

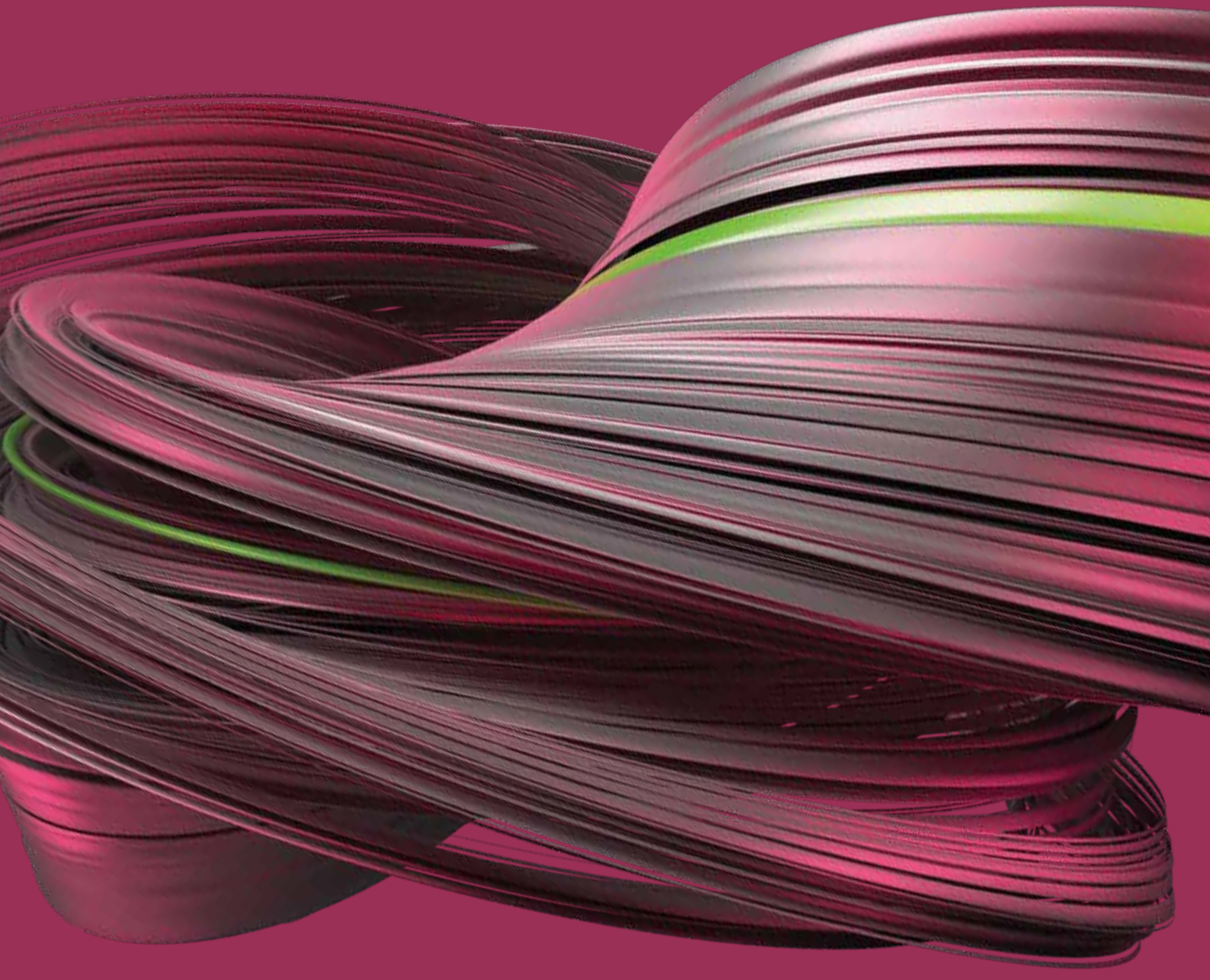
# SEMICON<sup>®</sup> KOREA 2023

## CONFERENCE GUIDE

FEBRUARY 1-3, 2023 | COEX, SEOUL

[WWW.SEMICONKOREA.ORG](http://WWW.SEMICONKOREA.ORG)

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# AGENDA AT A GLANCE

## DAY 1 - February 1(Wed)

	TIME	Room	Program
Workforce Development	09:00 - 12:00	307	Tutorial I: Lithography Tutorial
	09:00 - 12:00	308	Tutorial II: Deposition Tutorial
	09:00 - 12:00	317	Tutorial III: Device Tutorial
Special Event	10:00 - 10:10	401	Opening Ceremony
Keynote Speech	10:10 - 12:10	401	Keynote Speech
SEMI Technology Symposium	13:00 - 16:20	307	S1. Advanced Lithography
	13:00 - 17:00	308	S2. Advanced Materials & Process Technology
	13:00 - 17:30	317	S3. Device Technology
Business	13:00 - 16:15	300	Market Trends Forum
Technology	13:00 - 17:20	327	Smart Manufacturing Forum
	13:00 - 15:50	318	Test Forum

