ICPT International Conference on Planarization/CMP Technology

https://icpt2025.org

ICPT International Conference on Planarization/CMP Technology

ICPT 2025 - INTERNATIONAL CONFERENCE ON PLANARIZATION/CMP TECHNOLOGY

PROGRAMME BOOK



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WELCOME MESSAGE

Welcome to the ICPT 2025 –
International Conference on Planarization/CMP Technology

Welcome to the 2025 International Conference on Planarization/CMP Technology! This year the conference is held in Hong Kong, China on October 29th to November 1st at the Hong Kong Science & Technology Park. The conference is hosted by the Chinese Tribology Institute of the Chinese Mechanical Engineering Society and co-hosted by Tsinghua University. We are honored to organize the conference in China again, and hope that it will be a wonderful event.

ICPT is the world's premier conference for scientific exchange focused on planarization, which is mainly chemical mechanical planarization (CMP). It represents the collaborative effort of CMP Users Groups from all six major semiconductor technology regions of the world. We are dedicated to fostering an open, inclusive, and innovative international discussion milieu, offering invaluable opportunities for exchange and collaboration among industry peers.

The conference will delve into a variety of cutting-edge subjects, such as FEOL and BEOL CMP, consumables and equipment, emerging and alternative CMP technologies. We are honored to have enlisted numerous premier speakers who will deliver captivating academic reports and offer unique perspectives. Additionally, the conference will showcase numerous oral presentations and a rich assortment of poster displays, presenting the latest research accomplishments and development tendencies in CMP technology.

For further details regarding the conference, attendance guidelines, and other information, please visit the conference website: **www.icpt2025.org.**

Finally, on behalf of the ICPT 2025 committee, we convey our most sincere gratitude and warmest welcome to you! Thank you for your contributions to the success of this conference. Let us collaborate to drive innovation and development in CMP technology and forge a splendid future!

Welcome to ICPT 2025 in Hong Kong, China!

Sincerely,



Xinchun Lu, Conference Chair

COMMITTEE MEMBER

COMMITTEE MEMBER

Executive Committee

China

Xinchun Lu, Tsinghua University
Xinping Qu, Fudan University

Europe

Patrick Ong, imec
Knut Gottfried, Fraunhofer ENAS

Japan

Syuhei Kurokawa, Kyushu University
Takashi Watanabe, KIOXIA Corp

South Korea

Jingoo Park, Hanyang University
Taesung Kim, Sungkyunkwan University

Taiwan, China

Eddy Peng, Hermes-Epitek Corp
Willie Pai, KINIK

United States

Gene Davis, Texas Instruments
Rob Rhoades, X-TrinSiC

Program Committee

China

Renhe Jia, Anstinc Technology
Yuchun Wang, Anji Microelectronics
Baoguo Zhang, Hebei University of Technology
Lifei Zhang, Tsinghua University

Europe

Cathérine Euvrard, CEA-Leti
Cedric Perrot, CEA-Leti
Catharina Rudolph, Fraunhofer IZM-ASSID
Aurore Bonnevialle Durel, STMicroelectronics

Japan

Yasuhisa Sano, Osaka University
Kazumi Sugai, Fujimi Inc
Norikazu Suzuki, Chuo University
Michio Uneda, Kanazawa Institute of Technology

South Korea

Sanha Kim, KAIST
Hyunseop Lee, Dong-A University
Kangchun Lee, Kwangwoon University
Sangwoo Lim, Yonsei University

Taiwan, China

Chih Chen, Yang Ming Chao Tung University
Chao-Cheng Arthur Chen, NTUST
Ming-shih Tsai, VERSUM Materials
Andy Tuan, Linx Consulting Inc

United States

Mark Buehler, Intel
Don Frye, Entegris
Jeff McKinnis, Fujimi
Bradley Wood, SPS International

ORGANIZATION

Hosted by

Chinese Mechanical Engineering Society (CMES)

Organized By

Chinese Tribology Institute, CMES

Tsinghua University

Co-organized By

Hwatsing Technology Co.,Ltd.

Anji Microelectronics Technology (Shanghai) Co., Ltd.

Supported By

Fudan University

Hong Kong Applied Science and Technology Research Institute (ASTRI)

Shanghai University

Hong Kong Tourism Board

Government-Funded Program

Southwest Jiaotong University

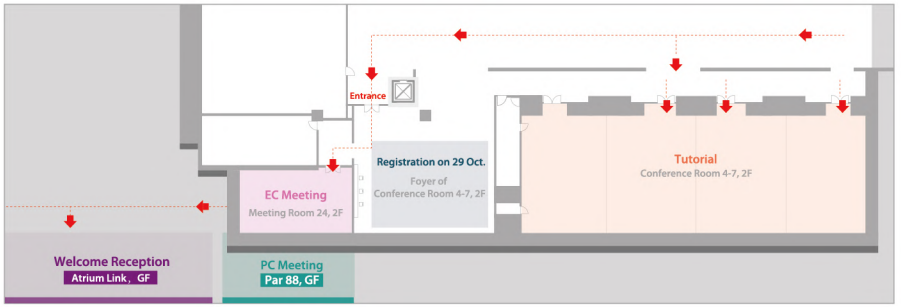
FLOOR PLAN & EXHIBITION LIST

FLOOR PLAN OF CONFERENCE AREA

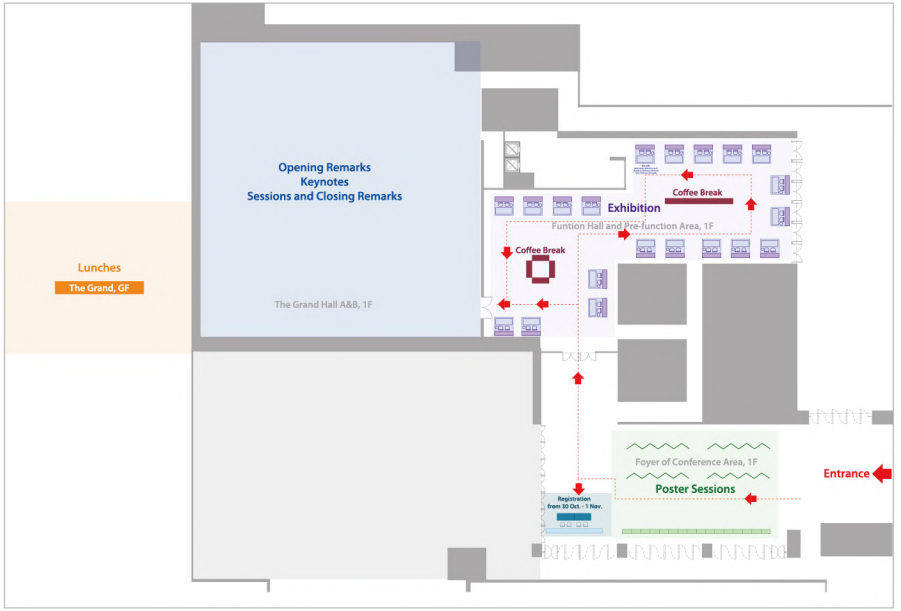
HKSTP Park Map



Building 10W



Building 12W



EXHIBITION LIST

Sponsors

Diamond
- Hwatsing Technology Co., Ltd. Booth: B20
- Anji Microelectronics Technology (Shanghai) Co., Ltd.
- Qnity™, DuPont Electronics Booth: B13

Banquet
- Merck KGaA Booth: B19
- Hubei Dinglong Co., Ltd. Booth: B18

Welcome Reception
- 3M Booth: B14

Gold
- Applied Materials
- Ebara Corporation Booth: B12
- Advanced NanoSurface Technologies (Shenzhen) Co., Ltd. Booth: B17
- KCTech Co., Ltd. Booth: B15

Silver
- Vibrantz Technologies Booth: B11
- Advanced Materials Technology, Inc. Booth: B16
- Hermes-Epitek Corp.
- KINIK Company Booth: B07
- Entegris
- Ehwa Diamond Booth: B10
- Shinhan Diamond Industrial Co., Ltd. Booth: B02
- Rokitechno Co., Ltd. Booth: B03

Lanyard
- Hubei Dinglong Co., Ltd.

Conference Bag
- Levitronix GmbH

Exhibitors

- Bruker (Beijing) Scientific Technology Co., Ltd. Booth: B04
- Park Systems Corp. Booth: B01
- Winifred International Technology Ltd. Booth: B09
- Advantec Co., Ltd. Booth: B06
- Global Net Corp. Booth: B05

CONGRESS INFORMATION

REGISTRATION

ICPT 2025 conference participants are asked to register at the registration desk. You could register from October 29. You will receive your name badge and your conference bag containing the program book and other items.

Date	Time	Location
Oct. 29 (Wed)	07:30-18:00	2F of Building 10W
Oct. 30 (Thu)	07:30-18:30	1F of Building 12W
Oct. 31 (Fri)	07:30-18:30	
Nov. 01 (Sat)	08:00-12:30	

SLIDES DESK

Each speaker is recommended to test and confirm the slides at the the slide desk before their session, and copy your slides to your meeting room computer at least 60 minutes before the session. Speakers are suggested to bring along the presentation on a USB drive for submission and testing to the **Slides Desk**.

Please be sure to check your presentation for viruses before uploading.

Date	Time	Location
Oct. 29 (Wed)	07:30-18:00	2F of Building 10W
Oct. 30 (Thu)	07:30-18:30	1F of Building 12W
Oct. 31 (Fri)	07:30-18:30	
Nov. 01 (Sat)	08:00-12:30	

POSTER & EXHIBITION SERVICE DESK

Poster authors could get the tape to put up their posters at the service desk. Before you put up your poster, please sign in to the poster list to confirm your participation.

The poster & exhibition service desk is just next to the registration desk, at foyer of conference area, 1F of Building 12W.

Exhibitors could get help from this service desk too.

