

ICPT 2022 Program

Monday, September 26

Time	Title	Presenter / Lead Author
5:00 PM	Registration	
5:00 PM	Informal Welcome Gathering	
7:00 PM	End of General Session	

Tuesday, September 27

Time	Title	Presenter / Lead Author
7:00 AM	Registration	
7:00 AM	Breakfast Buffet	
8:00 AM	Opening Remarks	Robert Rhoades & Jeffrey McKinnis (ICPT Co-Chairs)
8:05 AM	Keynote: Advancements in CMP Over the Years	Matt Prince (Intel Corp)
	Session A	Session chair: Patrick Ong
8:40 AM	CMP Challenges for Buried Power Rail Integration	Kevin Vandermissen (IMEC)
9:00 AM	HVM CMP Process Development for Advanced Direct Bond Interconnect (DBI)	Catharina Rudolph (Fraunhofer IZM ASSID)
9:20 AM	Pad Surface Micro-Structure as Driver for Oxide Removal, Case Study for 3D-Printed Polishing Pads	Aurore Bonnevaillle (ST Microelectronics)
9:40 AM	A Hybrid Chemical Mechanical Planarization (CMP) Model for Time-Dependent, Spatial Material Removal Rate Optimization	Tom Rothe (Fraunhofer ENAS)
10:00 AM	Morning Break	
	Session B	Session chair: Sanha Kim
10:20 AM	Evaluation of Design Dependency in STI-CMP for Layout Diversification	Conrad Guhl (Fraunhofer IPMS-CNT)
10:40 AM	Copper Metal Loss in Nanometer Fine Features During Chemical-Mechanical Planarization	Raghuveer Patlolla (IBM Research)
11:00 AM	Effect of Brush Cleaning on Post CMP Defects	Hong Jin Kim (GlobalFoundries)
11:20 AM	Analysis of Corrosion Inhibitor Effects in Cu CMP Based on AFM Measurements	Jinhyoung Lee (Sungkyunkwan University)
11:40 AM	A New Method for Characterizing CMP's Localized Removal Laws Using a Die-Scale Modeling Approach with Measured Surfaces	Brian Salazar (University of California Berkeley)
12:00 PM	Lunch	
	Session C	Session chair: Arthur Chen
1:15 PM	Invited: Novel Applications of Machine Learning and Modelling in CMP Process Control to Minimize CMP Process Marginalities	John Matovu (OCT ADT)
1:40 PM	Measuring Large Particle Contaminants in Cerium Oxide CMP Slurries with Total Holographic Characterization	Laura Philips (Spheryx Inc)
2:00 PM	Development for Molybdenum CMP Slurry	Shogo Onishi (Fujimi Corp)
2:20 PM	CMP Slurry for Epoxy Mold Compound in Advanced Packaging	C. Noda (Showa Denka Materials Co)
2:40 PM	Future Technology Roadmap for CMP Conditioning Disk	Yongsik Moon (EHWA Diamond)
3:00 PM	Afternoon break	
	Session D	Session chair: Don Frye
3:20 PM	CMP Removal Rate and Profile Prediction via Deep Learning-Based Algorithm for Robust Process Design	Seungjun Lee (Samsung Electronics Co)
3:40 PM	Visualization of Sub-50nm Particle Detachment from Silica Glass Substrate during Enforcing Megasonic by Evanescent Field	Yutaka Terayama (Kyushu Institute of Technology)
4:00 PM	Chemical Mechanical Polishing Mechanism of Silicon Nitride Surface: Effect of Tribochemical Oxidation	Hitomi Takahashi (Hitachi Ltd)
4:20 PM	Application of Hydrogen-Reduction to Improve Ceria Slurry Performance on Chemical Mechanical Polishing Process	Jaewon Lee (Sungkyunkwan University)
4:45 PM	POSTER SESSION 1 and Reception	