## DAY 2 - February 2(Thu)

	TIME	Room	Program
Workforce Development	09:00 - 12:00	307	Tutorial IV: Plasma & Etching Tutorial
	09:00 - 12:00	308	Tutorial V: CMP & Cleaning Tutorial
	09:00 - 12:00	317	Tutorial VI: Packaging Tutorial
Technology	10:00 - 17:15	402	MI (Metrology & Inspection) Forum
SEMI Technology Symposium	13:00 - 17:00	307	S4. Plasma Science and Etching Technology
	13:00 - 17:30	308	S5. CMP & Cleaning Technology
	13:00 - 18:10	317	S6. Electropackage System and Interconnect Product
EHS & Sustainability	13:00 - 17:00	318	Sustainability Forum
Business	13:00 - 15:20	300	US Investment Forum
	13:00 - 17:00	Hall E1	Netherlands Tech Seminar - Sustainability at Semiconductor

## DAY 3 - February 3(Fri)

	TIME	Room	Program
DEI	10:00 - 12:00	402	Women-in-Technology
Workforce Development	13:00 - 17:00	401	Meet the Experts!



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## SPECIAL

**SAMSUNG**



## PLATINUM



## GOLD



## SILVER



# KEYNOTE SPEECH

- **Date:** Feb 1(Wed), 2023
  - **Time:** 10:10-12:10
  - **Room:** #401, Conference Room (South), COEX
  - **Language:** English
- ※ Simultaneous interpretation will be provided

## Keynote #1 10:10 - 10:50

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### Beating Moore's Law: Efficiency for an interconnected world

**Joseph Macri**

Sr Vice President, Corporate Fellow and  
CTO of Client, Compute and Graphics



## Keynote #2 10:50 - 11:30

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### 3D Integration Technology: Enabling Heterogeneous System Scaling

**Eric Beyne**

Sr.Fellow, VP R&D



## Keynote #3 11:30 - 12:10

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### Accelerating innovation – from lab to fab

**Patrick Lord**

EVP, CSBG and Global Operations



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# Tutorial I: Lithography Tutorial

This tutorial is intended for who interested in lithography technologies and related area. In this tutorial, trends, and issues as well as fundamentals of Lithography technologies will be provided from industry experts and academia.

- **Date:** Feb 1(Wed), 2023
  - **Time:** 9:00-12:00
  - **Room:** #307, Conference Room (South), COEX
  - **Language:** Korean
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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09:00 - 09:45	<b>Fundamentals of EUV Lithography</b> Jinho Ahn   Hanyang University
09:45 - 10:00	<b>Q&amp;A / Break</b>
10:00 - 10:45	<b>Lithography 장비 개발 현황 및 향후 전망</b> Hyoung-kook Kim   ASML
10:45 - 11:00	<b>Q&amp;A / Break</b>
11:00 - 11:45	<b>Lithography Process Technology</b> Jung Sik Kim   SK hynix
11:45 - 12:00	<b>Q&amp;A</b>

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\*The agenda is subject to change.

# Tutorial II: Deposition Tutorial

- **Date:** Feb 1(Wed), 2023
- **Time:** 9:00-12:00
- **Room:** #308, Conference Room (South), COEX
- **Language:** Korean
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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09:00 - 10:15	Atomic Layer Deposited Oxide Semiconductors for New Channel Materials: Fundamentals to Recent Progresses Prof. Jin-Seong Park   Hanyang University
10:15 - 10:30	Q&A / Break
10:30 - 11:45	3D Logic Transistor Technology Seiyon Kim   SK hynix
11:45 - 12:00	Q&A

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\*The agenda is subject to change.

# Tutorial III: Device Tutorial

In this tutorial, basic of semiconductor device technology will be covered. The tutorial consists of 2 lectures on both memory and system semiconductor fundamentals delivered by experts.

- **Date:** Feb 1(Wed), 2023
  - **Time:** 9:00-12:00
  - **Room:** #317, Conference Room (South), COEX
  - **Language:** Korean
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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09:00 - 10:15	<b>Introduction to Logic Devices (MOSFETs)</b> Woo Young Choi   Seoul National University
10:15 - 10:30	<b>Q&amp;A / Break</b>
10:30 - 11:45	<b>DRAM Memory Overview &amp; Fundamentals</b> Tae Kyun Kim   SK hynix
11:45 - 12:00	<b>Q&amp;A</b>

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\*The agenda is subject to change.

# S1. Advanced Lithography

## *EUV High Volume Manufacturing and Beyond*

Scaling cutting-edge products requires continuous advancement of lithography technology as well as a timely patterning strategy. EUV lithography is one of the most important technologies for competitive high-volume manufacturing. It is essential to expand the current capability of EUV lithography and to study alternative solutions for next-generation lithography. Advanced lithography session of the STS 2023 will provide the best opportunity to understand and discuss the trends in advanced lithography technology under the theme of “EUV High Volume Manufacturing and Beyond”. Presentations by academics and companies in the semiconductor industry will offer the most up-to-date information and key progresses in the various areas of advanced lithography. Furthermore, innovative challenges will be discussed to overcome environmental limitations such as new EUV patterning material, overlay and next generation high NA EUV system from the perspectives of various sectors and stakeholders of EUV lithography technology.