Poster Desk	1F of Building 12W
Oct. 29 (Wed)	16:00-18:00
Oct. 30 (Thu)	07:30-18:30
Oct. 31 (Fri)	07:30-18:30
Nov. 01 (Sat)	08:00-12:30

DINING INFORMATION

Refreshment

Refreshment breaks will take place at Function Hall as well as the Pre-function Area.

Lunch

ICPT 2025 prepared lunches from Oct. 29 - Nov. 1, you will get coupon when you register for the conference.

Date	Lunch	Location
Oct. 29 (Wed)	12:30-13:30	Conference Room 4-7, 2F of 10W
Oct. 30 (Thu)	12:10-13:00	Restaurant The Grand, GF of 12W
Oct. 31 (Fri)	12:10-13:00	
Nov. 01 (Sat)	12:10-13:00	

Welcome Reception

The conference will host a welcome reception, all speakers and delegates are cordially invited to attend, where you can meet peers and break the ice in a relaxed atmosphere!

Date: October 30

Time: 18:30-19:30

Venue: Atrium Link, GF of 10W, HKSTP

Banquet

Banquet has been arranged by the organizer, it will be held on the Cruise for the participants. During the cruise, delegates can enjoy the Victoria Harbour night view, which is recognized as one of the most beautiful harbour night views in the world.

Date: October 31

Time: 19:00-21:00

The conference will arrange shuttle buses for delegates attending the banquet. The shuttle will depart from the HKSTP at 18:10, and staff will be on site to guide the participants boarding the shuttle.

Others

Wi-Fi

Wi-Fi Internet access will be available free of charge to all participants. Public WiFi name is Wi-Fi.HK via HKSTP. No password is required but guests are required to accept our T&C to get access.

Smoking Policy

HKSTP Conference space is a non-smoking facility. Participants are requested to refrain from smoking in all areas.

Dress Code

You are welcome to weat business attire or business casual.

TUTORIALS

October 29, 2025

OCTOBER 29, 2025 Wednesday

08:00-09:00	**Registration**
09:00-09:10	**Opening Remarks** Tutorial Chair Baoguo Zhang Hebei University of Technology
Session Chair : Baoguo Zhang	
09:10-10:10	**FinFET CMP Process Technology and Challenges** Gary Lam Applied Materials
10:10-10:30	**Coffee Break**
10:30-11:30	**CMP for More-than-Moore** Gerfried Zwicker Fraunhofer Institute
11:30-12:30	**Fundamentals of CMP Chemistry** Kangchun Lee Kwangwoon University
12:30-13:30	**Lunch Break**

Session Chair : Yuchun Wang	
13:30-14:30	**Inside CMP: Material Removal Mechanisms Empowered by CMP Pad Conditioning** Yongsik Moon EHWA Diamond
14:30-15:30	**Post CMP Cleaner Development** Don Frye Entegris
15:30-15:50	**Coffee Break**
15:50-16:50	**Metrology and Inspection for Heterogeneous Integration** Taegon Kim Hanyang University
16:50-17:00	**Closing Remarks** Tutorial Chair Baoguo Zhang Hebei University of Technology
17:00-18:00	**Registration**

PROGRAM AT A GLANCE

October 29 to November 1, 2025

OCTOBER 29, 2025 Wednesday

08:00-09:00	Registration
09:00-09:10	Opening Remarks
09:10-12:30	Tutorials
12:30-13:30	Lunch Break
13:30-16:50	Tutorials
16:50-17:00	Closing Remarks
17:00-18:00	Registration

OCTOBER 30, 2025 Thursday

08:00-08:20	Opening Remarks
08:20-08:50	Keynote Speech
08:50-10:15	SESSION 1 FEOL CMP
10:15-10:45	Coffee Break & Exhibition
10:45-12:10	SESSION 2 BEOL CMP
12:10-13:00	Lunch Break & Exhibition
13:00-14:45	SESSION 3 Post CMP Cleaning
14:45-15:15	Coffee Break & Exhibition
15:15-17:25	SESSION 4 3D ICs/TSV/Packaging Applications
17:25-18:30	Poster Session 1
18:30-19:30	Welcome Reception

OCTOBER 31, 2025 Friday

08:00-08:30	Keynote Speech
08:30-09:55	SESSION 5 Equipment, Process Control and Metrology
09:55-10:00	Next Year ICPT Introduction
10:00-10:25	Coffee Break & Exhibition
10:25-11:50	SESSION 6 CMP Consumables
11:50-12:10	Award Ceremony
12:10-13:00	Lunch Break & Exhibition
13:00-14:45	SESSION 7 Substrate Polishing such as Si, SiC, GaN and Diamond
14:45-15:15	Coffee Break & Exhibition
15:15-17:00	SESSION 8 CMP Fundamentals, Modeling and Simulation
17:00-18:10	Poster Session 2
18:10-21:00	Banquet

NOVEMBER 1, 2025 Saturday

08:00-09:25	SESSION 9	BEOL CMP & Defects, reliability issues and Post CMP cleaning
09:25-09:55		Coffee Break & Exhibition
09:55-11:20	SESSION 10	3D ICs/TSV/Packaging Applications
11:20-11:30		Student Paper Award
11:30-11:40		Closing Remarks
11:40-13:30		Lunch Break & Exhibition
13:30-16:30		Social Event

PROGRAM

October 30 to November 1, 2025

OCTOBER 30, 2025 Thursday

08:00-08:20 Xinping Qu

Opening Remarks

Conference Chair Xinchun Lu
Tsinghua University

08:20-08:50 Yuchun Wang

Keynote
Forefront and Future Prospects of CMP for 3D Flash Memory

Takashi Watanabe, Chief Specialist
Kioxia Corporation

SESSION 1 FEOL CMP

08:50-10:15 Session Chair : Rob Rhodes

08:50-09:15 **Invited**
CMP Technology an Enabler for Next Generation Semiconductor Devices

Boyun Kim
Sumsung

09:15-09:35 **Control Mechanism of Poly-Si Removal Rate by Polymer Adsorption Layer**

Kazuki Yagi*, Shota Suzuki, Tsukuru Ohwaki, Tatsuhiko Hirano, Kazumi Sugai
Fujimi Incorporated Co., Ltd.

09:35-09:55 **Stop-in-Oxide Polishing Behavior of Recycled Silica Slurry on Blanket and Structured Wafers**

Max Constantin Klotzsche*, Michael Künzler, Conrad Guhl, Frank Babick
Fraunhofer IPMS

09:55-10:15 Student

Low-Defect SiO_2 Polishing with Mesoporous Ceria-Based Slurry

Linyi Shen, Boao Ma, Xuhao Cao, Wei Yuan, Fan Zhang, Xinping Qu*
Fudan University

10:15-10:45 **Coffee Break & Exhibition**

SESSION 2 BEOL CMP

10:45-12:10 Session Chair : Taesung Kim

10:45-11:10 **Invited**
Navigating the Edge: Wafer Periphery Challenges and Their Ripple Effects on CMP Control and BEOL Yield Optimization

John Bogere Matovu
Micron Technology

11:10-11:30 **Reaction Analysis of Tungsten (W) Oxidation and Additive Design for W-CMP Slurry: First-Principles Calculations Approach**

Hitomi Takahashi*, Tomohisa Suzuki, Hiroshi Ono, Yurie Konishi, Satoyuki Nomura
Hitachi, Ltd.

11:30-11:50 **New Tungsten Material for Advanced Technology Nodes, Impact on W CMP Performances Based on a Smart Material Properties Study**

Aurore Bonnevialle*
ST Microelectonics

11:50-12:10 Student

Effect of Electrostatic Interaction Using Silica Modification on Ta/Cu Chemical Mechanical Planarization

Jongyeong Jeon, Hyunho Kim, Taesung Kim*
Sungkyunkwan University

12:10-13:00 **Lunch Break & Exhibition**

SESSION 3 Post CMP Cleaning

13:00-14:45 Session Chair : Xinping Qu

13:00-13:25 **Invited**
Post-CMP Cleaning in Advanced Logic Nodes: PVA Brush Defects, Metal Contamination, and Process Roadmap

Jin-Goo Park
Hanyang University

13:25-13:45 **Advanced Post CMP Brush Design**

Rajeev Bajaj*, Ashavani Kumar, Erik Nelson, Yuyan Luo
Tesseract Materials Inc.

13:45-14:05 **Design for Chemical-Mechanical Cleaning Solution Beyond 2 nm Node**

Tsutomu Yoshino*, Keita Suzuki, Masafumi Nishiumi, Shogo Hamajima, Tatsuhiko Hirano, Kazumi Sugai
Fujimi Incorporated

14:05-14:25 **Corrosion Control for Metal CMP Processes with Low Dissolved Oxygen Levels During Post-CMP Cleaning**

Katrina Mikhaylichenko, Ian Deninger, Rick Martinez, Andrew Liu, Brian Brown, Nicole Staszak, Austin Rockaitis, Jason Keleher*
Applied Materials

14:25-14:45 Student

Effect of Wafer-Brush Relative Velocity on Non-uniform PVA Brush Wear and Cleaning Consistency in Oxide Post-CMP Cleaning

Sehoon Park,Sanjay Bisht,Maheepal Yadav,Hirokuni Hiyama, Jin-Goo Park*,Taegon Kim
Hanyang university

14:45-15:15 **Coffee Break & Exhibition**

SESSION 4 3D ICs/TSV/Packaging Applications

15:15-17:25 Session Chair : Jin-Goo Park

15:15-15:40 **Invited**
CMP and Surface Processing in Heterogeneous Integration

Knut Gottfried
Fraunhofer ENAS

15:40-16:05 **Invited**
CMP Solutions for Advanced Packaging

Yi He
3M

16:05-16:25 **Investigation of Hybrid Cu to Cu Bonding CMP Method for Next Generation Fine Pitch Devices**

Cheolmin Shin*, Hyunkyung Bae, Jiwoo Yoon, Jintae Park, Jongsu Kim, Junghyup Han, Joohee Jang, Dongchan Lim, Seokho Kim, Hojin Lee, Seunghun Lee, Sangjin Hyun
Samsung Electronics

