristy, University Park, PA, USA, [4]NASA Langley Research Center, Hampton, VA, USA

Thursday, August 6, 2015

3:30 PM - 5:00 PM

Nanocrystals, Quantum Dots and Nanowires (Joint ACCGE/OMVPE) 1

Location: Gallatin
Session Chair(s): Hoe Tan

3:30 PM - 4:00 PM
A TUNABLE LIBRARY OF CHALCOGENOUREA PRECURSORS TO COLLOIDAL QUANTUM DOTS: KINETICS AND MECHANISM OF NUCLEATION AND GROWTH
Invited
Jonathan Owen
Columbia University, New York, NY, USA

4:00 PM - 4:20 PM
INFLUENCE OF CO SUBSTITUTION ON STRUCTURAL AND MAGNETIC PROPERTIES OF NANOCRYSTALLINE BARIUM STRONTIUM HEXAFERRITE
Ezhil Vizhi R,[1]Harikrishnan V,[1]Saravanan P,[2]Rajan Babu D[1]
[1]VIT University, Vellore, India, [2]DMRL, Hyderabad, India

4:20 PM - 4:40 PM
ELECTRON DIFFRACTION AND HIGH RESOLUTION TEM STUDY OF NOBLE METALS NANOCLUSTERS ON TIN DIOXIDE NANOLAYERS SURFACE
Alexander M. Samoylov,[1]Valentine M. Ievlev,[2]Sergey B. Kuschev,[1]Stanislav V. Ryabtsev[1]
[1]Voronezh State University, Voronezh, Russian Federation, [2]Moscow State University, Moscow, Russian Federation

4:40 PM - 5:00 PM
DESIGN OF INTERFACES IN CERAMIC/METALLIC MATERIALS FOR HIGH ENERGY ENVIRONMENTS
Hussein M. Zbib
Washington State University, Pullman, WA, USA

Thursday, August 6, 2015

3:30 PM - 5:00 PM

Biological, Biomimetic, and Organic Crystallization (ACCGE) 4

Location: Amphitheater
Session Chair(s): Stephan Wolf & Laurie Gower

3:30 PM - 4:00 PM
SILICA BIOMORPHS: MINERAL ROUTE TO BIOMIMETIC SELF- ASSEMBLED NANOSTRUCTURED MATERIALS
Invited
Juan M. Garcia-Ruiz
Consejo Superior de Investigaciones Cientificas, Armilla (Granada), Spain

4:00 PM - 4:15 PM
HIERARCHICAL ASSEMBLY OF MICROSCOPIC BIOMORPHS FROM CRYSTALLINE NANORODS
Elias Nakouzi, Ryan Rendina, Goutam Palui, Yara Ghoussoub, Pamela Knoll, Oliver Steinbock
Florida State University, Tallahassee, FL, USA

4:15 PM - 4:45 PM

BIOMIMETIC MINERALIZATION OF ELASTIN-LIKE RECOMBINAMERS: A BOTTOM-UP STRATEGY TOWARDS POLYMORPHIC NANOCOMPOSITES

Invited

YUPING LI,[1]Xi Chen,[1]Caixia Lan,[1]Jose Carlos Rodriguez-Cabello,[2]Conrado Aparicio[1]
[1]University of minnesota, Minneapolis, MN, USA, [2]University of Valladolid, Valladolid, Spain

4:45 PM - 5:00 PM

IDENTIFICATION OF ORGANIC NETWORKS WITHIN THE SKELETON OF REEF BUILDING CORALS: THE ROLE OF FUNGI IN THE ACCRETION OF ARAGONITE

Zhan Wei-Scullion,[1]Renee van de Locht,[1]Peter J. Young,[1]Henning Osholm,[2]Remi Blanc,[3]Roland Kroeger[1]
[1]University of York, York, United Kingdom, [2]University of Copenhagen, Copenhagen, Denmark, [3]FEI Visualization Sciences Group, Paris, France