- **Date:** Feb 1(Wed), 2023
- **Time:** 13:00-16:20
- **Room:** #307, Conference Room (South), COEX
- **Language:** English
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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13:00 - 13:40	<b>High NA EUV Preparation and 0.33NA Extendibility/ Exploratory Patterning</b> Ardavan Niroomad   imec (Invited)
13:40 - 14:20	<b>New Approaches to EUV Photoresists</b> Prof. Christopher Ober   Cornell University (Invited) <i>* Presentation will be given in pre-recorded video.</i>
14:20 - 14:40	<b>The Challenges of EUVL Patterning from Optical Imaging, Local Variation and Cost Perspective</b> Woo Jin Jung   Samsung Electronic
14:40 - 15:00	<b>Break</b>
15:00 - 15:20	<b>0.33 NA EUV Systems for High-Volume Manufacturing</b> Chris Kim   ASML



# S1. Advanced Lithography

15:20 - 15:40

**Actinic Tools for EUV Mask Production of 3nm Node Beyond**  
Byung Gook Kim | ESOL

15:40 - 16:00

**Study of Novel Absorber Material for EUV Blank Mask**  
Yongdae Kim | S&S Tech

16:00 - 16:20

**Challenges of Overlay Control in EUV Lithography**  
JoonGeun Ha | SK hynix

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\*The agenda is subject to change.

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## S2. Advanced Materials & Process Technology

### *Materials and Process for 3D Semiconductor Technology*

In this session, the state-of-art research and development results on Advanced Materials and Process Technology, the key enablers of future semiconductor devices, will be shared. Eight excellent presentations, including two outstanding invited talks, will address critical technical issues and solutions. Prominent speakers from academia and industry will discuss recent achievements in innovative approaches to overcome scaling limits, such as three-dimensional devices, double-sided interconnects, and novel materials for photoresist, channel, memory, and interconnects. Innovations in process, equipment, materials, and integration will be discussed not only from the viewpoints of technology but also of mass production.

- **Date:** Feb 1(Wed), 2023
  - **Time:** 13:00-17:00
  - **Room:** #308, Conference Room (South), COEX
  - **Language:** English
- ※ Simultaneous interpretation will NOT be provided

### AGENDA

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13:00 - 13:40	<b>Exploring the Use of both Wafer Sides for Improved Device Connectivity and Higher Performance-power-scaling Benefits</b> Anabela Veloso   imec (Invited)
13:40 - 14:00	<b>EUV Dry Resist Equipment and Process for Extreme Semiconductor Device Scaling</b> Benjamin Eynon   Lam Research
14:00 - 14:20	<b>3D NAND Process, Design and Cell Architecture</b> Jeongdong Choe   TechInsights
14:20 - 14:40	<b>Break</b>
14:40 - 15:00	<b>Extending Capabilities of Plasma Enhance Atomic Layer Deposition: Film Quality, Step Coverage and Productivity</b> JongWon Shon   ASM
15:00 - 15:40	<b>Ferroelectric Hafnium/Zirconium Oxide: From Memory Devices to Emerging Applications</b> Uwe Schroeder   NaMLab (Invited)

## S2. Advanced Materials & Process Technology

15:40 - 16:00	<b>Scaling the DRAM Capacitor with a Novel Co-optimized Hardmask &amp; High Aspect Ratio Etch Technology</b> Ajay Bhatnagar   Applied Materials
16:00 - 16:20	<b>Break</b>
16:20 - 16:40	<b>Innovation of Ion Implantation for Advanced Device</b> Kyungwon Lee   Axcelis Technologies
16:40 - 17:00	<b>Beyond Silicon based Memory Devices: New Channel Material</b> Jaehyeon Kim   SK hynix

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\*The agenda is subject to change.

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# S3. Device Technology

## *Evolutionary Device Technology Breaking the Limits*

Ever-increasing demand for better performance and lower power consumption has been the driving force for scaling down the physical dimension of transistors. Both evolutionary and revolutionary innovations have enabled the unprecedented progress in semiconductor devices. The evolutionary path has steered device technology towards three-dimensional device architectures as well as towards the adoption of new materials. On the other hand, the revolutionary road has driven device technology towards novel applications such as IoT, AI, automotive, healthcare, and so on.

This session will feature eight distinguished speakers to review various novel logic and memory device architectures, and their applications in memory, logic, RF and emerging fields.