16:25-16:45 **Abrasive-Free Polymer CMP Technology and Its Application to Polymer/Cu Hybrid Bonding**

Masahiro Kanno*, Akira Saito, Yoshiki Maruyama, Hiroshi Nakagawa, Akihiro Orita
Resonac

16:45-17:05 Student

Planarization of Cu/Polymer Interfaces via Plasma-Assisted CMP for Hybrid Bonding

Sukkyung Kang, Chansu Jeon, Juseong Park, Seulah Park, Kyung Min Kim, Sanha Kim*
Korea Advanced Institute of Science and Technology

17:05-17:25 Student

Ceria Slurry for Polymer CMP in Chiplet Applications

Yutetsu Kamiya, Masaki Mitsuhashi, Rio Motowaki, Yuzo Nakamura, Kohei Nakayama, Kenta Hayama, Fumihiro Inoue*
Yokohama National University

17:25-18:30 **POSTER SESSION 1**

18:30-19:30 **Welcome Reception**

OCTOBER 31, 2025 Friday

08:00-08:30 Xinchun Lu

Keynote
A Planarization System Roadmap for Broadening Device Applications

JiChul Yang, Deputy Division Executive, Precision Machinery Company
Ebara Corporation

SESSION 5 Equipment, Process Control and Metrology

08:30-09:55 Session Chair : Renhe Jia

08:30-08:55 **Invited**
Real-Time Process Control in Metal CMP: A Critical Enabler for Node Scaling

Kun Xu
Applied Materials

08:55-09:15 **A Scalable Digital Twin Framework for APC Optimization in CMP Using Simulation-Based Methods**

Seungchoun Choi*
Amously Inc.

09:15-09:35 **Evaluation of Mechanical Properties and Understanding of the Function of Polymer Films Formed by the Polishing Process**

Keita Suzuki*, Shota Suzuki, Tsukuru Ohwaki, Tatsuhiko Hirano, Kazumi Sugai
FUJIMI Incorporated

09:35-09:55 **CMP System Wafer Use and Savings**

Kevin Song*, Ben Pang
Applied Materials

09:55-10:00 **Jin-Goo Park**

Next Year ICPT

Sangwoo Lim, KUMPUGM president

10:00-10:25 **Coffee Break & Exhibition**

SESSION 6 CMP Consumables

10:25-11:50 Session Chair : Takashi Watanabe

10:25-10:50 **Invited**

Next Generation CMP Pad Conditioning: Fundamentals, Technology Development, and Future Roadmap

Yongsik Moon
EHWA Diamond

10:50-11:10 **A Study on the Effect of Diamond Shape, Tip Height Distribution and Pad Material Properties on Conditioning Response**

Juilin Chou, Chihchung Chou, Weichieh Su, Chienlin Chen, Andrew (Scott) Lawing*
Kinik Company

11:10-11:30 **Student**

Integrated Scratch and MRR Indices for Rational CMP Pad Selection

Hyeongmin Je, Hyun Jun Ryu, Haesung A Lee, Sanha Kim*
Mechanical Engineering, KAIST

11:30-11:50 **A Novel Quantification Technique of Damaged Pad Surface Asperity for Material Removal Efficiency Evaluation**

Norikazu Suzuki*, Shoyo Kusakari, Masaki Ono, Shun Nishida, Yuki Watanabe, Yohei Hashimoto
Kobe University

11:50-12:10 **Yuchun Wang**

Award Ceremony

12:10-13:00 **Lunch Break & Exhibition**

SESSION 7 Substrate Polishing such as Si, SiC, GaN and Diamond

13:00-14:45 Session Chair : Cedric Perrot

13:00-13:25 **Invited**

Investigation of CMP Techniques for High-Density Bonding in 3D ICs

Yingxia Liu
City University of Hong Kong

13:25-13:45 **Effect of Pad and Abrasive on SiC Wafer RR and Surface Quality**

Seungmahn Lee, Bohyeok Choi, Dongwook Kim, Jaeik Lee, Jaedong Lee*
KCTech

13:45-14:05 **External-Field-Enhanced Friction Chemistry of CeO_2 for Ultraflat Surface Manufacturing**

Kunpeng Wang*
Shanghai University

14:05-14:25 **Student**

Mechanism Analysis of the Highly Efficient Synergistic Oxidation Effect between Cerium Oxide and Persulfate in GaN CMP

Wenhao Xian, Baoguo Zhang*, Shitong Liu, Sihui Qin
Hebei University of Technology

14:25-14:45 **The Effect of Additive for Oxide Passivation on the Planarity of Nitride CMP**

Youngin Kim*, Jihoon Park, Byungsoo Joo, Seungyong Yu, Inhak Jeon, Sohyeon Park, Jinwoo Bae, Jonghyuk Park, Bo Un Yoon
Samsung Electronics

14:45-15:15 **Coffee Break & Exhibition**

SESSION 8 CMP Fundamentals, Modeling and Simulation

15:15-17:20 Session Chair : Eddy Peng

15:15-15:40 **Invited**
Atomic Level Material Removal Mechanism of Chip Surface

Linmao Qian
Southwest Jiaotong University

15:40-16:00 **Advancing Neural Network Potential Molecular Dynamics for CMP: More Realistic Modeling and New Insights**

Ken Takahashi*, Yoshishige Okuno, Akihiro Orita
Resonac Corporation

16:00-16:20 Student

Full-Chip CMP Modeling Based on Fully Convulutional Network Leveraging White Light Interferonmetry

Jules Exbrayat, Renan Bouis*, Elie Sezestre, Viorel Balan, Arnaud Cornelis, Damien Hebras, Catherine Euvrard
CEA-Leti

16:20-16:40 Student

Effect of Corrosion Inhibitors and Oxidizers to Achieve Controlled Molybdenum Oxidation and Dissolution

Palwasha Jalalzai, Gyeongwon Lee, Minseo Chae, Inkwon Kim, Taegon Kim, Jin-Goo Park*
Hanyang university

16:40-17:00 Student

Ammonium persulfate-based slurry molybdenum chemical mechanical polishing with high surface quality

Qiancheng Sun, Boao Ma, Haijun Cheng, Xinping Qu*
Fudan University

17:00-18:10 **POSTER SESSION 2**

18:10-21:00 Xinchun Lu Xinping Qu Yunchun Wang

Banquet

NOVEMBER 1, 2025 Saturday

SESSION 9 BEOL CMP & Defects, and Post CMP cleaning

08:00-09:25 Session Chair : Baoguo Zhang

08:00-08:25

Invited

Cu ECP Impact on CMP in Cu Interconnect Process

Libbert Peng
Anji Microelectronics Technology (Shanghai) Co. Ltd.

08:25-08:45

Student

Micro-Replicated Pad-Enabled Si3N4-Selective CMP using Silica Slurry: Higher Nitride Removal with Suppressed Oxide Loss

Yechan Kim, Ziyang Wang, Changwan Bae, Yongsuk Yang, Taesung Kim*
Sungkyunkwan University

08:45-09:05

Student

Post-CMP Cleaning of Positively-Charged Nanoceria (30 nm) Particles Using Ammonium Carbonate and Peroxide Mixed Solution

Boao Ma, Qiancheng Sun, Linyi Shen, Xuhao Cao, Wenlong Tang, Xinping Qu*
Fudan university

09:05-09:25

Robust Post-CMP Cleaning Process for Defect-free Self-Aligned Contact in Logic Device

Yooyong Lee*, Keunha Oh, Kiho Bae, Hoyoung Kim
Samsung Electronics

09:25-09:55 Coffee Break & Exhibition

SESSION 10 3D ICs/TSV/Packaging Applications

09:55-11:20 Session Chair : Knut Gottfried

09:55-10:20

Invited

Ultra-Precision Wafer Thinning Using Grinding-CMP Joint Method in Advanced 3D IC Applications

Dewen Zhao
Tsinghua University

10:20-10:40

Various Approaches to Integrate the Redistribution Layer (RDL) CMP of Advanced Packaging Process

Jaedong Lee*, Eunok Kim, Yeongjung Kim, Hyungoo Kong, Jinsook Hwang, Seulki Kim
KCTech

10:40-11:00

Hybrid Bonding Hotspots Prediction at Wafer Scale Using ML-Based CMP Simulations

Ruben Ghulghazaryan*, Davit Piliposyan, Jeff Wilson,Renan Bouis, Damien Hebras
Siemens Industry Software

11:00-11:20

Study on Through Glass Via (TGV) and Redistribution Layer (RDL) CMP Solutions for Panel Level Packaging (PLP)

Sunghoon Lee, Seulki Kim*, Yesol Kang, Eunok Kim, Jinsook Hwang, Jaedong Lee*
KCTech

11:20-11:30	Yuchun Wang Student Paper Award
11:30-11:40	Xinping Qu Yuchun Wang Closing Remarks
11:40-13:30	Lunch Break & Exhibition
13:30-16:30	Social Event

POSTER

October 30 to 31, 2025

OCTOBER 30, 2025 Thursday

17:25-18:30 POSTER SESSION1

Session Chair : Norikazu Suzuki

THU-P01
ID: 8

Advancing CMP R&D with Benchtop Systems: Cost-Effective Process Optimization and Consumable Characterization

Damien Yiyuan Khoo*
Bruker Nano Inc.