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Friday, August 7, 2015

8:00 AM - 10:00 AM

Bulk Crystal Growth 5

Location: Jefferson
Session Chair(s): Aleksandar Ostrogorsky, Robert Feigelson

8:00 AM - 8:30 AM
DESIGN, GROWTH AND CHARACTERIZATION OF HIGH-TC AND HIGH-PERFORMANCE PIEZO-/FERROELECTIC SINGLE CRYSTALS
Invited
Zuo-Guang Ye,[1]Yujuan Xie,[1]Bixia Wang,[1]Hamel N. Tailor,[1]Hua Wu,[2]Alexei A. Bokov[1]
[1]Simon Fraser University, Burnaby, BC, Canada, [2]Donghua University, Shanghai, China

8:30 AM - 8:45 AM
GROWH AND PROPERTIES OF 4 INCH DIAMETER FERROELECTRIC SINGLE CRYSTAL PIN-PMN-PT NEAR MORPHOTROPIC PHASE BOUNDARY BY THE SEED INDUCED MODIFIED BRIDGMAN TECHNIQUE
Xian Wang, Di Lin, Jianwei Chen, Sheng Wang, Haiqing Xu, Xiaobing Li, Xiangyong Zhao, Haosu Luo
Shanghai Institute of Ceramics, Shanghai, China

8:45 AM - 9:00 AM
MINERALOGICALLY-INSPIRED CRYSTAL GROWTH: DEVELOPING NEW FUNCTIONAL MATERIALS
Colin D. McMillen, Liurukara D. Sanjeewa, Martin M. Kimani, Joseph W. Kolis
Clemson University, Clemson, SC, USA

9:00 AM - 9:15 AM
CRYSTAL GROWTH, CHARACTERIZATION AND PHYSICAL PROPERTIES OF PR2ZR2O7 PYROCHLORE OXIDE
Seyed Koohpayeh
Johns Hopkins University, Baltimore, MD, USA

9:15 AM - 9:30 AM
YB3+-DOPED LIBI(WO4)2 FIBERS SINGLE CRYSTALS GROWN BY MICRO-PULLING DOWN TECHNIQUE AND CHARACTERIZATIONS
Brahim Rekik
University Blida ,Blida, Algeria

Friday, August 7, 2015

8:00 AM - 10:00 AM

Industrial Crystal Growth Technologies and Equipment (ACCGE) 5

Location: Madison
Session Chair(s): Govindhan Dhanaraj

8:00 AM - 8:30 AM
RECENT PROGRESS IN HYDROTHERMAL GROWTH OF CRYSTALS
Invited
K. BYRAPPA,[1]K. NAMRATHA[2]
[1]Mangalore University, MANGALORE, India, [2]University of Mysore, India

8:30 AM - 8:45 AM
GROWTH AND PROPERTIES OF DOPED LANGASITE-TYPE LPE FILMS
Christine K. Rivenbark
Titusville, Florida, USA

8:45 AM - 9:00 AM
DIRECT DETERMINATION OF BURGERS VECTORS OF C AND NC+MA THREADING DISLOCATIONS IN 4H-SIC C-WAFERS GROWN BY PVT METHOD
Jianqiu Guo, Yu Yang, Fangzhen Wu, Huanhuan Wang, Balaji Raghothamachar, Michael Dudley
Stony Brook University, Stony Brook, NY, USA

9:00 AM - 9:15 AM
THE FORMATION OF DOUBLE SHOCKLEY STACKING FAULTS IN THE FACET REGION OF PVT-GROWN 4H-SIC WAFERS
Yu Yang, Yu Yang
Stony Brook University, Stony Brook, NY, USA

Friday, August 7, 2015

8:00 AM - 10:00 AM

Nanocrystals, Quantum Dots and Nanowires (Joint ACCGE/OMVPE) 2

Location: Gallatin
Session Chair(s): Jeffrey Urban

8:00 AM - 8:30 AM
HETEROGENEOUS INTEGRATION OF VERTICAL III-V NANOWIRES ON SI AND GE AND THEIR APPLICATIONS
Invited
Katsuhiro Tomioka, Junichi Motohisa, Takashi Fukui
Hokkaido University, Sapporo, Japan