- **Date:** Feb 1(Wed), 2023
- **Time:** 13:00-17:30
- **Room:** #317, Conference Room (South), COEX
- **Language:** English
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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13:00 - 13:30	<b>Ferroelectric NAND Flash Memory</b> Jang-Sik Lee   POSTECH (Invited)
13:30 - 14:10	<b>Ultimate CMOS Device Scaling by Nanosheet Architectures</b> Naoto Horiguchi   imec (Invited)
14:10 - 14:30	<b>Peripheral Transistor for Memory Application</b> YoungGwang Yoon   SK hynix
14:30 - 14:50	<b>Break</b>
14:50 - 15:10	<b>A New 3D DRAM Si Nanosheet Architecture - Virtual Semiconducto Processing for Technology Pathfinding</b> Benjamin Vincent   Coventor, Lam Research



# S3. Device Technology

15:10 - 15:50	<b>Advanced Interconnect Technology in the era of Heterogenous Integration</b> Kisik Choi   IBM (Invited)
15:50 - 16:10	<b>Novel I/O Oxide Formation for GAA Transistor</b> Byeong Chan Lee   Applied Materials
16:10 - 16:30	<b>Break</b>
16:30 - 17:10	<b>Reliability and Failure Physics of Advanced GaN Power Devices</b> Prof. Enrico Zanoni   University of Padova (Invited)
17:10 - 17:30	<b>Innovative Logic Technology for 1nm and beyond</b> Jaehyun Park   Samsung Electronics

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\*The agenda is subject to change.

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# Technology Test Forum

- **Date:** Feb 1(Wed), 2023
- **Time:** 13:00-15:50
- **Room:** #318, Conference Room (South), COEX
- **Language:** English and Korean
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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13:00 - 13:30	<b>Demanding Test Challenges and Cost-Effective Solutions</b> James JinSoo Ko   Cohu
13:30 - 14:00	<b>Battery Management Systems Device Testing and Trends for Automotive</b> Kang-hoon Oh   Teradyne
14:00 - 14:30	<b>Data Analytics for the Chiplet Era</b> Jeongseob Kim   Advantest
14:30 - 14:50	<b>Break</b>
14:50 - 15:20	<b>High Resolution OLED Display Driver IC Testing: Trends and Challenges</b> Chris Lemoine   Cohu
15:20 - 15:50	<b>Challenges from the Perspective of Future Thermal Trends and Test Infra for DRAM Products</b> Sung Wook Moon   SK hynix

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\*The agenda is subject to change.

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# Smart Manufacturing Forum

## *Autonomous Factory of Future*

This forum is a prestigious event, organized to provide an international platform for researchers, engineering managers, and industrial participants to share the industry state of the art in Smart Manufacturing. You'll hear global experts share strategies and best practices to improve manufacturing data capture and analysis. And find ideas and solutions to maintain business continuity and meet the increasing demands of customers.

- **Date:** Feb 1(Wed), 2023
- **Time:** 13:00-17:20
- **Room:** #327, Conference Room (South), COEX
- **Language:** English and Korean
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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13:00 - 13:30	<b>[Keynote] AI-Driven Autonomous Smart Factory of the Future</b> James Lin   UMC <i>* Presentation will be given in pre-recorded video.</i>
13:30 - 13:55	<b>EDA, Beyond SEMI Standard Protocol</b> Hyungsu Kim   Doople
13:55 - 14:20	<b>Next Generation Automation for Semiconductor Industry</b> Sang-Hun Suh   Schneider Electric
14:20 - 14:35	<b>Break</b>
14:35 - 15:00	<b>Digital Twin for Data-driven Process Optimization &amp; Customer Collaboration</b> Safa Kutup Kurt   Merck
15:00 - 15:25	<b>Introduction of Equipment Level FDC System for Semiconductor Wet-cleaning Equipment Optimization and Real-time Fault Detection</b> Nam-Jin Kim   Global ZEUS
15:25 - 15:50	<b>AI Driven Process Diagnostics and Control: Trends, Gaps and Future</b> Jae Yong Park   Samsung Electronics

15:50 - 16:05

Break

16:05 - 16:30

**Large-Scale Machine Learning Platform for Continuously Deploying Virtual Metrology Models for Semiconductor Manufacturing**  
Brendon Choe | Gauss Labs

16:30 - 16:55

**The Digital Transformation of Semi manufacturing**  
John Behnke | Inficon  
*\* Presentation will be given in pre-recorded video.*

16:55 - 17:20

**AI-driven Asset Performance Management System and Use Cases for Semiconductor Sub-Fab and Facility**  
James Hyuk-Jun Na | BISTelligence

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\*The agenda is subject to change.

