iit
2022
PROGRAM & EXHIBIT GUIDE
International Conference on Ion Implantation Technology 2022
September 25–29, 2022 I San Diego, California I The US Grant

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23rd International Conference on Ion Implantation Technology

September 25–29, 2022 | San Diego, California | The US Grant

WELCOME TO THE CONFERENCE!

It is with great pleasure that we welcome you to the International Conference on Ion Implantation Technology 2022 (IIT 2022) in San Diego, California. This Conference offers an excellent opportunity for engineers and researchers in industry, research institutes, and universities to present new results and to discuss ideas of new applications of ion implantation and annealing. Next, we have outlined highlights we believe will be of interest to you.

The 23rd IIT Program

Features more than 90 oral/poster presentations and 17 technical sessions focused on **Advanced Implant/Doping and Annealing Equipment; Annealing Technologies and Processes; Device Applications for Implant/Doping and Annealing Processes; Implant/Doping Technologies and Processes; Metrologies for Implant/Doping and Annealing Processes; Modeling and Simulation of Implant/Doping and Annealing Processes.** IIT will offer a strong program of plenary, invited and contributed talks and two poster sessions.

Welcome Reception

Conference attendees are invited to the Welcome Reception on Sunday evening from 6:00 pm – 7:30 pm in Palm Court on the Lobby Level. This is a great time to enjoy light snacks and refreshments, meet with old colleagues, make new connections, and share information, before starting 4 days of technical sessions.

Plenary Sessions

Don't miss the three Plenary Sessions held Monday and Tuesday. Fred Roozeboom, University of Twente, starts off on Monday morning with his talk on Technical Developments of Thermal Annealing in the Past Sixty Years, and Future Perspectives. Directly following Fred's talk, Tony Renau, Varian Semiconductor Equipment (retired), will discuss 35 Years of Challenge and Innovation in Ion Implant. On Tuesday, Hitoshi Wakabayashi, Tokyo Institute of Technology, will deliver his talk on Integration Technologies for *pn*-Stacked TMDC CMOS Devices.

Poster Sessions/Receptions

Poster authors will be available for in-depth discussion on Tuesday (4:30 pm – 5:30 pm) and Thursday (10:10 am – 11:30 am) in the Presidential Salon A&B and Foyer, Second Floor. These popular sessions are open to all Conference attendees and include light snacks and refreshments.

Exhibit

Be sure to visit the IIT exhibitors Monday – Thursday in the Presidential Salon A&B, Second Level of the US Grant. The Exhibit offers the most direct access to researchers from around the world who are seeking technical solutions to their challenges. See page 14 for exhibit hours.

Conference Dinner Banquet

Don't miss this year's Conference Dinner Banquet, Wednesday evening from 7:30 pm – 10:00 pm in the Bivouac Ballroom located on the Historic Lower Level of the US Grant. Full Conference registration includes one Dinner admission. You can purchase additional Dinner tickets at the IIT Registration Desk for $155 USD, subject to availability.

Conference Excursions

San Diego, California, is often referred to as "America's Finest City" and for good reason! Known for its beautiful weather, pristine beaches, friendly people, and plethora of entertainment, San Diego is a favorite travel destination for visitors across the globe. Conference attendees and companions are encouraged to attend the Conference Excursion on Wednesday, September 28. **FULL CONFERENCE registration fee includes ONE excursion admission.** Companion tickets may be purchased on-site, subject to availability. See page 10 for more information.

Conference Co-Chair

Susan Felch, Susan Felch Consulting

Technical Program Co-Chairs

Susan Felch, Susan Felch Consulting
Larry Larson, Texas State University

Sponsorships Chair

Aaron Vanderpool, Intel Corporation

Annealing Program Chair

Wilfried Lerch, SkyLark Solutions

Proceedings Chair

Larry Larson, Texas State University

Table of Contents

IIT Committee....2
Plenary and Invited Speakers....3
US Grant Floorplan....4
Daily Schedule of Events....6
Program At-A-Glance....8
Poster Sessions....12
Exhibit....14
Presentations....17
Index....118

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COMMITTEES

Conference Chair
We commemorate Mitch Taylor, who left us before the conference could take place.