8:30 AM - 8:50 AM
GAAS CORE-SHELL NANOWIRE TUNNEL DIODES GROWN BY ORGANOMETALLIC VAPOUR PHASE EPITAXY
Ali Darbandi, Simon Watkins
Simon Fraser University, Burnaby, BC, Canada

8:50 AM - 9:10 AM
MODELING THE BIRTH OF A NANOWIRE DURING VLS GROWTH: COMPUTATIONS AND THEORY OF THE DROPLET TO NANOWIRE TRANSITION
Moneesh Upmanyu, Alireza Shahabi
Northeastern University, Boston, MA, USA

9:10 AM - 9:30 AM
GROWTH PARAMETER DESIGN FOR HOMOGENEOUS MATERIAL COMPOSITION IN TERNARY GaInP NANOWIRES
Alexander Berg, Filip Lenrick, Neimantas Vainorius, L. Reine Wallenberg, Magnus T. Borgström
Lund University, Lund, Sweden

9:30 AM -9:50 AM
DOPANT CHARACTERIZATION FOR GAN NANOWIRES BY RAMAN SPECTROSCOPY
Kris Bertness, Lawrence Robins, Shannon Duff, Paul Blanchard, Matt Brubaker, Norman Sanford
NIST, Boulder, CO, USA

Friday, August 7, 2015

8:00 AM - 10:00 AM

Biological, Biomimetic, and Organic Crystallization (ACCGE) 5

Location: Amphitheater
Session Chair(s): Dens Gebauer & James Elliot

8:00 AM - 8:30 AM
BIOMINERALIZATION PROTEINS: CONTROLLING DIFFERENT ASPECTS OF MINERAL FORMATION.
Invited
John S. Evans
New York University, New York, NY, USA

8:30 AM - 9:00 AM
MOLECULAR MECHANISMS OF HEMATIN CRYSTALLIZATION AND INHIBITION BY ANTIMALARIALS
Invited
Peter G. Vekilov, Katy Olafson, Megan Ketchum, Jeffrey D. Rimer
University of Houston, Houston, TX, USA

9:00 AM - 9:30 AM
SELF-ASSEMBLY OF PEPTOID NANOFIBERS FOLLOWS A HIERARCHICAL PATHWAY TO THE ORDERED STATE
Invited
James De Yoreo, Xiang Ma, Chun-Long Chen, Michael Daily, Chris Mundy
Pacific Northwest National Laboratory, Richland, WA, USA

9:30 AM - 10:00 AM
CRYSTAL NETWORKS IN SPIDER AND SILKWORM SILKS: FROM HIERARCHICAL STRUCTURE TO ULTRA-PERFORMANCE
Invited
Liu Xiang Yang
Singapore

Friday, August 7, 2015

10:30 AM - 12:00 PM

Bulk Crystal Growth 6

Location: Jefferson
Session Chair(s): Aleksandar Ostrogorsky, Robert Feigelson

10:30 AM - 10:45 AM
CRYSTAL GROWTH AND CHARACTERIZATION OF MGSIP2: A WIDE BAND GAP SEMICONDUCTOR FOR NON-LINEAR OPTICS
Lakshmi Krishna, Eric S. Toberer, Reuben T. Collins, Adele C. Tamboli
Colorado School of Mines, Golden, CO, USA

10:45 AM - 11:15 AM
PRODUCTION AND APPLICATION OF NEW SOLUTION GROWN ORGANIC CRYSTALS
Invited
Natalia Zaitseva, Leslie Carman, Andrew Glenn, Andrew Mabe, Stephen Payne
Lawrence Livermore National Laboratory, Livermore, CA, USA

11:15 AM - 11:30 AM
SYNTHESIS GROWTH OPTICAL AND MECHANICAL STUDIES ON UREA OXALIC ACID FERROELECTRIC SINGLE CRYSTAL
Ezhil Vizhi R, Dhivya Immanuel, Rajan Babu D
VIT University, Vellore, India