THU-P02
ID: 24
Student

Investigation of the Cleaning Mechanism in Amorphous Carbon Post-CMP cleaning

Ziyang Wang, Pengzhan Liu, Hyeonjeon Lee, Hyunho Kim, Teasung Kim*
Sungkyunkwan University

THU-P03
ID: 33

Enhanced Oxide Planarization for Advanced Packaging and Hybrid Bonding

Simon Lee*, Minh-Che Ho
Vibrantz Technologies

THU-P04
ID: 44

Hydrogen-Plasma Modification Model for GaN Surfaces

Rongyan Sun*,Tong Tao,Yuji Ohkubo, Kazuya Yamamura
The University of Osaka

THU-P05
ID: 59
Student

A High-Performance CeO_2 Slurry for Ultra-Precision Chemical Mechanical Polishing for Silicon Carbide Substrates

Hui Jin, Xiuyan Sun, Taobao Jiang, Pan Liu*
Fudan University

THU-P06
ID: 61

Synthesis of Mn-Doped Ceria Nanoparticles and Their Chemical Mechanical Polishing Performance on SiC Substrates

Xiaogang Hu, Hong Lei*
Shanghai University

THU-P07
ID: 63

New Smart Method for Sub 130 nm Slurry Particles Characterization-Size Measurement, Shape Recognition and Impact on CMP Process Performances

Aurore Bonnevialle*, Silvio Del Monaco
ST Microelectonics

THU-P08
ID: 69

Rheology and Tribology of Slurries–From Flow Curves to Stribeck Curves

Kartik Pondicherry*, Paul Staudinger
Anton Paar GmbH

THU-P09
ID: 72

CMP Slurry and Hydrogen Peroxide Concentration Monitoring Using Multiple Online Index of Refraction Sensors

Takao Moriyasu, Tracy Gast*, Mark Bumiller
Air Water Mechatronics Inc.

THU-P10
ID: 77
Student

Mechanistic Investigation of Inhibitor Mechanism in Mo CMP

Ilhwa Hong, Donggeun Park, Dongwon Kim, Ganghyeok Kim, Kangchun Lee*
Kwangwoon University

THU-P11
ID: 78
Student

pH-Tuned Approach for Defect Reduction During Poly Open CMP

Donggeun Park, Ilhwa Hong, Dongwon Kim, Ganghyeok Kim, Kangchun Lee*
Kwangwoon University

THU-P12
ID: 82

A Study on the Effect of Temperature on Polishing for Process Optimization

Naoyuki Handa*, Yukihiro Kang, Shinnosuke Yamamoto, Shuntaro Hayashi, Ji Chul Yang, Itsuki Kobata, Nozomu Kuwabara, Seiya Higuchi, Hiroharu Yukawa, Yasuyuki Motoshima, Shumpei Miura, Seungho Yun, Toshiya Kon, Yumiko Nakamura, Takeshi Ohtsu, Akira Yamaguchi, Megumi Uno
Ebara Corporation

THU-P13
ID: 85
Student

Effect of Nozzle Position on Liquid Film Thickness Distribution Formed by a Two-Fluid Jet

Jukiya Ikegaya, Naoto Doi, Hiroki Takahashi, Masayoshi Imai, Toshiyuki Sanada*
Shizuoka University

THU-P14
ID: 87
Student

Deformation and Behavior of Pva Brushes Induced by the Volume Change

Makoto Miwa, Ryota Koshino, Toshiyuki Sanada*
Shizuoka University

THU-P15
ID: 97

A Novel Wafer Contamination Standard with Micro-Scale Particle Positioning for Enhanced Defect Inspection Calibration

Jiaqing Zhu*, Syuhei Kurokawa, Terutake Hayashi
Huzhou University

THU-P16
ID: 108

Nano-Precision Metal Film Thickness Detection Technology by Using Eddy Current Principle

Hongkai Li*
Beijing Institute of Technology

THU-P17
ID: 109
Student

Study on the Enhancement of Silicon Carbide Removal Rate by Hybrid Abrasives in Chemical Mechanical Polishing

Sihui Qin, Baoguo Zhang*, Wenhao Xian, Shitong Liu
Hebei University of Technology

THU-P18
ID: 117

Computational Investigation of Multi-Coil Eddy Current Sensors with High Spatial Resolution for Chemical Mechanical Polishing

Chengxin Wang*, Yikai Li, Zhiying Ren, Jianxiong Chen
Fuzhou University

THU-P19
ID: 138

Effect of Brush Core Design on Liquid Flow During Scrub Cleaning

Eri Okubo*, Nao Okuma, Yasushi Hongo, Toshimasa Mano, Toshiyuki Sanada
AION Co., Ltd.

THU-P20
ID: 140

The Effect of Process Parameters and Cleaning Solution System on the Removal Behavior of Ceria Abrasives During Buff Cleaning

Mei Yan, Lifei Zhang*,Dewen Zhao, Xinchun Lu
Hwatsing Technology Co. ltd.

THU-P21
ID: 141
Student

Stabilization of Polyvinyl Acetal (PVA) Brushes via Effective Removal of Intrinsic Impurities Through Advanced Cleaning Techniques

Sanjay Bisht, Maheepal Yadav, Se-Hoon Park, Hirokuni Hiyama, Tae-Gon Kim, Jin-Goo Park*
Hanyang University

THU-P22
ID: 144
Student

Efficiency Enhancement in AlN CMP: Al_2O_3-Persulfate Synergy and Mechanisms

Shitong Liu, Baoguo Zhang*, Wenhao Xian, Sihui qin, Yaqing Li
Hebei University of Technology

THU-P23
ID: 149
Student

Effect of Pad Temperature on Within-Wafer Uniformity in CMP

Daehoon Kang,Taesung Kim*
Sungkyunkwan University

THU-P24
ID: 151
Student

Fine Slurry Residue Removal in Hard-Pad CMP by Tuning Process Conditions

Hyunjin Jeong, Minju Lee, and Taesung Kim*

THU-P25
ID: 161

Emerging Stress-Free Ruthenium Removal Study in Advanced Node Interconnect Structure

Yinuo Jin*, Jian Wang, Junzhong Zhang, Pengfei Chang, Rong Yu, Chen Wang
ACM Research (Shanghai), Inc.

THU-P26
ID: 162
Student

Microfabrication of Miniaturized Eddy Current Sensors and Inductance Enhancement via Origami Stacking

Dong Geun Kim, Kyunghyun Kim, Seong Jae Kim, Sanha Kim*
KAIST

THU-P27
ID: 165
Student

Effect of Synthesis Materials and Process Parameters on Polyvinyl Acetal (PVA) Brushes Properties and Incoming Impurities

Maheepal Yadav, Sanjay Bisht, Se-Hoon Park, Tae-Gon Kim, Hirokuni Hiyama, Jin-Goo Park*
Hanyang University

THU-P28
ID: 166

Development of Low-Defect Solutions for Next-Generation Polysilicon CMP Process Through Synergistic Integration of Slurry and Post-CMP Cleaning Chemistries

Kuan Ting Lin*
DuPont Taiwan Limited

THU-P29
ID: 178

Post-CMP Buffing Cleaner with Excellent Particle Cleaning via Effective Wafer Surface Passivation

Ying-Pei Huang*, Chih-Wei Lin, Syuan-Fu Chen, Chia-Te Chang, Yi-Ling Chang, Wei-En Hsu, Hong-Yi Chiang, Li-Yu Chen, Wei-En Huang, Ping Hsu
Qnity™, DuPont Electronics

THU-P30
ID: 183
Student

Study the Effect of Dicarboxylic Acid Stabilizers and Amino Acid Corrosion Inhibitors on Tungsten Chemical Mechanical Planarization Performance

Changhao Zheng, Weili Liu*
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences

THU-P31
ID: 185

Investigation of Metal Compatibility of Acidic Post CMP Cleaner Designed for Ceria Abrasives

Kohei Endo,Hiroaki Iwamoto*,Kenta Natsukawa,Shota Yoshioka
AGC Inc.

THU-P32
ID: 190
Student

Effect of Chelating Agents and Stabilizers on the Material Removal Rate and Surface Quality in Magnesium Aluminate Spinel Chemical Mechanical Polishing

Yaowen Li, Weili Liu*, Zhitang Song
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences

THU-P33
ID: 192

CMP Slurry Filtration Using Innovative Membrane Technology

Majid Entezarian*, John Morby,Sandeep Singh, Pierre Alexandre Bourgeois
Solventum

THU-P34
ID: 193

In-Line Real-Time Measurement of Recycled CMP Slurry Using Ultrasound

Raymond Maas*
Rhosonics

THU-P35
ID: 195

Revolutionizing Post-CMP Cleaner Development: A Machine Learning Approach

Abby Tsai, Jacky Cheng, Grace Liu, Michelle Sun, Ping Hsu, Peter Sun*
Qnity™, DuPont Electronics

THU-P36
ID: 200
Student

High-Efficiency Post-CMP Cleaning of Ceria Nanoparticles on SiO_2 with CO_2 Nanobubble Water

Xuhao Cao, Nan Guan, Boao Ma, Yuze Liu, Linyi Shen, Chunfeng Hu, Lijuan Zhang, XinPing Qu*
Fudan University

THU-P37
ID: 208

From Lab to Fab: The Art and Science of Capturing the Uncatchable in CMP Filtration

YuChieh Fu*
Entegris

THU-P38
ID: 209

New Development of Fine Particle Count (FPC) Reduction

Yu heng Cheng*
Entegris

THU-P39
ID: 212
Student

Research on Surface Quality Enhancement of Zinc Oxide Thin Films in CMP

Yaqing Li*
Hebei University of Technology

17:20-18:30 POSTER SESSION2

Session Chair : Kangchun Lee

FRI-P01
ID: 11
Student

Al-Doped CeO_2 as High-Performance Abrasives for Glass Chemical Mechanical Polishing

Haoyuan Wu, Qinghua Xu, Guosheng Yang, Yan Zhao, Xinping Qu, Hang Wei, Simin Li, Fan Zhang, Hui Shen*
Inner Mongolia University

FRI-P02
ID: 12
Student

Computational Fluid Dynamics (CFD) Studies of CMP Pad Considering Surface Roughness

shin il Oh, Taesung Kim*
Sungkyunkwan University

FRI-P03
ID: 18

Challenges of Barrier CMP Slurry for Hybrid Bonding Interconnect

Shogo Onishi*, Lexi Carlson, Glenn Whitener, Hisashi Takeda, Kazumi Sugai
FUJIMI Incorporated