Conference Co-Chair
Susan Felch, Susan Felch Consulting

Technical Program Co-Chairs
Susan Felch, Susan Felch Consulting
Larry Larson, Texas State University

Sponsorships Chair
Aaron Vanderpool, Intel Corporation

Annealing Program Chair
Wilfried Lerch, SkyLark Solutions

Proceedings Chair
Larry Larson, Texas State University

Technical Program Committee

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Shaoyin Chen, Ultratech/Veeco
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Volker Häublein, Fraunhofer IISB
Kevin Jones, University of Florida
Fareen Khaja, Veeco
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Wilfried Lerch, SkyLark Solutions
Jiro Matsuo, Kyoto University
Victor Moroz, Synopsys
Juergen Niess, HQ-Dielectrics GmbH
Deven Raj, Applied Materials, Inc.
Leonard Rubin, Axcelis Technologies
Werner Schustereder, Infineon Technologies

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Andrew Wittkower, (retired) USA
Isao Yamada, Kyoto University (emeritus), Japan
James Ziegler, U.S. Naval Academy (retired), USA

SPEAKERS

Plenary Speakers

Tony Renau
Varian Semiconductor Equipment (retired)

35 Years of Challenge and Innovation in Ion Implant

Fred Roozeboom
University of Twente

Technical Developments of Thermal Annealing in the Past Sixty Years, and Future Perspectives

Hitoshi Wakabayashi
Tokyo Institute of Technology

Integration Technologies for pn-Stacked TMDC CMOS Devices

Invited Speakers

Temel Buyuklimanli
Eurofins EAG Laboratories

Metrologies to Study Ion Implanted Semiconductor Materials

Fuccio Cristiano
Laboratory for Analysis and Architecture of Systems

Defects and Dopant Activation in Laser Annealed Group IV Semiconductors

Oleg Gluschenkov
IBM Research/Albany Nanotech

Laser Annealing Applications for Advanced FinFETs and Beyond

Lubek Jastrzebski
Semilab

Review of Applications of Defect Photoluminescence Imaging (DPLI) to Monitoring Crystallographic Defects During IC Processing

Jacob Jensen
Intel Corporation

Millisecond and Sub-Millisecond Annealing

Tsunenobu Kimoto
Kyoto University

Ion Implantation Technology in SiC for Advanced Electron Devices

Didier Landru
Soitec

Smart Cut, FD-SOI and Integration Challenges

L. Rebohle
Helmholtz Innovation Blitzlab/Institute for Ion Beam Physics and Materials Research

Flash Lamp Annealing of Semiconductor Materials

Kyoichi Suguro
SUGSOL Corporation

Where is the Annealing Technology Going for Better Device Performance?

Toshiyuki Tabata
Laser Systems & Solutions of Europe

NS-Pulsed Melt Laser Annealing for Advanced CMOS Contacts

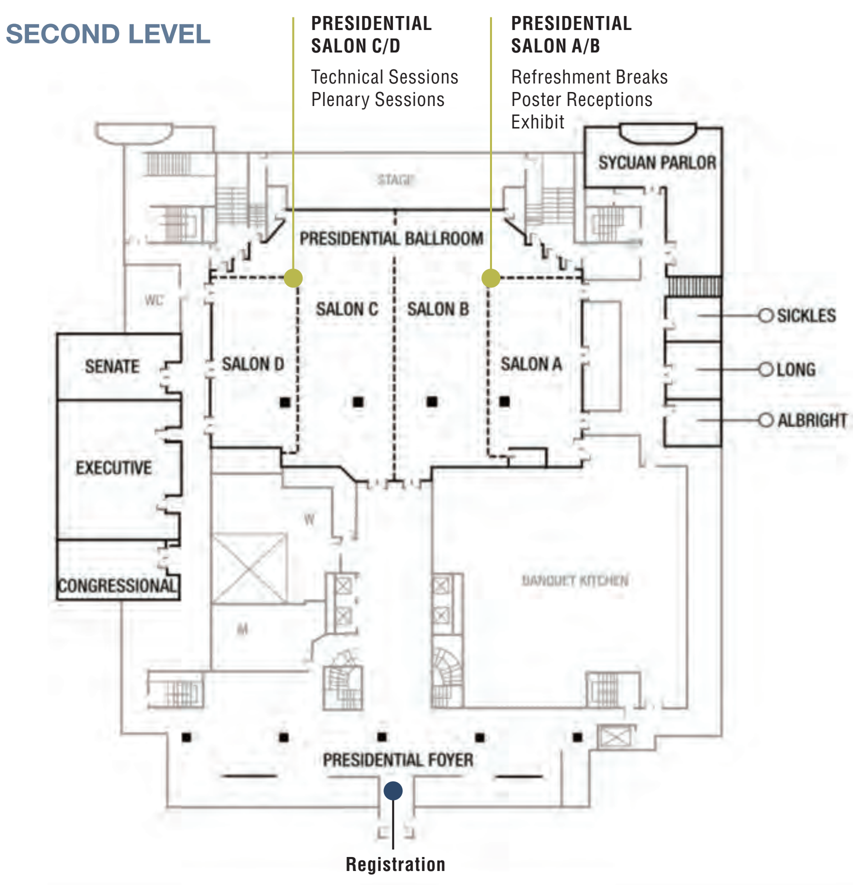
Hao Yu
imec

Metal/Semiconductor Contact Investigations for Applications in Advanced CMOS Technology