## SPONSORS





- **Date:** Feb 1(Wed), 2023
- **Time:** 13:00-16:15
- **Room:** #300, Conference Room (South), COEX
- **Language:** English and Korean
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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13:00 - 13:30	<b>Semiconductor Market Outlook; Navigating Rapidly Changing Market Environment.</b> Risto Puhakka   TechInsights
13:30 - 14:00	<b>Financial Market Outlook and Investment Strategy in 2023</b> Byung-Yeon Kim   NH Investment & Securities
14:00 - 14:30	<b>Impact of US-China Conflict on the Semiconductor Industry</b> Changwook Kim   Boston Consulting Group
14:30 - 14:45	<b>Break</b>
14:45 - 15:15	<b>Packaging Market</b> E. Jan Vardaman   TechSearch
15:15 - 15:45	<b>Chip Expansion Impacts on Semiconductor Materials</b> Lita Shon Roy   Techcet
15:45 - 16:15	<b>SEMI Fab Investments, Equipment and Materials Brief</b> Inna Skvortsova   SEMI

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\*The agenda is subject to change.

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# Tutorial IV: Plasma & Etching Tutorial

This tutorial is designed as basic course for new engineers who are working at etching technology related area. With the practical lecture from device makers, equipment suppliers and academia, you will learn the hottest issues and challenges in plasma & etching process and fundamental technologies as well.

- **Date:** Feb 2(Thu), 2023
  - **Time:** 9:00-12:00
  - **Room:** #307, Conference Room (South), COEX
  - **Language:** Korean
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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09:00 - 10:15	<b>Plasma for Dry Etching</b> Jong Chul Park   Samsung Electronics
10:15 - 10:30	<b>Q&amp;A / Break</b>
10:30 - 11:45	<b>Etching Technology on Semiconductor World</b> Gyoung Jin Min   Lam Research
11:45 - 12:00	<b>Q&amp;A</b>

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\*The agenda is subject to change.

# Tutorial V: CMP & Cleaning Tutorial

This tutorial aims to provide a basic course for new engineers who is working at cleaning & CMP technology related area. With this practical lecture from device makers, material suppliers and academia, we expect you will learn the challenges and fundamental technologies in cleaning & CMP process.

- **Date:** Feb 2(Thu), 2023
  - **Time:** 9:00-12:00
  - **Room:** #308, Conference Room (South), COEX
  - **Language:** Korean
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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09:00 - 10:15	<b>Role and Responsibility of CMP Process in Recent IC Technology</b> Ji Chul Yang   EBARA Precision Machinery
10:15 - 10:30	<b>Q&amp;A / Break</b>
10:30 - 11:45	<b>Fundamentals of Semiconductor Surface Cleaning Technology</b> Prof. Sangwoo Lim   Yonsei University
10:45 - 12:00	<b>Q&amp;A</b>

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\*The agenda is subject to change.

# Tutorial VI: Packaging Tutorial

This tutorial is designed as basic course for new engineers who is working at packaging technology related area. With the practical lecture from OSAT company and academia, we expect you will learn the challenges in packaging process and fundamental technologies as well.

- **Date:** Feb 2(Thu), 2023
- **Time:** 9:00-12:00
- **Room:** #317, Conference Room (South), COEX
- **Language:** Korean
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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09:00 - 10:15	첨단 반도체 패키지 기술 트렌드 (Advanced Technology Trends of Semiconductor Package) Min Suk Suh   SK hynix
10:15 - 10:30	Q&A / Break
10:30 - 11:45	Semiconductor Packaging - Overviews Prof. Gu-Sung Kim   Kangnam University
11:45 - 12:00	Q&A

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\*The agenda is subject to change.



# S4. Plasma Science and Etching Technology

## *Extreme A/R Etching for the Next Generation Devices in 3D Patterning*

Both memory and logic devices now facing difficult technical challenges. DRAM is moving into 3D structures. NAND keeps increasing more layers using two to three stacks. The logic device is moving into the gate all around structure. 3D structures require an extreme aspect ratio etching with higher selectivity. We will have industry experts' presentations to discuss today's etch technology topics regarding high aspect ratio and selectivity requirements. This information is critical for semiconductor engineers and students to understand today's etch technology.

- **Date:** Feb 2(Thu), 2023
  - **Time:** 13:00-17:00
  - **Room:** #307, Conference Room (South), COEX
  - **Language:** English
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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13:00 - 13:30	<b>Equipment Intelligence</b> Yeon Ho Lim   Korea Fusion Energy Research Institute (Invited)
13:30 - 13:50	<b>Introduction of Better ways to Control Uniformity, Profile and Damage in the Semiconductor Manufacturing using Plasma Etch</b> Kyung Yup Jeon   Samsung Electronics
13:50 - 14:10	<b>Recent Progress in High Aspect Ratio Patterning for Memory Devices</b> Thorsten Lill   Lam Research
14:10 - 14:30	<b>Break</b>
14:30 - 15:00	<b>Analysis of Plasma Kinetics of RF Capacitively Coupled Plasmas using a Two-dimensional High-performance Particle-in-cell Simulation</b> Prof. HaeJune Lee   Pusan National University (Invited)
15:00 - 15:20	<b>Progress and Perspectives in Plasma Etching Process for Fine Pattern Transfer and High-Aspect Ratio Feature Formation</b> Song-Yun Kang   Samsung Electronics

# S4. Plasma Science and Etching Technology

15:20 - 15:40	<b>Addressing EUV Patterning Challenges with Pattern Shaping</b> Amol Gupta   Applied Materials
15:40 - 16:00	<b>Break</b>
16:00 - 16:40	<b>Improving Etch Selectivity during Plasma-assisted Etching of Silicon-based Dielectrics</b> Sumit Agarwal   Colorado School of Mines (Invited)
16:40 - 17:00	<b>Deep Reactive Ion Etch - Enabling Advanced Specialty Technologies and Packaging Applications</b> Davis Mark Haynes   Lam Research

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\*The agenda is subject to change.