FRI-P04
ID: 26
Student

Slurry Flow Redistribution in Cu Bulk CMP for Cost and Process Effi-ciency Optimization

Yoojin Son, Taesung Kim*

FRI-P05
ID: 123
Student

CMP Optimization for Electroplated Nanotwinned and Nanocrystalline Copper Films: Enabling Cu-Cu Direct Bonding in 3D Advanced Packaging

Yuanxing Duan, Shichen Xie, Ziting Ye, Yifan Yao, Lulin Xie, Xingchao Mao, Fuxin Du, Yingxia Liu*
City University of Hong Kong

FRI-P06
ID: 127
Student

The Stability Evaluation of Highly Dispersed Ceria Slurry Using Non-Ion Dispersant for CMP Process

Jaeyeong Cho, Sohee Hwang, Jinsu Kang, Woonjung Kim*
Hannam University

FRI-P07
ID: 52

Innovative Synergies in Slurry and PCMP for Wafer Back-Side TSV CMP Achieving Higher Throughput and Improved Surface Quality

Allison Hsu, Jacky Cheng*
Qnity™, DuPont Electronics

FRI-P08
ID: 132
Student

Characteristic Analsis of Ceria Nanoparticle Slurry for CMP Process Using Liquid Phase Method

Suyeon Seo, Sohee Hwang, Jaeyoung Cho, Chaeyeon Kim, Woonjung Kim*
Hannam University

FRI-P09
ID: 60

Innovative Approach for Surface Defect Reduction Through CMP Mechanical Effect Modulation

Zhengqiu Sun*, Wern Jun Mak
Micron Semiconductor Asia Operations Pte. Ltd.

FRI-P10
ID: 134
Student

The Preparation and Characterization of Ceria Nanoparticles Using Reducing Agent at Low Temperature Atmosphere

Chaeyeon Kim, Taekyum Kim, Sohee Hwang, Tao Lyu, Woonjung Kim*
Hannam University

FRI-P11
ID: 66

Remeoval Rate Estimation on Multi Buffing Slurry System via Machine Learning

Bohyeok Choi, Myunggoo Lee, Chanyeon Park, Inseol Hwang, Jaedong Lee*
KCTech

FRI-P12
ID: 68

Effect of Controlling Cu Oxidation State in Cu-CMP

Toshiya KON*, Megumi Uno, Chikako Takatoh
Chemical Solution Promoting Section Strategic Technologies Promoting Department Technologies & Intellectual Property Division

FRI-P13
ID: 79
Student

Unveiling the Inhibition Mechanism of Cu Corrosion Through Structural Isomerism

Dongwon Kim, donggeun Park,ilhwa Hong, ganghyeok Kim, kangchun Lee*
Kwangwoon University

FRI-P14
ID: 80
Student

PS@CeO_2@PDA Abrasives for High-Planarization and Damage-Free Chemical Mechanical Polishing

Xiaohai He, Bo Gao, Wei Yuan, Xinping Qu, Hui Shen, Fan Zhang*, Simin Li
Inner Mongolia University

FRI-P15
ID: 81

Microfluidic Experimental Characterization and Simulation of Nanoparticle Aggregate Formation and Restructuration in the High Shear Flows Typical of Chemical Mechanical Polishing Process

Guillemette Corrieu, Patrice Bacchin*, Yannick Hallez, Mallorie Tourbin
University of Toulouse - LGC

FRI-P16
ID: 155
Student

Development and Application of Novel Highly Dispersible and Highly Active Ceria Polishing Slurries

Yanran Hou, Zihan Chen, Wei Yuan, Fan Zhang*
Fudan University

FRI-P17
ID: 90

Slurry Injection Schemes Based on Flow Field Distribution During Chemical Mechanical Polishing Process

Hui Ci, Lifei Zhang*, Nanhao Zhao, Dewen Zhao, Xinchun Lu
Hwatsing Technology Co. Ltd.

FRI-P18
ID: 156
Student

Novel Dendritic Mesoporous Ceria Abrasives for High-Efficiency Chemical Mechanical Polishing

Jinhua Liu, Linlin Zeng, Xinping Qu,Wei Yuan*, Fan Zhang
Fudan University

FRI-P19
ID: 99

Next Generation of Colloidal Ceria

Reka Toth*, Manabu Yuasa, Eisaku Suda,Takao Sekimoto, Arihisa Matsumoto
Solvay

FRI-P20
ID: 157
Student

Ultra-Small Mesoporous Ceria via One-Step Self-Assembly for Precision CMP of Silica

Junyu Cao, Wei Yuan*, Fan Zhang
Fudan University

FRI-P21
ID: 104

Closed-Loop Optimization of Reactive Force Field Parameters for Cobalt Chemical Mechanical Polishing Process

Yating Huang, Zhengmiao Fu, Lifei Zhang*, Jialei Zhang
Beijing Technology and Business University

FRI-P22
ID: 105

Effect of TAZ as Corrosion Inhibitor for Co and Cu in Chemical Mechanical Polishing (CMP): Insights from Electrochemistry and Triboelectrochemistry

Jie Cheng*, Jiahui Ma
China University of Mining and Technology

FRI-P23
ID: 107
Student

Development of Highly Stable Ceria Abrasive for Effective CMP (Chemical Mechanical Polishing) Process Using Solid State and Liquid Phase Method

Sohee Hwang, Woonjung Kim*
Hannam University

FRI-P24
ID: 113

Influence of Polishing Pad Groove Structure on Polishing Performance During Chemical Mechanical Polishing Process

Lifei Zhang*, Nanhao Zhao
Hwatsing Technology Co. Ltd.

FRI-P25
ID: 116

Design and Evaluation of Novel Colloidal Silica for Superior Removal Rate

Yoshiki Michiwaki*, Shunsuke Tanaka, Shun Arai, Shuta Ozawa
Fuso Chemical Co.Ltd.

FRI-P26
ID: 133
Student

Study on Stability Test of Ceria Slurry Using Synthesized Ceria Nanoparticle via Liquid Phase Method for Chemical Mechanical Polishing (CMP) Perfomance

Won Jeongyeon, Sohee Hwang,Tao Lyu, Woonjung Kim*
Hannam University

FRI-P27
ID: 136
Student

Effect of KIO_3 on Chemical Mechanical Polishing of Cu/Ni Heterogeneous Microstructures for MEMS

Yongshun Zhang, Xin Li, Liang Jiang*, Linmao Qian
Southwest Jiaotong University

FRI-P28
ID: 142

Study on Planarization of Heterogeneous Materials in Ultraviolet Energy Field-Assisted Chemical Mechanical Polishing

Jialei Zhang, Lifei zhang*, Dewen Zhao, Xinchun Lu
Tsinghua University

FRI-P29
ID: 145

Adaptive Slurry Design Based on an Environmentally Friendly Multi-Functional Additive: Methods and Mechanisms for Atomic-Level Simultaneous Removal of Cobalt Heterostructures

Zixin Gao, Lifei zhang*
Hwatsing Technology Co. ltd.

FRI-P30
ID: 167
Student

Study on the Dispersion Stability and Chemical Mechanical Polishing Performance of Ceria Nanoparticles at Low Thermal Process

Tao Lyu, Sohee Hwang, Sooyeon Choi, Songhui Kim, Woonjung Kim*
Hannam University

FRI-P31
ID: 148

Analytical Investigation of Retainer Groove Effect on Contact Pressure Distribution Near Wafer Edge in CMP

Yohei Hashimoto*, Kansuke Kameyama, Rikuto Endo, Hozumi Yasuda, Norikazu Suzuki
Kanazawa University

FRI-P32
ID: 169
Student

A New Synthetic Approach For High Surface Area Mesoporous Ceria Core-Shell Composite Abrasive

Linlin Zeng, Jinhua Liu, Xinping Qu, Wei Yuan, Fan Zhang*
Fudan University

FRI-P33
ID: 176
Student

Physical Limitations Due to Wear of Polymer Materials in Gimbal Head

Jeewoon choi, Taesung Kim*
Sungkyunkwan university

FRI-P34
ID: 177

Effect of Sub Pad Properties on Pressure Modulation on Copper Edge Removal in CMP

Simone Rizzardini, Valentin Callier, Antonio Del Galdo*
STMicroelectronics

FRI-P35
ID: 182
Student

Eco-Friendly Organic Antimicrobials for Microbial Control and Agent Replacement in Copper CMP Slurries

Gyuyoung Lee,Jaewon Lee,Seunghwan Lee,Taesung Kim*
Sungkyunkwan University

FRI-P36
ID: 184

Enhancing PECVD aSIC CMP Performance Through Slurry Selection and Pad Surface Texturing

Julian Sturm*, Cédric Perrot, Cécile Candegabe, Amélie Lambert, Jean-Pierre Nieto, Frederic Noel, Catherine Euvrard
CEA LETI

FRI-P37
ID: 189

Experimental and Mechanistic Analysis of Organic Bases for Enhancing Silica CMP Efficiency

Zhenyu Wu, Kong Hui, Weili Liu*, Zhitang Song
Shanghai Institute of Microsystem and Information Technology

FRI-P38
ID: 201
Student

Wear-Tolerant Asperity Design of Micro-Structured Pads forTime-Independent Material Removal Rate

Seounghee Yun, Hyun Jun Ryu, Sanha Kim*
Korea Advanced Institute of Science and Technology

TUTORIAL
BIO INFORMATIONT

Gary Lam

Applied Materials

FinFET CMP Process Technology and Challenges

Gary Lam is a CMP Technical Program Director at Applied Materials in Sunnyvale, USA. He earned a B.S. degree in Mechanical Engineering from U.C. Berkeley in 1998. With over 25 years in the CMP Division at Applied Materials, he began in Cu CMP process engineering and development. In 2005, he moved to a Customer Account Technologist role, qualifying new CMP platforms and processes for logic and memory fabs across North America, Asia, and Europe. Recently, he has taken on a new role focused on driving product improvement programs for next-generation CMP technologies.