CONFERENCE VENUE

The US Grant

SECOND LEVEL



LOBBY LEVEL

BROADWAY
RENDEZVOUS
BANCO SANTANDER
OFFICES
4TH AVENUE
PALM COURT
LOBBY
BANQUET KITCHEN
GRANT GRILL
VALET ENTRANCE
Welcome Reception

HISTORIC LOWER LEVEL

FITNESS CENTER
CHAFFEE COURT
GRANT D
GRANT C
GRANT B
GRANT A
GRANT HALL
GRANT FOYER
STAGE
CHAIRMAN'S COURT
CRYSTAL BALLROOM
CRYSTAL FOYER
BIVOUAC BALLROOM
VINTAGE BOARDROOM
BIVOUAC FOYER

Lunches
(Monday, Tuesday, Thursday)

Conference Dinner Banquet
(Wednesday)

WE COMMEMORATE MITCH TAYLOR, WHO LEFT US BEFORE THE CONFERENCE COULD TAKE PLACE.

1960-2020

Mitchell C. Taylor

The ion implantation community lost a key member when Mitchell Curtis Taylor passed away on November 27, 2020 from a heart attack. He was only 60 years old and still had many plans to contribute to his scientific field, including chairing the 23rd International Conference on Ion Implantation Technology (now IIT 2022), which unfortunately was not able to take place during his lifetime due to the COVID-19 pandemic.

Mitch was born on June 5, 1960 in Fallon, Nevada. He attended a one-room schoolhouse in southeast Oregon for several years and then returned to Fallon, where he was a star athlete in high school. He played football, wrestled, and ran track, leading his football team to the state championships and setting a state record for hurdles. He then attended Willamette University in Salem, Oregon, where he played football, wrestled and earned his Bachelor of Science degree in chemistry.

Mitch began his career in ion implantation when he joined Intel in 1984 as a process, equipment and operations engineer. He became the Ion Implant Group Leader in 1986 and served in that role until 2005. During that time, he led the development of all implant processes for two decades of Intel device generations, adopted advanced annealing technology into the Intel process flow, and was responsible for the selection of new ion implanters and operation of all implanters in the Hillsboro, Oregon fab. After Intel, Mitch joined Applied Materials, where he served as Vice President & General Manager of the Implant Division for two years and then as Senior Director of Solar Factory Projects for another two years. He spent his final decade as an independent consultant with companies in the semiconductor and solar process, equipment, and metrology areas.

Mitch's friends and colleagues knew him as an incredibly caring person who always put others before himself. Throughout his career, he mentored dozens of co-workers, from fellow engineers in Hillsboro and other Intel fabs to his supporting technicians and colleagues at collaborating equipment companies. Mitch was also extremely passionate about coaching his children in football, baseball, softball, and soccer. In addition, he actively served on numerous community leadership boards, including the International Committee of the Ion Implantation Technology conference series, the Multnomah/Washington County CASA (Court Appointed Special Advocates), and the Willamette University Technical Advisory Board.

DAILY SCHEDULE OF EVENTS

SUNDAY

EVENT	TIMES	LOCATION
Registration	5:00 pm – 8:00 pm	Presidential Foyer, Second Level
Welcome Reception	6:00 pm – 7:30 pm	Palm Court, Lobby Level

MONDAY

EVENT	TIMES	LOCATION
Registration	8:00 am – 6:00 pm	Presidential Foyer, Second Level
MO1: Opening Session	9:00 am – 9:30 am	Presidential Ballroom, Second Level, Salons C&D
MO2: Implant Systems	9:30 am – 10:30 am	Presidential Ballroom, Second Level, Salons C&D
Exhibit	10:00 am – 5:00 pm	Presidential Ballroom, Second Level, Salons A&B
Break	10:30 am – 11:00 am	Presidential Ballroom, Second Level, Salons A&B
MO3: Plenary Session I	11:00 am – 12:20 pm	Presidential Ballroom, Second Level, Salons C&D
Lunch	12:20 pm – 2:00 pm	Bivouac Ballroom, Historic Lower Level
MO4: Novel Doping Processes and Techniques	2:00 pm – 3:50 pm	Presidential Ballroom, Second Level, Salons C&D
Break	3:50 pm – 4:20 pm	Presidential Ballroom, Second Level, Salons A&B
MO5: Novel Annealing Processes and Techniques	4:20 pm – 5:50 pm	Presidential Ballroom, Second Level, Salons C&D