P1	Optimization of Within-Die Planarity and Defectivity for Chemical-mechanical Planarization	Wei-Tsu Tseng (IBM Research)
P2	Membrane Process Development for Small Particle Removal in CMP Slurry and Post-CMP Cleaning	SanHyeon Park (Sungkyunkwan University)
P3	Fabrication and Characterization of Fixed-Nano-Abrasive Polishing Pads using Vertically Aligned Carbon Nanotubes	Sukkyung Kang (KAIST)
P4	Nozzle Hardware for Slurry Reduction During CMP	Anand Iyer (Applied Materials Inc)
P5	Electrochemical investigations on the corrosion and inhibition during W post-CMP cleaning	Ranjith Punathil Meethal (Hanyang University)
P6	Effect of corrosion inhibitors on chemical mechanical planarization of molybdenum	Chan-Hee Lee (Hanyang University)
P7	Molybdenum Post-CMP Cleaning Formulation with Good Metal Compatibility	Pei Huang (DuPont Electronics)
P8	Wafer edge planarization after wafer bonding	Andreas Kruger (IHP Microelectronics)
P9	Characterizing the Tribological, Thermal and Kinetic Attributes of Non-Selective Tungsten "Buff" CMP Slurries in Conjunction with Pads	Sana Ma (EMD Electronics)
P10	Development of Eddy Current Sensor for End-point Detection in sub-Micron scale during Cu CMP	Hyunmo An (Sungkyunkwan University)
P11	Evaluation of the Strength of Glycerol's Adsorption on Metal Surface by Novel Dynamic LSV System	Keiji Takashige (Sakamoto Yakuhin Kogyo Co)
P12	Mechanism of metal ions adsorption on PVA brush during post CMP cleaning	Jerome Peter (Hanyang University)
P13	Ti/Cu CMP Process for Better Topography Control in Advanced 3D Packaging	Seock-Cheul Choi (Hanyang University)
P14	Tunable "Soft" Cleaning Chemistries for Enhanced Cu Organic Residue Removal	Abigail Dudek (Lewis University)
P15	Effect of radial grooved pads on copper chemical mechanical polishing	Chulwoo Bae (Sungkyunkwan University)
P16	Unraveling the Slurry/Substrate Interfacial Reaction Mechanism for Wide Band Gap (WBG) Chemical Mechanical Planarization (CMP)	Kiana Cahue (Lewis University)
P17	Dynamic Electrochemical Measurement System for Fundamental CMP Study	Hideaki Nishizawa (Doi Laboratory Inc)
P18	Low-k Oxide CMP Process Development for Subtractive Metal Interconnect	Anand Iyer (Applied Materials Inc)
P19	Nodule contact trajectory analysis of PVA roller brushes on a rotating plate	Shota Suzuki (Shizuoka University)
P20	Total Solutions for Silicon Carbide Substrate Polishing	Yun Lung Ho (Ferro Corp)
P21	Evaluation of Polishing Performance by CMP Pad with Bi-layered Asperities	Hyun Jun Ryu (KAIST)
P22	Methodology Between Theoretical Modeling and Experimental Trials for Depth Filter Media of Micro/Nano Particles in Slurry	Henry Wang (Entegris)
P23	The using of a coating thickness gauge to get information about the polishing pad profile	Andreas Kruger (IHP Microelectronics)
P24	Thermal Effects of SPM Solution for Polished SiO2 film and Adsorbed Ceria Nano-particles on Single Wafer Cleaning	Youngki Ahn (Sungkyunkwan University)
6:00 PM	End of General Session	