Gerfried Zwicker

Fraunhofer Institute

CMP for More-than-Moore

Gerfried Zwicker earned his PhD for his research on ZnO surface properties at the Fritz-Haber-Institute in Berlin. He joined Fraunhofer Institute for Microstructure Technology IMT in 1985, working on CMOS technology using x-ray lithography, focusing on reactive ion etching. After moving to Fraunhofer Institute for Silicon Technology ISIT in Itzehoe in 1995, he focused on CMP, responsible for CMP tool development, consumables evaluation, and process adoption for MEMS and powerMOS applications. Dr. Gerfried Zwicker is the founder and organizer of the European CMP Users Meeting and was a co-founder and member of the Executive Committee of ICPT. He is the author/co-author of more than 50 publications and book contributions.

Kangchun Lee

Kwangwoon University

Fundamentals of CMP Chemistry

Kangchun Lee received a Ph.D. in Energy Engineering and a B.S. in Materials Science and Engineering from Hanyang University in Seoul, Republic of Korea, respectively. He currently serves as a Topical Advisory Panel Member in Applied Sciences and an Early Career Scholars Member in material science for the journal of Materials Research. His research focuses on Advanced CMP/Post-Cleaning Processes and cutting-edge materials based on Colloid- and Electrochemistry. He was a Staff Engineer at the Semiconductor R&D Center of Samsung Electronics from 2020 to 2023, where he participated in the development and mass production transfer of the GAAFET-based sub-3nm foundry CMP process and integration.

Yongsik Moon

EHWA Diamond

Inside CMP: Material Removal Mechanisms Empowered by CMP Pad Conditioning

Yongsik Moon is currently the Director of Technology in the CMP Disk Business Unit at EHWA Diamond, Korea, with over 20 years of experience in CMP across equipment makers, IDMs, logic foundries, and memory semiconductor companies. He began his CMP career in 2000 as a CMP Process Development Engineer at Applied Materials, where he developed Best Known Method (BKM) recipes for Cu interconnect CMP that remain in use today. He is also a co-author of the book “Advances in Chemical Mechanical Planarization”, edited by Prof. Suryadevara Babu (Elsevier, 2016). His diverse career offers a unique, end-to-end view of CMP, from R&D to advanced manufacturing and data-driven innovation.

Don Frye

Entegris, Inc

Post CMP Cleaner Development

Don Frye has worked at Entegris for 11 years in developing new post-CMP cleaners and has published several papers at ICPT and other conferences. He managed the Post CMP program and directed the cleaner projects during this time. He worked for 5 years at Henkel, developing new advanced underfills, low-temperature sintered silver adhesives, and wafer coatings. While at Henkel, Don was a Sr. Development and Sr. Research Scientist. He worked across several areas, developing new materials and processes for Wafer dielectrics and Packaging dielectrics.

Taegon Kim

Hanyang University

Metrology and Inspection for Heterogeneous Integration

Tae-Gon Kim is a faculty member in the Department of Smart Convergence Engineering at Hanyang University ERICA. Throughout his distinguished research career, he has established himself as a leading expert in semiconductor cleaning and chemical mechanical polishing technologies. His pioneering work encompasses advanced thin film characterization, in-line metrology techniques for cutting-edge technology nodes, and the development of in-line 3D-AFM technology for three-dimensional nanostructure analysis particularly for sidewall characterization of FinFET and nanowire architectures.

CONFERENCE BIO INFORMATION

CONFERENCE KEYNOTE



Takashi Watanabe

Chief Specialist, Kioxia Corporation

Forefront and Future Prospects of CMP for 3D Flash Memory

Takashi Watanabe received his M.Eng. in Applied Chemistry from Waseda University in 2000. He engaged in CMP process development for system LSI at Fujitsu Limited for 8 years. After that, he joined Toshiba Corporation (the predecessor of Kioxia Corporation) in 2008 and engaged in CMP process development of flash memory for 16 years. He contributed to the establishment of CMOS Directly Bonded to Allay (CBA) technology. Currently, he is in charge of CMP process technology for mass production.



JiChul Yang

Deputy Division Executive, Precision Machinery Company, Ebara Corporation

A Planarization System Roadmap for Broadening Device Applications

JiChul Yang has published over 30 conferences papers and delivered over 20 invited talks. He has presented at conferences including the International CMP Conference, ECS, and CAMP. His core focus is on Chemical Mechanical Planarization and surface treatment processes for semiconductor device applications. Dr. Yang possesses a deep understanding of device physics, semiconductor equipment, and processes, coupled with strong quality control and problem-solving skills crucial for semiconductor R&D and High-Volume Manufacturing (HVM) challenges.

CONFERENCE INVITED

Boyun Kim

Sumsung

CMP Technology An Enabler for Next Generation Semiconductor Devices

Boyun Kim received a Ph.D. in Chemistry from the University of Arizona in 2011 and an M.S. from Seoul National University in 2004. She joined the Semiconductor R&D Center at Samsung Electronics in 2011, where she was engaged in the development of CMP materials—including slurries, pads, and post-CMP chemicals—until 2024. From 2022 to 2024, she served as a tech. leader (TL) in the Material Development Team. Since 2025, she has been working as a project leader (PL) in Advanced Process Development Lab, leading next-generation CMP process development for advanced semiconductor devices.

John Bogere Matovu

Micron Technology

Navigating the Edge: Wafer Periphery Challenges and Their Ripple Effects on CMP Control and BEOL Yield Optimization

John Bogere Matovu earned his PhD in Chemical Engineering from Clarkson University, USA, in 2014. He joined Micron Technology as a CMP Engineer in CMP R&D in Technology Development. Over the years in Technology Development, he rose from Engineer to Senior Engineer, all the way up to Principal Engineer. Dr Matovu has 6 patents, several Innovation Awards and over 20 Technical Publications. His current interests include High Oxide Removal Rates Slurries, Yield and Defectivity Mitigation, CMP Design For Manufacturing, CMP Process Control and Equipment Matching Analytics.

Jin-Goo Park

Hanyang University

Post-CMP Cleaning in Advanced Logic Nodes: PVA Brush Defects, Metal Contamination, and Process Roadmap

Jin-Goo Park earned his Ph.D. from the University of Arizona in 1993. In 1994, he joined Hanyang University ERICA, where he is now a professor in the Department of Materials and Chemical Engineering as well as a Director of Electronic Materials and Processing Lab. His research interests include wafer cleaning, EUV/pellicle cleaning and chemical mechanical polishing with post CMP cleaning. He has authored more than 400 technical publications/presentations in wafer cleanings and CMP. He is the past president of Korea CMPUGM and a founder and president of ICPT which is the largest CMP conference in the world. He is now a member of the National Academy of Engineering of Korea which is the most honorable membership for engineering in Korea.

Knut Gottfried

Fraunhofer

CMP and Surface Processing in Heterogeneous Integration

Knut Gottfried has been working at the Fraunhofer Institute, overseeing semiconductor surface preparation technologies and serving as the Deputy Head of the Department of Nano Device Technologies since 2001. Beyond his primary roles, he chairs the European CMP- and Wet-Users Group and is Vice President of the International Conference on Planarization/CMP Technology (ICPT). He is also a founder and co-owner of Erzl-Technologies, which specializes in tailored process and technology development.

Yi He

3M

CMP Solutions for Advanced Packaging

Yi He has a strong background in chemistry and materials science. He earned a BS in Applied Chemistry from Central South University of Technology and a PhD in Organic Chemistry from the University of Wisconsin, Madison. He has had a long career at 3M, taking on various roles since 2005. His positions range from Senior Research Chemist to Global Senior Manager of Chemical Mechanical Planarization. He has led teams, engaged with major customers, and overseen product development across different divisions. Additionally, Yi He has published academic work and holds patents, demonstrating his expertise and contributions to the field.

Kun Xu

Applied Materials

Real-Time Process Control in Metal CMP: A Critical Enabler for Node Scaling

Kun Xu earned her Ph.D. in Materials Science and Engineering from the University of Illinois at Urbana-Champaign. One of her most notable achievements is the development of a real-time process control system now embedded in every Applied Materials metal CMP tool. This system plays a critical role in ensuring wafer-to-wafer and within-wafer uniformity, a cornerstone for consistent and high-yield chip fabrication. Dr. Xu holds 30+ patents and has authored over 10 peer-reviewed publications. Her current research focuses on next-gen process control solutions to address the escalating challenges of sub-3 nm CMP.

Yongsik Moon

EHWA Diamond

Next Generation CMP Pad Conditioning: Fundamentals, Technology Development, and Future Roadmap

Yongsik Moon is currently the Director of Technology in the CMP Disk Business Unit at EHWA Diamond, Korea, with over 20 years of experience in CMP across equipment makers, IDMs, logic foundries, and memory semiconductor companies. He began his CMP career in 2000 as a CMP Process Development Engineer at Applied Materials, where he developed Best Known Method (BKM) recipes for Cu interconnect CMP that remain in use today. He is also a co-author of the book “Advances in Chemical Mechanical Planarization”, edited by Prof. Suryadevara Babu (Elsevier, 2016). His diverse career offers a unique, end-to-end view of CMP, from R&D to advanced manufacturing and data-driven innovation.

Yingxia Liu

City University of Hong Kong

Investigation of CMP Techniques for High-Density Bonding in 3D ICs

Liu Yingxia received her doctorate in materials science and engineering from the University of California, Los Angeles in 2016. She then worked as a quality and reliability R&D engineer at Intel Corporation in San Jose, USA, where she was responsible for ensuring the reliability of Intel's advanced packaging technology, specifically the embedded multi-die interconnect bridge (EMIB) technology. She is currently an assistant professor in the Department of Systems Engineering at City University of Hong Kong. Her primary research areas include the study of high-density interconnect technology and the reliability study of 3D integrated circuits.