TUESDAY

EVENT	TIMES	LOCATION
Registration	8:00 am – 6:00 pm	Presidential Foyer, Second Level
TU1: Doping Applications	9:00 am – 10:40 am	Presidential Ballroom, Second Level, Salons C&D
Exhibit	10:00 am – 5:30 pm	Presidential Ballroom, Second Level, Salons A&B
Break	10:40 am – 11:10 am	Presidential Ballroom, Second Level, Salons A&B
TU2: Advanced Implant/Doping and Annealing Equipment	11:10 am – 12:50 pm	Presidential Ballroom, Second Level, Salons C&D
Lunch	12:50 pm – 2:00 pm	Bivouac Ballroom, Historic Lower Level
TU3: Annealing Technologies and Processes I	2:00 pm – 3:50 pm	Presidential Ballroom, Second Level, Salons C&D
TU4: Plenary Session II	3:50 pm – 4:30 pm	Presidential Ballroom, Second Level, Salons C&D
PS1: Poster Session I	4:30 pm – 5:30 pm	Presidential Ballroom, Second Level, Salon A&B & Foyer

Join us for the

CONFERENCE BANQUET

Wednesday, 7:30 pm – 10:00 pm
Bivouac Ballroom

Don't miss this year's Conference Dinner Banquet, Wednesday evening in the Bivouac Ballroom located on the Historic Lower Level of the US Grant. Full Conference registration includes one Dinner admission. You can purchase additional Dinner tickets at the IIT Registration Desk for $155 USD, subject to availability.

DAILY SCHEDULE OF EVENTS

WEDNESDAY

EVENT	TIMES	LOCATION
Registration	8:00 am – 2:00 pm	Presidential Foyer, Second Level
WE1: Advanced Metrologies for Implant/Doping and Annealing Processes I	9:00 am – 10:10 am	Presidential Ballroom, Second Level, Salons C&D
Exhibit	10:00 am – 1:00 pm	Presidential Ballroom, Second Level, Salons A&B
Break	10:10 am – 10:40 am	Presidential Ballroom, Second Level, Salons A&B
WE2: Advanced Technologies and Processes	10:40 am – 12:10 pm	Presidential Ballroom, Second Level, Salons C&D
Lunch	12:10 pm – 2:00 pm	Bivouac Ballroom, Historic Lower Level
Conference Excursions	2:00 pm – 6:00 pm	Off-Site
Conference Dinner Banquet	7:30 pm – 10:00 pm	Bivouac Ballroom, Historic Lower Level

THURSDAY

EVENT	TIMES	LOCATION
Registration	8:00 am – 5:30 pm	Presidential Foyer, Second Level
TH1: Annealing Technologies and Processes II	9:00 am – 10:10 am	Presidential Ballroom, Second Level, Salons C&D
Exhibit	10:00 am – 12:00 pm	Presidential Ballroom, Second Level, Salons A&B
PS2: Poster Session II	10:10 am – 11:30 am	Presidential Ballroom, Second Level, Salon A&B & Foyer
TH2: Advanced Metrologies for Implant/Doping and Annealing Processes II	11:30 am – 12:40 pm	Presidential Ballroom, Second Level, Salons C&D
Lunch	12:40 pm – 2:00 pm	Bivouac Ballroom, Historic Lower Level
TH3: Implant/Doping Technologies and Processes	2:00 pm – 3:10 pm	Presidential Ballroom, Second Level, Salons C&D
Break	3:10 pm – 3:40 pm	Presidential Ballroom, Second Level, Salons A&B
TH4: Advanced Materials Processing & Closing Remarks	3:40 pm – 5:25 pm	Presidential Ballroom, Second Level, Salons C&D