## SPONSORS



# S5. CMP & Cleaning Technology

## *CMP & Surface Cleaning for Emerging Technology*

- **Date:** Feb 2(Thu), 2023
  - **Time:** 13:00-17:30
  - **Room:** #308, Conference Room (South), COEX
  - **Language:** English
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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13:00 - 13:30

**Sustainable Approaches and Research Challenges to CMP**  
Hyunseop Lee | Dong-A University (Invited)

13:30 - 13:50

**Wet Process Issues with Memory Device Scaling**  
Young-Hoo Kim | Samsung Electronics

13:50 - 14:10

**CMP opportunities as 2D Scaling moves toward 3D Heterogeneous Integration**  
Kevin Song | Applied Materials

14:10 - 14:30

**Break**

14:30 - 15:00

**Conditioning Free Pad with Controlled Surface**  
Sunghoon Lee | Smart Pad (Invited)

15:00 - 15:20

**Innovative Pad Conditioner with Tilting Controllability and Automatic Exchangeability in CMP Process Equipment**  
Sungyong Park | Samsung Electronics

15:20 - 15:50

**Evolution and Characterization of PVA Brush in Post CMP Cleaning for 10nm below Metal CMP Process**  
Prof. Jin Goo Park | Hanyang University (Invited)

15:50 - 16:10

**Break**

16:10 - 16:50

**Non-Contact Post CMP Cleaning of Cobalt Wafers**  
Ahmed A. Busnaina | Northeastern University College of Engineering (Invited)

# S5. CMP & Cleaning Technology

16:50 - 17:10

**Efficient Particle Removal using Cryogenic Aerosol**

Gyuhong Lee | SK hynix

17:10 - 17:30

**Post Treatment for Oxide/Nitride combined structure before using  
SPM+APM**

Woo-jae Chung | SK hynix

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\*The agenda is subject to change.

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# S6. Electropackage System and Interconnect Product

### *Advanced Packaging in a New Era*

Semiconductor is one of the most important innovations in 20th century. The pandemic caused by Covid 19 has led to emerging new lifestyle such as “Contactless” economy. This significant mainstream has accelerated the evolution of our semiconductor society beyond our expectation. As a result, most of package communities has been exposed to shorter development cycles to meet the demand. Herein, S6 in SEMICON Korea is going to hold the following seminars which can help package engineers to expose this environment and make ready for the advancement.

Heterogeneous IC Integration is projected to be a key driver for the next era of Moore’s law. The chiplet technology and the hybrid bonding technology as an advanced semiconductor package technology for heterogeneous IC integration, it is receiving a lot of attention recently. In S6 symposium, there are several presentations related to those topics. And also there are presentations on leading package technology trends.

- **Date:** Feb 2(Thu), 2023
- **Time:** 13:00-18:10
- **Room:** #317, Conference Room (South), COEX
- **Language:** English
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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13:00 - 13:40	<b>Chiplet Design and Heterogeneous Integration Packaging</b> John H Lau   Unimicron Technology Corporation (Invited)
13:40 - 14:00	<b>2.5D &amp; 3DIC Packaging Technology for Chiplet Integration</b> Calvin Lee   ASE
14:00 - 14:20	<b>Meeting Next Generation Silicon Challenges: Are Chiplets the Answer?</b> E. Jan Vardaman   TechSearch
14:20 - 14:35	<b>Break</b>
14:35 - 15:15	<b>Reliability Failures in Advanced Packaging Interconnects, their Detection and Mitigation</b> Prof. Choong-Un Kim   The University of Texas at Arlington (Invited)

# S6. Electropackage System and Interconnect Product

15:15 - 15:35	<b>Hybrid Bonding - State-of-the-Art and Upcoming Requirements in W2W and D2W</b> Paul Lindner, EV Group
15:35 - 15:55	<b>The Next Generation HBM Technology for Achieving Higher density and performance</b> Heejin Lee   SK hynix
15:55 - 16:15	<b>Technology Challenges for Logic and Memory C2W Hybrid Bonding</b> Jinho An   Applied Materials
16:15 - 16:30	<b>Break</b>
16:30 - 17:10	<b>Low Melting Temperature Solder Interconnects : Reliability and Degradation Mechanism</b> Tae-Kyu Lee   Cisco Systems (Invited)
17:10 - 17:30	<b>3D Packaging Solutions in Samsung and Eco-systems for the Next Silicon Technology Evolutions</b> Taejoo Hwang   Samsung Electronics
17:30 - 17:50	<b>The Revolution in Power Discrete Packages</b> Hyeong Il Jeon   Amkor Technology
17:50 - 18:10	<b>Resonac's Open Innovation at Advanced Package</b> Hidenori Abe   Resonac

\*The agenda is subject to change.