ICPT 2022 Program

Wednesday, September 28

Time	Title	Presenter / Lead Author
7:00 AM	Breakfast Buffet	
	Session E: Clarkson University CAMP	Session chair: JiHoon Seo
8:00 AM	Clarkson Welcome	
8:05 AM	Invited: Technology and Challenges of Chemical Mechanical Planarization	Jongheun Lim (Intel Corp)
8:30 AM	Invited: Understanding Molybdenum Films - Challenges for Molybdenum Post CMP Cleaning Formulations	Daniela White (Entegris Corp)
8:55 AM	Invited: Challenges and Opportunities for CMP in Future Devices	Ji-Chul Yang (Ebara Corp)
9:20 AM	Invited: Pad Designs - to Navigate the Fundamentals of CMP	Sunghoon Lee (Smart Pad Inc)
9:45 AM	Morning Break	
10:00 AM	Invited: Tribo-Electroanalytical Evaluation of CMP Slurries and Post-CMP Cleaning Solutions	Dipanker Roy (Clarkson University)
10:25 AM	Invited: Exploring Chemically Activated p-CMP Cleaning for the Development of "Low Stress" Processes	Jason Keleher (Lewis University)
10:50 AM	Invited: The Underlying Reason for High Operating Profit Margin in Semiconductor Industry	Seiichi Kondo (Showa Denko)
11:15 AM	Invited: Non-Contact Post CMP Megasonic Cleaning of Cobalt Wafers	Ahmed Busnaina (Northeastern University)
11:40 AM	ICPT Achievement Awards	
12:00 PM	Lunch	
1:00PM	Introduction of ICPT 2023	Organizing team for ICPT 2023
	Session F	Session chair: Bradley Wood
1:15 PM	Invited: Study on the Reactive Nano Carbon Fine Particles for SiC-CMP	Keisuke Suzuki (Kyushu Institute of Technology)
1:40 PM	Do You Know What Your Retaining Ring and Wafer are Doing?	Len Borucki (AraC Inc)
2:00 PM	Advanced SiC CMP for High Volume Manufacturing of Power Devices	John Givens (Applied Materials Inc)
2:20 PM	The Effect of Surfactants on Ceria Particle Removal in the Buff Clean Process and NPM Based Cleaning Solution for Post-CMP Cleaning	Yingjie Wang (Fudan University)
2:40 PM	Experimental Investigation on Modified Preston Model by Utilizing Stop Polishing Method	Takumi Sato (Chuo University)
3:00 PM	Afternoon break	
	Session G	Session chair: Paul Feeney
3:20 PM	State Estimation of CMP Process Using Model-Based Simulation	Kodai Hirano (Chuo University)
3:40 PM	Analytical Approaches to Clarify Mechanism and Improve Performance of Ceria Slurry Clean	Kan Takeshita (Mitsubishi Chemical Corp)
4:00 PM	The Investigation of Ceria-PAA Interactions during STI CMP Process Leading to Brush Loading Issues	Muskan (Hanyang University)
4:20 PM	Visualization of Slurry Particle Behavior Using Evanescent Field during Chemical Mechanical Polishing	Michio Uneda (Kanazawa Institute of Technology)
4:45 PM	POSTER SESSION 2 and Reception	
P25	Towards Understanding Smaller Ceria Particles (<10 nm) for SiO2 Removal Rates during Chemical Mechanical Polishing	Ravitej Venkataswamy (Clarkson University)
P26	Wafer Bevel Edge Engineering: Edge Cleaning and Bonding Applications	Salma Bensalem (Ebara Precision Machinery)
P27	Wafer Planarization: A Front Side Approach	Chirantha Rodrigo (Applied Materials Inc)
P28	A Study on Novel Conditioning Method for CMP Pad	Jangwon Seo (SKC Solmics)
P29	Chemical Mechanical Planarization for IGBT Trench Gate Array	Ming Ouyang (CRRR Corp)
P30	The Mechanical Effect of Soft Pad on Copper Chemical Mechanical Planarization	Seunghwan Lee (Sungkyunkwan University)
P31	Slurry Delivery Systems Defining Incoming CMP Slurry Density and Achieving Target Process Concentration Driven by Inline Metrology Unify CMP Engineers	Karl Urquhart (Diversified Fluid Solutions)
P32	Study on force analysis for elastomer pad by single diamond tool	Le Nam Quoc Huy (National Taiwan University of Science and Technology)
P33	Structural Characterization and Manipulation of Porous PVA Brush for High-Efficient Wafer Surface Cleaning	Somin Shin (KAIST)
P34	Effect of skin layer of PVA brush on static and dynamic contact area during post CMP cleaning	Mir Jalal Khan (Hanyang University)
P35	Holographic Characterization of KMnO4 based CMP slurries for SiC polishing	Fook Chiong Cheong (Spheryx Inc)
P36	A Machine Learning-Based Approach for Quality Control of Chemical Mechanical Planarization Process	Navnidhi Upadhyay (EMD Electronics)
P37	Effects of H2O2 and Glycine on WIWNU of TiN Chemical Mechanical Polishing under Weakly Alkaline Conditions	Yuanshen Cheng (Hebei University of Technology)
P38	Environmentally benign Cu Chemical Mechanical Planarization slurries aided by amino acids	Hoang Tran Thi Thuy (Clarkson University)
P39	Evaluation of Additives for Enhanced Particle Removal from SiC Under Megasonic Conditions	Mantas Miliauskas (Lewis University)
P40	Post-CMP Cleaning Formulation with Superior W, Cu, and Co Compatibility	Peter Sun (DuPont Electronics)
P41	Wafer bow and impact on CMP	Brian Zhang (Applied Materials Inc)
P42	Mechanochemically Enhanced Selective Material Removal during poly-Si CMP by Nanocontact-induced Dissolution	Eungchul Kim (Sungkyunkwan University)
P43	Achieving Wide Selectivity Window by Additive Interactions of Ceria Slurry Formulation for Diverse STI Processes	Yang-Yao Lee (Ferro Corp)
P44	The material removal and surface generation mechanism in ultra-precision grinding of silicon wafers	Hongfei Tao (Tsinghua University)
P45	Chemical Mechanical Planarization (CMP) of thick Cu films for emissive arrays on GaN/InGaN micro-light emitting diodes	Dongshan Yu (Applied Materials Inc)
P46	Investigation of W CMP Process for High Planarity	Seokjun Hong (Samsung Electronics Co)
P47	Novel CMP Filtration Technology Application for Critical Size Particle Removal	Chloe Chen (Entegris)
P48	Available for late news submission	
6:00 PM	Transport to Banquet	Provided by ICPT
6:30 PM	CONFERENCE BANQUET	Portland Spirit
8:30 PM	Return to Conference Hotel	Provided by ICPT
9:00 PM	End of Day	