PROGRAM AT-A-GLANCE

MONDAY

MO1: Opening Session			Presidential Ballroom, Second Level, Salons C&D
9:00 am	Susan Felch	MO1.01	Welcome and Overview
9:15 am	Kevin Jones	MO1.02	In Memoriam
MO2: Implant Systems			**Presidential Ballroom, Second Level, Salons C&D**
9:30 am	Hiroaki Kai	MO2.01	Development of Ultra-High-Current Implanter for Material Modification Process in Next Era Devices
9:50 am	Michael Current	MO2.02	Particle Counts and Size Distributions after Implantation with On-Wafer Graphite Sources
10:10 am	Wei Fan	MO2.03	High Temperature Electrostatic Chuck Enabled by BN Dielectrics
10:30 am			BREAK
MO3: Plenary Session I			**Presidential Ballroom, Second Level, Salons C&D**
11:00 am	Fred Roozeboom	**MO3.01	Technical Developments of Thermal Annealing in the Past Sixty Years, and Future Perspectives
11:40 am	Tony Renau	**MO3.02	35 Years of Challenge and Innovation in Ion Implant
MO4: Novel Doping Processes and Techniques			**Presidential Ballroom, Second Level, Salons C&D**
2:00 pm	Didier Landru	*MO4.01	Smart Cut, FD-SOI and Integration Challenges
2:30 pm	Jonathan England	MO4.02	Experiments and Modelling to Understand Implanted Layer Exchange Production of Isotopically Pure Si and Ge Layers for Quantum Computers
2:50 pm	Lydia Kuebler	MO4.03	TEM Investigation of Extended Defects in Aluminum Implanted 4H-SiC Substrates
3:10 pm	Leonhard Sturm-Rogon	MO4.04	Comparison of Annealing Quality after 3e15/cm2 50keV BF2+ Implant Between Rapid Thermal Annealing and Furnace Annealing
3:30 pm	Weng Siong Chan	MO4.05	The Examination of Source Life and Beam Parameters of Germanium Implantation Using Hydrogen Carrier Gas
3:50 pm			BREAK
MO5: Novel Annealing Processes and Techniques			**Presidential Ballroom, Second Level, Salons C&D**
4:20 pm	Kyoichi Suguro	*MO5.01	Where is the Annealing Technology Going for Better Device Performance?
4:50 pm	Elena Nieto Hernández	MO5.02	Photoluminescence Characterization of He-Implanted SiC Upon Nanosecond Laser Thermal Annealing
5:10 pm	Silke Hamm	MO5.03	Thermal Budget Reduction for Spike Anneals in a Conventional RTP Tool
5:30 pm	Seunghun Baik	MO5.04	Nanosecond Pulsed Laser Activation of Phosphorus in Germanium

TUESDAY

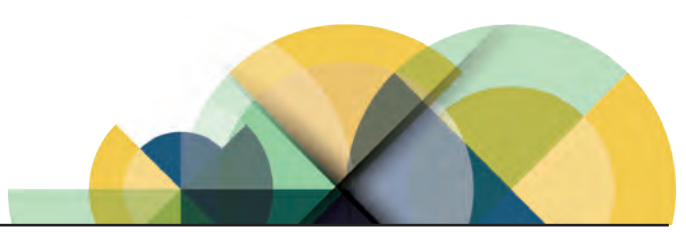
TU1: Doping Applications			Presidential Ballroom, Second Level, Salons C&D
9:00 am	Oleg Gluschenkov	*TU1.01	Laser Annealing Applications for Advanced FinFETs and Beyond
9:30 am	Hao Yu	TU1.02	Ion Implantation Isolation for GaN HEMT: Mechanism and Parasitic Effects
9:50 am	Pierre-Louis Julliard	TU1.03	Characterization of Structural Defects Induced by Heated Implantations and Annealing Process
10:10 am	Tsunenobu Kimoto	*TU1.04	Ion Implantation Technology in SiC for Advanced Electron Devices
10:40 am			BREAK
TU2: Advanced Implant/Doping and Annealing Equipment			**Presidential Ballroom, Second Level, Salons C&D**
11:10 am	James S DeLuca	TU2.01	Advanced Angle Control Requirements and Solutions for Enabling High Aspect Ratio Device Structures
11:30 am	Hiroyuki Kariya	TU2.02	Precise Angle Control for Channeling in SS-UHE, Single Wafer Ultra-High Energy Ion Implanter
11:50 am	Vikram M Bhosle	TU2.03	PMOS Rc Reduction Using B2H6 Plasma Doping Process for Current and Next Gen DRAM Devices
12:10 pm	Sarko Cherekdjian	TU2.04	New ECR Ion Implanter with Advanced Temperature Control
12:30 pm	Atul Gupta	TU2.05	Introducing the Purion H200™, Single Wafer High Current Implanter Designed to Address Unique High Dose Implant Applications
TU3: Annealing Technologies and Processes I			**Presidential Ballroom, Second Level, Salons C&D**
2:00 pm	L. Rebohle	*TU3.01	Flash Lamp Annealing of Semiconductor Materials
2:30 pm	Minh Anh Luong	TU3.02	Influence of N Doping on the Crystallization Kinetics of Phase Change Materials ($Ge_2Sb_2Te_5$)
2:50 pm	Kevin Jones	TU3.03	Time Resolved Reflectometry with Pulsed Laser Melting of Implant Amorphized $Si_{1-x}Ge_x$ Thin Films
3:10 pm	Angela Alvarez Alonso	TU3.04	Optimization of Solid Phase Epitaxial Regrowth Assisted by UV Nanosecond Pulsed Laser
3:30 pm	Anna Johnsson	TU3.05	Continuum Simulations of the Evolution of Faulted and Perfect Dislocation Loops in Silicon During Post-Implantation Annealing
TU4: Plenary Session II			**Presidential Ballroom, Second Level, Salons C&D**
3:50 pm	Hitoshi Wakabayashi	**TU4.01	Integration Technologies for pn-Stacked TMDC CMOS Devices