Linmao Qian

Southwest Jiaotong University

Atomic Level Material Removal Mechanism of Chip Surface

Linmao Qian received his Ph.D. in Mechanical Engineering from Tsinghua University in 1999. He currently serves as the Dean of the School of Mechanical Engineering at Southwest Jiaotong University. With long-term dedication to research in ultra-precision surface manufacturing, micro/nano structure fabrication, nanotribology, and biotribology, he has led multiple major scientific research projects and published over 150 papers in high-level journals such as Nature Communications and PNAS.

Libbert Peng

Anji Microelectronics Technology (Shanghai) Co. Ltd

Cu ECP Impact on CMP in Cu Interconnect Process

Libbert Peng has received his Master Degree from East China University of Science and Technology in 2002, and IMBA from HongKong University-Fudan University in 2016. He has 22 years semiconductor experience in CMP, functional wet chemical and electro-chemical plating technology from 2002. Mr. Libbert Peng has more than 60 patents in the fields.

Dewen Zhao

Tsinghua University

Ultra-precision Wafer Thinning Using Grinding-CMP Joint Method in Advanced 3D IC Applications

Dewen Zhao is an associate professor in the Department of Mechanical Engineering at Tsinghua University, and past-vice president of Hwatsing Technology Co. Ltd. His research interests include CMP and ultra-precision grinding in IC manufacturing and advanced packaging, focusing on theory, technology and equipment. He has authored more than 40 technical publications and holds over 100 patents in the area of CMP and grinding. He is now a committee member of the Chinese Tribology Institute of the Chinese Mechanical Engineering Society.

HWATSING 华海清科

股票代码 STOCK CODE 688120

Hwatsing Technology Co., Ltd.

Hwatsing Technology Co., Ltd. (Stock Code: 688120) is a high-end semiconductor equipment manufacturer with core independent intellectual property rights. The company' s main products include Chemical Mechanical Polisher, Grinder, Dicer, Wet Process Equipment, Implanter, Bevel Polisher, Wafer Reclaim, Consumables and Maintenance Service, which form the platform strategy of "Equipment + Service". The company's main products and services have been widely used in integrated circuits, advanced packaging, silicon wafers, third-generation semiconductor, MEMS, Micro LED and other manufacturing processes.

Relying on the international business philosophy, talent team and advanced process test conditions, Hwatsing is committed to providing advanced equipment and process integration solutions for companies in the semiconductor field. We have set up 4 subsidiaries, 2 branches, and over 30 service centers nationwide. By consistently delivering superior quality and exceptional service, Hwatsing has earned the trust of both domestic and international clients and is steadily evolving into a globally recognized provider of high-end integrated circuit equipment and technical services.

Hwatsing wafer reclaim service operates in a standard fully automated production facility, supported by a professional team specializing in CMP and wet cleaning technologies, as well as comprehensive mainstream measurement and analysis equipment. The company offers full-spectrum technical support, sales, and foundry services tailored to various process requirements. It has already provided high-quality services to over 30 domestic partners.

PRODUCTS



CMP Equipment : Universal-300 T

·8-zone polish head
·Integrated with multiple end-point detection systems, and advanced cleaning technology
·Meet the technical requirements for advanced process



CMP Equipment : Universal-H300

·1 platen equipped with 2 rotatable heads for high throughput
·2 sets of independently maintainable horizontal cleaning units
·High throughput and ultra-clean for advanced process polishing



GRINDING Equipment : Versatile-GP300

·Focused on grinding of 2 stacked silicon wafers in 3D-IC, integrating ultra precision grinding and CMP processes
·Advanced control technology of thickness uniformity and surface defect, TTV<1um
·Innovative multi-zone pressure intelligent control system



Trimming Equipment : Versatile-DT300

·High performance and compact size, high resolution visual alignment and on-site measurement
·Flexible process and adaptability to multiple products
·Fully automatic transmission and high performance cleaning



Ion Implantation Equipment : iPUMA-LE

·Horizontal ion beam gradient technology, configurable for various process technologies
·Dual-filtering technology by magnet and electric field
·Leading domestic level of beam tuning for ion implantation



Wet Process Equipment : HSC-S3810

·Integrated design, smaller footprint, high throughput
·Pull-out chamber design, convenient operation and maintenance
·Non-Pattern damage by advanced atomization clean technology, real-time, high precision parameters closed-loop control technology

ANJI 安集微电子科技(上海)股份有限公司
ANJI MICROELECTRONICS TECHNOLOGY (SHANGHAI) CO., LTD.

COMPANY VISION AND MISSION

Since its establishment in 2004, the vision and mission of ANJI have been clearly defined. For more than twenty years, through all the years, the original aspiration has remained as unwavering as a rock, consistent from beginning and end.
ANJI is committed to becoming an emerging semiconductor materials enterprise based on its technological innovation as well as intellectual property rights. It is deeply engaged in the research and development, production and sales of high-growth and high-performance materials, adheres to the market strategy of "Based in China and Serving the World", and achieves long-term, stable and healthy development.

CORE COMPETENCE

R&D CAPABILITIES

- Independent intellectual property rights technology platform
- Efficient transformation of research and development achievements
- World-class equipments and facilities

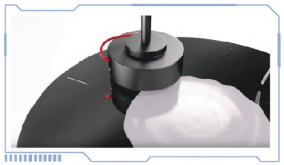
HIGH QUALITY DELIVERY

- Capacity guarantee of three major manufacturing bases
- Buildup of an independent upstream and downstream supply chain
- Guarantee of high-quality product delivery

TEAM STRENGTH

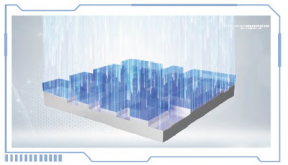
- International team mindset
- Global diversified talents
- Deeply rooted corporate culture sustainability

SOLUTIONS



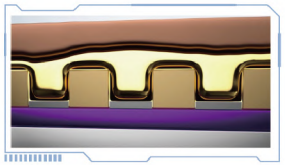
CHEMICAL MECHANICAL POLISHING SLURRY

Product matrix with full coverage



FUNCTIONAL ELECTRONIC WET CHEMICALS

Multi-product line layout of leading technology nodes



VIRGIN MAKEUP SOLUTION (VMS) AND ADDITIVES

Enhancement of strategic supply of the high-end ECP (Electro-chemical Plating) product series



Qnity™

Powering the next leap in electronics

This November 2025, DuPont intends to separate* Qnity, its Electronics Business, into an independent, publicly traded company in the advanced electronics industry, becoming one of the largest pureplay electronic solutions partners across the semiconductor value chain, empowering AI, high performance computing, and advanced connectivity.

From groundbreaking solutions for semiconductor chip manufacturing, to enabling high-speed transmission within complex electronic systems, Qnity's high-performance materials and integration expertise make tomorrow's technologies possible.

Learn more about Qnity

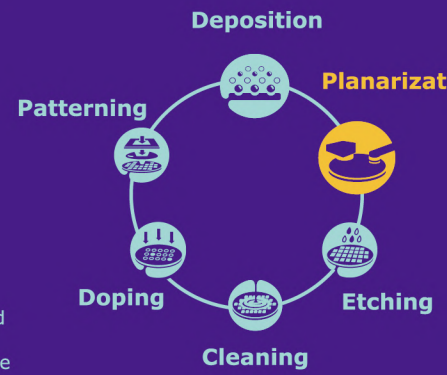
*The intended separation of Qnity Electronics, Inc., targeted for completion on November 1, 2025, is subject to satisfaction of customary conditions, including final approval by DuPont's Board of Directors, receipt of tax opinion from counsel, the completion and effectiveness of a Form 10 registration statement with the U.S. Securities and Exchange Commission, applicable regulatory approvals and satisfactory completion of financing.

Qnity™, the Qnity Node Logo, and all trademarks denoted with ™ or ® are owned by affiliates of Qnity Electronics, Inc. unless otherwise noted.

MERCK 默克

ADVANCING PLANARIZATION:

Innovative products for optimal wafer surface results



Merck is a global leading player in **chemical mechanical planarization technology,** committed to providing new solutions quickly with high-performance materials for optimal wafer surface results

DISCOVER OUR BROAD RANGE OF SOLUTIONS

- Advanced & Emerging Dielectric Slurries
- Advanced Packaging Slurries
- Copper & Barrier Slurries
- Tungsten Slurries
- Post CMP (pCMP) Cleans
- Si Wafer Polishing Slurries

For more information, please scan the QR code.

The Electronics business of Merck operates as EMD Electronics in the U.S. and in Canada.

HUBEI DINGLONG CO.,LTD.


Dinglong Wuhan Headquarters

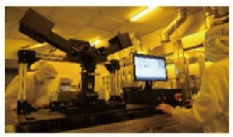
Hubei Dinglong Co., Ltd. (Stock Code: 300054.SZ), founded in 2000 and listed on the ChiNext Board in 2010, has long been dedicated to the R&D and production of cutting-edge materials within key strategic material sectors.As a leading enterprise in this field, the company consistently prioritizes technological innovation as its core development engine.