ICPT 2022 Program**Thursday, September 29**

Time	Title	Presenter / Lead Author
7:00 AM	Breakfast Buffet	
8:00 AM	Keynote: History of CMP at Applied Materials: 1995-Present	Fritz Redeker (Applied Materials Inc)
	Session H	Session chair: Yuchun Wang
8:35 AM	Innovations in Integrated Metrology	Ovadia Ilgayev (Nova Ltd)
8:55 AM	Machine Learning Versus Physics-Based CMP Modeling for Emerging Technologies	Ruben Ghulghazaryan (Siemens Industry Software)
9:15 AM	Die-Scale Nanotopography Characterization: New Insight	Viorel Balan (CEA-Leti)
9:35 AM	Modeling Edge-Over-Erosion for Advanced CMP Processes	Davit Pilibosyan (Siemens Industry Software)
9:55 AM	Morning Break	
	Session I	Session chair: Catharina Rudolph
10:15 AM	Automatic Analysis of CMP Dishing in Via Arrays from AFM Images	Jan Langer (Fraunhofer ENAS)
10:35 AM	Next Generation Particle Detection in CMP Slurries	Rashid Mavliev (Mavlipa LLC)
10:55 AM	Critical Feature Size of Polishing Pad and Its Performance	Mary McGahay (Smart Pad Inc)
11:15 AM	Effect of Colloidal Silica and Copper Ions on PVA Brush Contamination during Post-Cu CMP Cleaning	Sanjay Bisht (Hanyang University)
11:35 AM	Holistic Approach To Clean Process Optimization for High Throughput CMP Applications	Katrina Mikhaylichenko (Applied Materials)
11:55 AM	Student Paper Awards	Robert Rhoades & Jeffrey McKinnis (ICPT Co-Chairs)
12:05 PM	Closing Remarks	Robert Rhoades & Jeffrey McKinnis (ICPT Co-Chairs)
12:10 PM	Box Lunch	
1:00 PM	End of General Session	
1:15 PM	Optional Winery Tour	