** Plenary * Invited

WEDNESDAY

WE1: Advanced Metrologies for Implant/Doping and Annealing Processes I			Presidential Ballroom, Second Level, Salons C&D
9:00 am	Temel Buyuklimanli	*WE1.01	Metrologies to Study Ion Implanted Semiconductor Materials
9:30 am	Zsolt Zolnai	WE1.02	Lateral Mapping of Damage Patterns in Plasma Immersion Ion Implanted Silicon
9:50 am	Abhijeet Joshi	WE1.04	Measuring Sub-nm Activation Profiles in Very Highly Doped Semiconductors
10:10 am			BREAK
WE2: Advanced Technologies and Processes			**Presidential Ballroom, Second Level, Salons C&D**
10:40 am	Toshiyuki Tabata	*WE2.01	NS-Pulsed Melt Laser Annealing for Advanced CMOS Contacts
11:10 am	Ryota Wada	WE2.02	The Detail Analysis of Behavior of Heavy Metals In 4H-SiC
11:30 am	Jongjin Hwang	WE2.03	Comparative Evaluation of Indirectly Heated Cathode DC Ion Source and Inductively Coupled Plasma RF Ion Source at High Current Ion Implanter
11:50 pm	Jeremy Andre Turcaud	WE2.04	Risk of Neutron Generation with Implantation of Light Ions

** Plenary * Invited



PROGRAM AT-A-GLANCE

THURSDAY

TH1: Annealing Technologies and Processes II			**Presidential Ballroom, Second Level, Salons C&D**
9:00 am	Jacob Jensen	*TH1.01	Millisecond and Sub-Millisecond Annealing
9:30 am	Frank Torregrosa	TH1.02	Ion Implantation and Activation of Aluminum in Bulk 3C-SiC and 3C-SiC on Si
9:50 am	Daryush Ila	TH1.03	Fabrication of Nano- to Micro-Scale Optical Structures in Silica
TH2: Advanced Metrologies for Implant/Doping and Annealing Processes II			**Presidential Ballroom, Second Level, Salons C&D**
11:30 am	Lubek Jastrzebski	*TH2.01	Review of Applications of Defect Photoluminescence Imaging (DPLI) to Monitoring Crystallographic Defects During IC Processing
12:00 pm	Sasha Kurkcuoglu	TH2.02	Advanced Process Control Method for Inline Isolation Implant Monitoring in III-V GaAs Semiconductor Fabrication
12:20 pm	Andrzej Wieslaw Turos	TH2.03	Defect Microstructure in Ion Implanted GaN
TH3: Implant/Doping Technologies and Processes			**Presidential Ballroom, Second Level, Salons C&D**
2:00 pm	Sébastien Kerdiles	*TH3.01	More Than Moore Applications of Nanosecond Laser Annealing
2:30 pm	James S DeLuca	TH3.02	Silicon Damage from Timescale Modulation for Dose Accumulation in Single Implant and Damage Interactions Between Multiple Implants
2:50 pm	Tae Hoon Huh	TH3.03	Defects and Dopants Behavior of Medium Dose Range Implant into Heated Silicon Wafers
3:10 pm			BREAK
TH4: Advanced Materials Processing & Closing Remarks			**Presidential Ballroom, Second Level, Salons C&D**
3:40 pm	Hao Yu	*TH4.01	Metal/Semiconductor Contact Investigations for Applications in Advanced CMOS Technology
4:10 pm	John O Borland	TH4.02	Strain Characterization of Si+Ge, SiGe+Ge, SiGe+C, Ge+C, Ge+Sn & Si+Ge+Sn Thin Layers Formed By Implantation With RTA or Laser Melt Annealing Using SIMS, XPS, EDX-TEM, Raman and XRD Analysis
4:30 pm	Laurent Lachal	TH4.03	Nitride Stress Inversion Using Plasma Immersion Ion Implantation
4:50 pm	Michael Ewald Rueb	TH4.04	Key Physical Features and Applications of High Energy Ion Implantation Using the Energy-Filter Technology
5:10 pm	Susan Felch		Closing Remarks

*** Invited**

On **Wednesday,** conference attendees and companions are invited to participate in one of three excursions. Full conference registration fee includes **ONE** excursion admission.