11:30 AM - 11:45 AM
INVESTIGATIONS ON THE GROWTH ASPECTS AND PROPERTY STUDIES OF γ-GLYCINE SINGLE CRYSTAL IN THE PRESENCE OF SODIUM BROMIDE
Ezhil Vizhi R, Yogambal C
VIT University, Vellore, India

11:45 AM - 12:00 PM
A REPORT ON THE BULK SIZE CRYSTAL GROWTH OF MMTC BY A NOVEL AND SIMPLE SOLUTION GROWTH TECHNIQUE AND THEIR CHARACTERIZATION
K. RAJARAJAN,[1]V. RAMESH[2]
[1]Rajeswari Vedachalam Government Arts College, Chengalpet-603 001, Tamil Nadu, India, [2]SRM University (city campus), Chennai-600 026, India

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Friday, August 7, 2015

10:30 AM - 12:00 PM

Nanocrystals, Quantum Dots and Nanowires (Joint ACCGE/OMVPE) 3

Location: Gallatin
Session Chair(s): Katsuhiro Tomioka

10:30 AM - 10:50 AM
SELECTIVE-AREA GROWTH OF GAN NANOCOLUMNS ON SILICON (111) SUBSTRATES WITH SYSTEMATIC ANALYSIS OF DISLOCATION FILTERING EFFECT OF NANOCOLUMNS
Katsumi Kishino, Shunsuke Ishizawa
Sophia University, Tokyo, Japan

10:50 AM - 11:10 AM
INPAS/ALGAINP/GAAS QUANTUM DOT LASER STRUCTURES GROWN BY MOVPE
Andrey Krysa,[1]John Roberts,[1]Thomas Walther,[1]Ivan Karomi,[2]Samuel Shutts,[2]Peter Smowton[2]
[1]University of Sheffield, Sheffield, United Kingdom, [2]Cardiff University, Cardiff, United Kingdom

11:10 AM - 11:30 AM
STRESS-DIRECTED COMPOSITIONAL PATTERNING FOR RESPONSIVE SIGE SUBSTRATES
Talid Sinno,[1]Daniel Kaiser,[1]Swapnadip Ghosh,[2]Sang M. Han[2]
[1]University of Pennsylvania, Philadelphia, PA, USA, [2]University of New Mexico, Albuquerque, NM, USA

11:30 AM - 11:50 AM
EPITAXIAL QUANTUM DOTS ON NANOWIRES AND NANOPARTICLES: STABILITY AND GROWTH
Moneesh Upmanyu
Northeastern University, Boston, MA, USA

Friday, August 7, 2015

10:30 AM - 12:00 PM

Biological, Biomimetic, and Organic Crystallization (ACCGE) 6

Location: Amphitheater
Session Chair(s): Yuping Li & Roland Kroger

10:30 AM - 11:00 AM
SOLUTION-BASED BIO-INSPIRED GROWTH OF PHOTOCATALYTICALLY ACTIVE NANOPOROUS MEMBRANES AND ORIENTED NANOWIRES FOR WATER PURIFICATION AND SPLITTING
Invited
David Kisailus
University of California, Riverside, CA, USA

11:00 AM - 11:30 AM
ON TWEAKING THE MINERAL ORGANIC INTERFACE:STRATEGIES ON CONSTRUCTING BULK CRYSTALLINE MATERIALS FROM THE NANOSCALE AND BELOW
Invited
Jong Seto
UCSF, San Francisco, CA, USA

11:30 AM - 11:45 AM

CONTROL OF SUBGRAIN FORMATION IN PROTEIN CRYSTALS BY THE APPLICATION OF AN EXTERNAL ELECTRIC FIELD

Haruhiko Koizumi,[1]Satoshi Uda,[1]Kozo Fujiwara,[1]Masaru Tachibana,[2]Kenichi Kojima,[2]Jun Nozawa[1]
[1]Tohoku University, Sendai, Japan, [2]Yokohama Soei University, Yokohama, Japan