## SPONSORS



# MI (Metrology & Inspection) Forum

### *The Era of MI Convergence*

Recently, the demand for high-performance devices has sparked an interest in high-precision measurement and inspection technologies. In particular, new semiconductor processes such as GAA, BVNAND, and BSPDN require different methodologies from the existing ones.

Through this forum, we expect to provide insight into the future and the opportunity in the metrology & inspection field with global technology leaders.

- **Date:** Feb 2(Thu), 2023
- **Time:** 10:00-17:15
- **Room:** #402, Conference Room (South), COEX
- **Language:** English and Korean
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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10:00 - 10:10	Welcome
10:10 - 10:40	<b>Calibration for ROI Imaging and Workflow Automation</b> Bryan Sang Hoon Lee   Micron (Invited)
10:40 - 11:05	<b>Wafer Shape Metrology to Mitigate W2W Bonding Challenges</b> Shubham Badjate   KLA
11:05 - 11:30	<b>What Metrology and Inspection Need for Next-generation Semiconducto Device Manufacturing?</b> Eunpa Kim   Samsung Electronics
11:30 - 11:55	<b>Patterning Control Inflections in the 3D Era Driven by eBeam Solutions</b> Aviram Tam   Applied Materials
11:55 - 14:00	Lunch
14:00 - 14:30	<b>Lensless EUV imaging methods for metrology applications</b> Yansin Ekinici   Paul Scherrer Institut (Invited)

14:30 - 14:55	<b>Automated S/TEM Metrology Characterization of Gate-All-Around (GAA) Devices</b> Michael Strauss   Thermo Fisher Scientific
14:55 - 15:20	<b>CD-SEM: To be a new option for 3D profiling?</b> Tanaka Maki   Hitachi High-Technologies
15:20 - 15:45	<b>High-Throughput Scanning Probe Microscopy for Semiconductor Metrology and Inspection</b> CheoulJung Lee   Nearfield Instruments Korea
15:45 - 16:00	<b>Break</b>
16:00 - 16:25	<b>GAA Epi SiGe Application using METRION® inline SIMS System</b> Torsten Stoll   Nova
16:25 - 16:50	<b>Expansion and New Possibilities of AFM Technology in Semiconductor MI</b> Sang-Joon Cho   Park Systems
16:50 - 17:15	<b>A New Approach for MI Solutions: Need for Innovation</b> Wookrae Kim   Samsung Electronics

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\*The agenda is subject to change.

## SPONSORS



# Sustainability Forum

Sustainability is one of today's hottest topics in the news, and improving sustainability performance is a growing priority for SEMI Member companies. Given its central role in technology innovation, the electronics manufacturing industry has a responsibility to be a leader in sustainability and companies are actively developing their strategies to address the many challenges.

The Sustainable Forum will focus on the industry's efforts, highlighting topics such as greenhouse gas emissions reduction, increased renewable energy utilization, and enhanced equipment energy and water efficiency.

- **Date:** Feb 2(Thu), 2023
- **Time:** 13:00-17:00
- **Room:** #318, Conference Room (South), COEX
- **Language:** English and Korean
- ※ Simultaneous interpretation will NOT be provided

## AGENDA

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13:00 - 13:25	<b>[Opening Keynote] Sustainability for All</b> Claire Seo   Samsung Electronics
13:25 - 13:45	<b>Sustainability in semiconductor - Path to Net Zero</b> Inji Yeom   McKinsey
13:45 - 14:05	<b>Making Scaling Greener: Edwards' Sustainability from Subfab to Fab</b> Chris Bailey   Edwards
14:05 - 14:25	<b>Next Generation Etching Gas with Low Global Warming Potential</b> Oh Hyun Kim   Air Liquide
14:25 - 14:40	<b>Break</b>
14:40 - 15:00	<b>Carbon Neutrality - How chemical companies can enable to reach the goal?</b> Jens Liebermann   BASF
15:00 - 15:20	<b>Transformation to a Greener Fab of the Future</b> Dallal Silmani   Schneider Electric

# Sustainability Forum

15:20 - 15:40

**GHGs Emission Control Technology**  
Kibok Nam | GST

15:40 - 15:55

**Break**

15:55 - 16:15

**Multiplying the Impact of Sustainability and Solving Customers' Biggest Sustainability Challenges**  
Hyunjoo Park | DuPont

16:15 - 16:35

**The Road to a Zero-Emission Sub-Fab**  
Guy Davies | DAS EE

16:35 - 17:00

**[Closing Keynote] Journey to Sustainability for the Semiconductor Industry**  
Bangsil Lee | SK hynix

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\*The agenda is subject to change.