Elegance Under Sail: Adventuress Catamaran Cruise

With such a unique view of the city, there should be no rush when taking it all in. Enjoy peaceful time on the water and relax onboard the Adventuress, a gorgeous 60-foot sailing catamaran.

Cruising around the San Diego harbor, guests will see sea lions, exotic birds and a variety of marine life. Catamarans are extremely stable with dual Hulls — offering speed, comfort and fun. Guests won't even know they are on the water.

Whether they choose to walk around the boat and mingle or find a peaceful, quiet corner and watch San Diego's shoreline and other sites, we will make sure they don't miss any of the beauty and history that San Diego Bay has to offer.

*Soda and waters are included.
**Duration is 3 hours, 2 hours sailing

WAIVER: Guests will be required to sign a liability waiver.

Explore the Island: Coronado Bike Tour

Coronado Island is truly the crown of San Diego, and there's no better way to explore it than with a guided bike tour. As guests and guide meander the beach, bike paths and back roads, they will learn the storied history of Coronado, see the famed landmarks and experience the culture that is unique to this quaint island.

The excursion will start from the ferry landing, across from the city of San Diego, then guests will ride through the neighborhoods of cottages, under the Coronado Bridge and to the Hotel Del Coronado. They will also stop at the Navy SEAL training center! As they continue to cruise along the beach, they'll have time to take in the stunning views of the downtown skyline, PETCO Park, and San Diego Bay.

This 10-mile bike friendly Coronado terrain is so flat your pedals will nearly rotate themselves!

*Duration is 3.5 hours.

Brew It and They Will Come: Urban Brewery Tour & Tasting

This intimate tour will take you to the cutting edge of San Diego's vibrant craft beer culture. Personally guided, you will visit three award winning breweries for a close look at the actual beer process.

This excursion visits three breweries in Downtown San Diego. Guests will receive a tasting flight at each location.

Along the way you'll see firsthand why San Diego has become the craft beer capital of America.

*Duration is 3.5 hours.

Subject to availability and limited due to capacity.

SPECIAL THANKS!

IIT 2022 has been funded, in part, by the generous contributions of these organizations.

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PS1: POSTER SESSION I

Tuesday, 4:30 pm - 5:30 pm
Presidential Ballroom, Second Level, Salon A&B & Foyer

Poster Set-up
Monday, 10:30 am–4:30 pm

Poster Tear Down
Tuesday, 6:00 pm

Presenter	Paper #	Title
		IMPLANT/DOPING TECHNOLOGIES AND PROCESSES
Ying Tang	PS1.01	The Performance of the Fourth Generation of Safe Delivery Source® (SDS®4) Package on AIBT iPulsar High Current Implanter
Ying Tang	PS1.02	Investigation of Various Source Materials and Co-Gases for Fluorine Ion Implantation Performance Improvement
Ying Tang	PS1.03	Germanium Ion Implantation Performance Improvement on Applied Materials' VIISta HCS High Current Implanter with Use of Germanium Tetrafluoride (GeF_4) and Hydrogen (H_2) Mixture Gases
Ying Tang	PS1.04	Performance Improvement on SMIT SHX-III High Current Ion Implanter through the use of EnrichedPlus ^{72}Germanium Tetrafluoride (enPLUS $^{72}GeF_4$) and Hydrogen (H_2) Mixture Gases
Ying Tang	PS1.05	Investigation of Source Materials, Co-gases, and Methods for Aluminum Ion Implantation
Weihang Guan	PS1.06	Performance and Reliability of the Fourth Generation of Safe Delivery Source® (SDS®4) in the Ion Implantation Application
Ji-Hyuk Choi	PS1.07	Charge Transport in Doped and Strongly Coupled Nanocrystal Films
Barry Chambers	PS1.08	Results and Adoption of Safe Delivery Source® (SDS®4) on VIISta® HCP
Jose Arno	PS1.09	How Safe Is a Safe Dopant Gas Delivery System?
Jose Arno	PS1.10	Dopant Gas Purity and Adsorbent Stability
Takuya Sakaguchi	PS1.11	Temperature Effect in High Dose, Medium Energy Implantation with Single-Wafer-Type Implanter
Daryush Ila	PS1.12	Ionization Induced Carbon Phase Changes in Graphite
Hiroki Murooka	PS1.13	Enhancement of Al^+ Beam Current in GSD III-180
Tae Hoon Huh	PS1.14	A Study of Beam Divergence Effects for Medium Dose Channeling Implants
Michael Current	PS1.15	Ion Erosion and Particle Release in Fine Graphite
Michael Current	PS1.16	Profiles and Defects in Highly-channeled and Random Beam Orientation MeV Dopant Implants in Si(100)
Michael Current	PS1.17	PL and SRP Studies of Phos Implants
Walter Wriggins	PS1.18	Ion Erosion and Elemental Purity of Deposited Films on Al
Yoji Kawasaki	PS1.19	Individual Dopant Profiles in High Energy Multiple Implantation Under Channeling Conditions
Shinya Takemura	PS1.20	Beam Shape Control System by Machine-Learning on the NISSIN BeyEX Medium Current Ion Implanter
Baonian Guo	PS1.21	Scaled FinFET Well Formation Using Heated Implantation
Serguei Kondratenko	PS1.22	Analysis of Dopant Distribution Profiles of Very High Energy Implants
Wilhelm P Platow	PS1.23	Neutron Radiation due to High Energy Boron Ion Beams
Greta Andrini	PS1.24	Assessment of a 2MeV Li+ Ion Beam Resolution by means of the Ion Beam Induced Charge Technique