➢ Dinglong (Qianjiang) Optoelectronic Semiconductor Industrial Park


➢ Dinglong (Xiantao) Optoelectronic Semiconductor Industrial Park


➢ CMP Evaluation Laboratory


➢ Slurry Production Workshop


➢ ArF/KrF Laboratory


➢ Temporary Bonding Platform


➢ Advanced Packaging Materials Laboratory


➢ Coating Laboratory

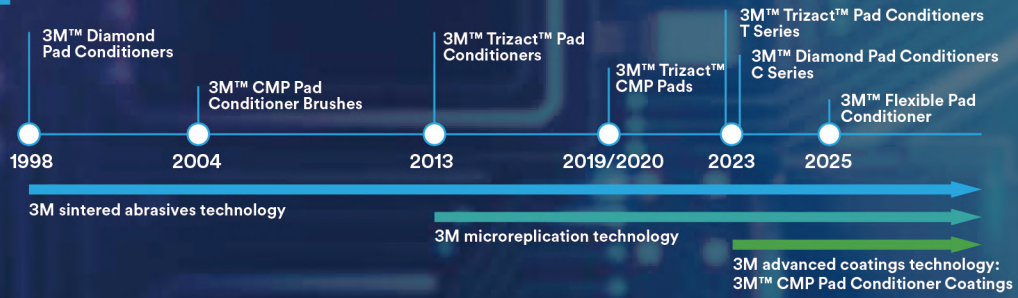
Leveraging a highly capable R&D team and sustained, intensive investment in innovation, Dinglong has successfully developed a series of proprietary high-tech products across strategic domains including integrated circuit design, semiconductor process materials, semiconductor display materials, and printing & copying consumables. These breakthroughs have overcome multiple technical barriers in critical core materials, achieving significant advancements in cutting-edge materials.

Since its listing, Dinglong has fully harnessed the empowerment of the capital market, accelerating its industrial ecosystem layout and technological iteration through a dual-drive model combining in-house R&D incubation with capital operations. Today, Dinglong has evolved into a National Technology Innovation Demonstration Enterprise, a National Intellectual Property Demonstration Enterprise, an MIIT Manufacturing Single Champion (Demonstration) Enterprise, and a leading platform-based enterprise driving material innovation, integrating multi-industry synergy and multi-domain layout.

鼎龙控股 DINGLONG

3M Science. Applied to Life.™

Our Legacy of Innovation



NEW PRODUCTS


3M™ Diamond Pad Conditioner C Series


3M™ Trizact™ Pad Conditioner T Series


3M™ Flexible Pad Conditioner


3M™ Trizact™ CMP Pad

Our Technology Platform

Leveraging 40+ technology platforms to create not just products – but solutions to your toughest challenges

Key 3M technologies for semiconductor solutions

Materials			Processes			Digital	Capabilities			Applications	
Ab Abrasives											En Energy Management
Ad Adhesives	Fi Films									Ac Acoustic Management	Fe Flexible Electronics
Ce Ceramics	Mm Metamaterials						Ms Modeling & Simulation	An Analytical Science	Is Interface & Surface Sciences	Ct Climate Technology	Fs Filtration & Separations
Cm Circular Materials	Nt Nano-technology	Ps Polymer Science	Am Additive Manufacturing	Mr Micro-replication	Pp Polymer Processes	Cv Computer Vision	Ro Advanced Robotics	As Automation Solutions	Pr Process Design & Control	Di Display Components	Lm Light Management
Co Advanced Composites	Nw Nonwovens	Rm Release Materials	Ch Chemical Processing	Pc Precision Coating & Web Processes	Rp Radiation Processing	Ds Data Science & Analytics	Se Sensors	Cp Converting & Packaging	Sd Sustainable Design	Ec Energy Components	Mf Mechanical Fasteners
Em Electronic Materials	Pm Performance Materials	Sm Specialty Materials	Mo Molding	Pd Particle & Dispersion Processes	Vp Vapor Processes	Es Electronic Systems	Ss Software Solutions	In Inspection & Measurement	We Accelerated Weathering	Eg Engineered Graphics	Tm Thermal Management

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Generating a New Wave, Designing a New World



The Ebara Group develops technology to create waves of innovation in the water, air, electronics and energy sectors. In ever-changing times, we have harnessed this technology to support industry, public infrastructure, and our evolving information society.

We will continue to generate the innovation our world needs as the pace of change accelerates, driven by our core passion for benefiting people and society.

"Wave" describes the unbroken stream of innovation from Ebara and the new value it brings to society.
"World" signals our global engagement in all the places where life exists.
"Design" represents our vision for the future, and our commitment to realizing that future.

Waves of innovation. Global engagement. Design with a vision.
These are the tools the Ebara Group brings to building a joyful, fulfilling, more promising future.



Building Service & Industrial Company

Supporting the stable supply of water, air and heat through a range of products and services, such as pumps and blowers



Energy Company

Delivering the best solutions for the energy sector, including oil, gas, electricity, and hydrogen



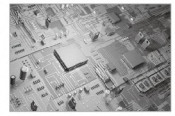
Infrastructure Company

Offering solutions to address challenges like safe water supply, agricultural irrigation, and flood control



Environmental Solutions Company

Supporting a hygienic urban environment and a resource recycling future through the design and management of waste treatment plants



Precision Machinery Company

Providing world-class solutions in manufacturing processes and sub-fab areas that support the miniaturization and advancement of semiconductors



New Businesses

Supporting the creation of a sustainable society with EBARA technologies in hydrogen, aerospace, land-based aquaculture, and cultured meat

EBARA CORPORATION

【Head Office】
11-1, Haneda Asahi-cho, Ota-ku, Tokyo 144-8510, Japan

【website】
https://www.ebara.com/en/

Surface technologies for a better world

ADVANCED NANOSURFACE TECHNOLOGIES (SHENZHEN) CO., LTD.

Company Profile



Advanced NanoSurface Technologies (Shenzhen) Co., Ltd. was established in early 2019 as a high-tech enterprise specializing in the research, development, production, and sales of critical and scarce new materials for integrated circuits. Guided by the values of perseverance, dedication, and accountability, the company is committed to independent R&D and large-scale production, striving to deliver the highest-quality polishing and surface technology solutions to global customers.

Products



IC Slurries

Poly-Si

Precision planarization for polysilicon layers in MOSFET and FinFET transistors, offering high selectivity and superior topography control.

ILD

Colloid silica-based slurries for high planarization efficiency and low defectivity, and ceria-based slurries for high removal rate, ensuring smooth and uniform surfaces.

STI

STI CMP slurries with engineered ceria particles provide high silicon oxide-to-silicon nitride selectivity, minimize dishing and reduce defects for high-quality shallow trench isolation polishing.

Tungsten

Tungsten CMP slurry offers optimized removal rates and high selectivity to dielectric layers, minimizing dishing/erosion for precision polishing of tungsten plugs and interconnects.

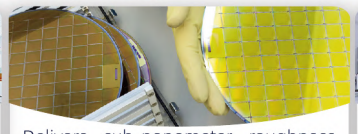
Substrate Slurries

Silicon



A complete suite for silicon wafering—from high-speed stock removal to ultra-pure final polishing for unmatched flatness.

Silicon Carbide



Delivers sub-nanometer roughness (<0.2 nm Ra) with minimal subsurface damage for 4H/6H-SiC power and RF wafers.

Lithium Niobate Lithium Tantalate



Specialized solutions for piezoelectric crystals, enabling high removal efficiency and ultra-low surface damage.



Ultraprecision Slurries

Ultraprecision Slurries

Alumina and silica sol slurries for ultraprecision polishing of metals and ceramics, offering high removal rates, post-polishing roughness below 10 nm, and high gloss.

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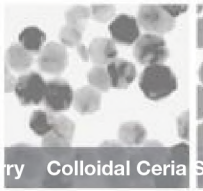
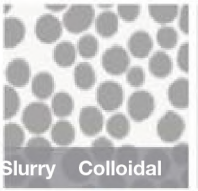
KCTECH YOUR DEPENDABLE GLOBAL PARTNER

Supplier of Choice to the World's Top Semiconductor

In the world of technology, things rarely stand still for long. Our customers are always looking for innovation and seeking new technologies that will help them deliver next-generation products, in tern, for their customers. That's why so many leading brands already trust us. During this time, we've established many long-standing partnerships in Asia. And we'll now take the same winning approach as we enter the next phase of our journey into Europe and North America. Find out more here about our sustainable business philosophy, award-winning technologies and proven performance record.

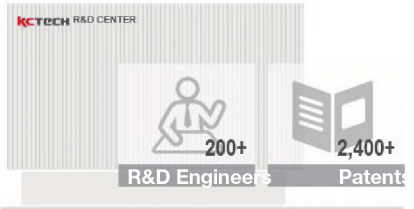
High Performance in Semiconductor Industries

Our track record in advanced semiconductor equipments and materials speaks for itself. We're the global top supplier of high yield, low scratch, defectivity, low dishing slurry and high throughput CMP equipment.

Slurry	 Calcined Ceria Slurry	 Colloidal Ceria Slurry	 Colloidal	Global Top Ceria Slurry Supplier: Worldwide
CMP and Cleaning Equipment	 CMP	 Batch Cleaner	 Single Cleaner	#3 CMP Equipment Supplier: Worldwide

Aggressive R&D Investment and Strategic IP Management

Our focus on technology R&D underpins everything we do. Investing 10% of sales into R&D annually allows us to advance our technology and build a stronger IP profile. Backed by our experienced team of in-house lawyers and patent attorneys, it's only once a patent is verified that we take R&D to the second stage.



10% of sales invested in R&D annually

IP Management

- Experienced team of in-house lawyers and patent attorneys
- Second stage R&D only after patent verification



Join Entegris at ICPT 2025 to explore how we are driving innovation in CMP process control—one particle, one sensor, one breakthrough at a time.

Our experts will be sharing exciting research and innovations through a series of poster presentations designed to give attendees actionable insights they can immediately use to improve their own processes.

New Development of Fine Particle (FPC) Control Developments for CMP Slurry Defect Reduction
- Henry Cheng, Senior Engineer/Scientist, CMP R&D

From Lab to Fab: The Art and Science of Capturing the Uncatchable in CMP Filtration
- Jason Fu, Sr. Applications Development Engineer, Microcontamination Control Division

CMP Slurry and Hydrogen Peroxide Concentration Monitoring Using Multiple Online Index of Refraction Sensors
- Mark Bumiller, Principal, Field Applications, Fluid Management (presented by Ray Wang, Sr. Applications Engineer, Fluid Management)

Or contact us to learn about our new CMP solutions:

- Silicon slurries
- Pads
- Filters
- Cleans
- CMP solutions for silicon carbide
- Process monitoring

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