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# US Investment Forum

SEMICON Korea 2023 will showcase the latest semiconductor materials, equipment, and related technologies and will allow participants to see the present and future of the global industry. The United States has made reshoring its semiconductor capabilities a goal and with the passage of the CHIPS ACT is looking to secure the semiconductor supply chain.

SEMI and SelectUSA are co-hosting a U.S. Investment Forum on the sidelines of the show. The Forum will provide the show participants with a U.S. market overview, information about the CHIPS Act, and state-specific programs. The audience will be CEOs, investors, and industry representatives from the semiconductor supply chain.

- **Date:** Feb 2(Thu), 2023
- **Time:** 13:00-15:20
- **Room:** #300, Conference Room (South), COEX
- **Language:** English and Korean
- ※ Simultaneous interpretation will NOT be provided

## Co-organized by



## AGENDA

13:00 - 13:10	<b>Opening Remarks</b> Jasjit Singh   Executive Director for SelectUSA, U.S. Department of Commerce
13:10 - 13:40	<b>US Semiconductor Market Forecast</b> Changwook Kim   Boston Consulting Group
13:40 - 14:10	<b>Introduction to the CHIPS Act and domestic regulations for Korean semiconductor companies</b> Hyeong Joo Lim   Yulchon
14:10 - 14:40	<b>Investing in Materials to System Stack – Applied Ventures Perspective</b> John Wei   Applied Ventures
14:40 - 15:00	<b>Scaling Arizona’s Global Competitiveness</b> Victor Narusis   Arizona Commerce Authority
15:00 - 15:20	<b>Ohio’s Burgeoning Semiconductor industry</b> Young Ho Seo   JobsOhio

# Workforce Development

## Women-in-Technology

SEMI는 산업계의 DEI (Diversity, Equity and Inclusion)를 증진을 통해 다양하고, 창의적인 인적 자원의 활용이 산업의 궁극적인 발전에 기여한다는 메시지 전달을 목적으로 관련 캠페인 및 행사를 개최하고 있습니다. Women-in-Technology에서는 첨단 산업에 종사하는 여성 리더를 모시고 경험과 조언을 공유하는 자리를 마련하여 현업의 종사자 외에도 앞으로 사회에 진출하게 되는 학생 등 다양한 대상에게 비전과 영감을 심어줄 수 있는 기회를 제공하고자 합니다.

- **Date:** Feb 3(Fri), 2023
- **Time:** 10:00-12:00
- **Room:** #402, Conference Room (South), COEX
- **Language:** Korean (Simultaneous interpretation will NOT be provided)
- **Registration Fee:** Free

### AGENDA

10:00 - 10:05	Welcome
10:05 - 10:20	5 Values for your career development 김양형   KLA
10:20 - 10:35	변화와 개혁의 시대 속으로 이윤영   PSK
10:35 - 10:50	반도체 산업과 여성 엔지니어 박완재   SEMES
10:50 - 11:05	Career in Semiconductor Technology-Partnership 정은순   DuPont
11:05 - 11:20	Flexibility upon Dynamic Changes 권현정   Lam Research
11:20 - 12:00	Panel Discussion

\*The agenda is subject to change.

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## Diversity & Equity & Inclusion

# Meet the Experts!

지속적인 반도체 산업의 성장을 위해 인력 확보의 중요성이 높아짐에 따라, 우수한 인재를 양성하여 산업으로 유입하기 위한 많은 노력들이 이루어지고 있습니다. 이러한 노력의 일환으로 SEMI에서는 대학생만을 위한 멘토링 세미나 'Meet the Experts!'를 개최합니다. 다양한 직군의 엔지니어로부터 현장의 생생한 이야기를 들어 보시기 바랍니다.

- **Date:** Feb 3(Fri), 2023
- **Time:** 13:00-17:00
- **Room:** #401, Conference Room(South), COEX
- **Language:** Korean (Simultaneous interpretation will NOT be provided)
- **Registration Fee:** Free

## AGENDA

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13:00 - 13:25	CAE를 활용한 Chamber Design - 반도체 장비에서의 Simulation 활용 유승관   Wonik IPS
13:25 - 13:50	Application Engineer in Advantest 김진서   Advantest
13:50 - 14:15	Application Development Engineering towards Advanced Patterning Control 양홍천   KLA
14:15 - 14:40	반도체 제조 설비 Software Engineer의 역할 및 필요 기술 역량 강철규   SEMES
14:40 - 14:55	Break
14:55 - 15:20	Patience the Cycle and Take Various Perspectives 이창완   ASM
15:20 - 15:45	The Reason I Select TEL 임태환   TEL
15:45 - 16:10	Career Path Lam & Talk 원유찬   Lam Research

Diversity & Equity & Inclusion

# Meet the Experts!

16:10 - 16:35

Science is at the Heart of Everything we do

유하윤 | Merck

16:35 - 17:00

Customer Engineer

신연준 | Applied Materials

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