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PS2: POSTER SESSION II

Thursday, 10:10 am - 11:30 am
Presidential Ballroom, Second Level, Salon A&B & Foyer

Poster Set-up
Wednesday, 10:30 am–12:30 pm

Poster Tear Down
Thursday, 11:30 am–3:30 pm

Presenter	Paper #	Title
ADVANCED IMPACT/DOPING AND ANNEALING EQUIPMENT		
Yusuke Kuwata	PS2.01	IMPHEAT-II, A Novel High Temperature Ion Implanter for SiC Power Devices
Jakub Rybczynski	PS2.02	Electrostatic Ion Implant Chuck with Fast Declamp Response Through Charge Control
Yuya Hirai	PS2.03	New Control System of the Multiple Filaments in the Large Ion Source for Ion Doping System iG6 Ver.2
Suguru Itoi	PS2.04	A Newly Developed ECR Ion Source with Wide Dynamic Range of Beam Current
Wilhelm P Platow	PS2.05	Linac Simulation with Dataset Generator
Pratim Palit	PS2.06	Improvements Enabled in SiC Power Devices by Advancements in Ion Implantation Hardware
Bo Vanderberg	PS2.07	Ion Implanter Beam Optics Design Using Global Optimization Techniques
Shu Satoh	PS2.08	Purion XEmax, Axcelis Ultra High Energy Implanter with Boost Technology
Frank Torregrosa	PS2.09	Unique Features of FLEXion Tool for Wide Band Gap and III-V Semiconductor Devices Fabrication
ADVANCED METROLOGIES FOR IMPLANT/DOPING AND ANNEALING PROCESSES		
Anne-Sophie Robbes	PS2.10	Compositional Measurement of Confined SiGe Devices with Self Focusing SIMS
Hiroyuki Kariya	PS2.11	Detection of Particles in the Ion Beam
Robert T Fryer	PS2.12	Reduction of Wafer Charging Effects with Advanced Electrostatic Chuck Technologies
Haruka Sasaki	PS2.13	Sheet-Resistance Measurement for Ultra-High Energy Ion Implantation
Ende Lutz	PS2.14	Low Temperature Monitoring with Implantation and Silicidation
Sonjoy Dey	PS2.15	Physical, Electrical and Electrochemical Characterization of 2D Materials (Graphite, GNP and GO)
MODELING AND SIMULATION OF IMPLANT/DOPING AND ANNEALING PROCESSES		
Jeremy Andre Turcaud	PS2.16	Ion Implantation Simulation and Optimization in Semiconductor Compounds
DEVICE APPLICATIONS FOR IMPLANT/DOPING AND ANNEALING PROCESSES		
Florian Horst Schaper	PS2.17	Optimization of Doped Lanthanated Tungsten Components in Ion Sources by Determining the Temperature Profile for Halogen Processes
Baonian Guo	PS2.18	Cryogenic Implantation to Boost PFET Performance and Improve Variability in 3D NAND Flows
Michael Current	PS2.19	Angle-Directed Ion Beams for Localized Deposition on High Aspect Ration Structures

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Presidential Salon A&B, Second Floor of the US Grant

EXHIBIT HOURS

Monday	10:00 am – 5:00 pm
Tuesday	10:00 am – 5:30 pm
Wednesday	10:00 am – 1:00 pm
Thursday	10:00 am – 12:00 pm

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