ICPT 2010 Technical Program Schedule

Sunday, November 14, 2010

Time	Event	Authors
5:00 p.m.	**Registration**	
5:00 p.m.	**Welcome Reception (5:00 p.m.-8:00 p.m.)**	

Monday, November 15, 2010

Time	Event	Authors
7:30 a.m.	**Registration**	
8:30 a.m.	**Welcome Remarks**	
8:40 a.m.	**Keynote: Challenges of Manufacturing**	Ann Kelleher, Intel Corp.
Modeling and Fundamentals I (Session Chairs: T. Kim and Y. Moon)		
9:20 a.m.	Defect Reduction in Cu Chemical-Mechanical Polishing	T. Eusner, N. Saka, J.-H. Chun, MIT; P. Fischer, D. Hooper, M. Moinpour, Intel Corp.
9:40 a.m.	Tribological, Thermal and Kinetic Studies of Ti and TiN CMP	R. Duyos Mateo, X. Gu, T. Nemoto, Tohoku University; Y. Zhuang, Z. Han, Y. Sampurno, A. Philipossian, The University of Arizona and Araca Inc.; T. Ohmi, Tohoku University
10:00 a.m.	Study on Wafer and Polishing Pad Surface Contact with Stationary and Dynamic Behavior	K. Kimura, Panart Khajornrungruang, Eiichiro Okamoto, Kyushu Institute of Technology
10:20 a.m.	**Break and Exhibits**	
10:40 a.m.	**Invited: Interactions Between Ultra-Low-k Dielectric Films And CMP Consumables**	S.S. Papa Rao, IBM Research
11:10 a.m.	A Model to Describe Correlation Between CMP Consumables and CMP Process	A. Tregub, G.S. Kim, P. Fischer, Intel Corp.
11:30 a.m.	Effect of Retaining Ring Slot Design and Polishing on Slurry Flow Dynamics at Bow Wave	X. Liao, The University of Arizona; Y. Sampurno, The University of Arizona and Araca, Inc.; A. Rice, The University of Arizona; F. Sudargho, Araca Inc.; Y. Zhuang, A. Philipossian, The University of Arizona and Araca, Inc.; C. Wargo, Entegris, Inc.
11:50 a.m.	Effect of Nonionic Surfactant in Alkaline Slurry for Polycrystalline Ge2Sb2Te5 Chemical Mechanical Polishing	J-Y. Cho, Hanyang University; S. Kim, J. Lee, G. Kim, K. Hong, S. Park, Hynix Semiconductor, Inc.
12:10 p.m.	**Lunch and Exhibits**	
Back End Applications I (Session Chairs: J. Lee and A. Chen)		
2:00 p.m.	**Invited: Cu Gap-Fill Improvement by Reducing Step Height and Aspect Ratio Using New Tungsten Slurry**	J. Koh, Hynix Semiconductor
2:30 p.m.	Performance Optimization of Barrier CMP Stopping in ULK	D. Canaperi, IBM; C. Mills, Cabot Microelectronics; S.S Papa Rao, IBM; C.W. Nam, P. Singh, P. Feeney, Cabot Microelectronics
2:50 p.m.	Development of Direct-polish process on Non-porous Ultra Low-k Dielectric Cu Interconnects for 22 nm Generation and Beyond	X. Gu, T.Nemoto, Y.Tomita, A.Teramoto, S.Kuroki, S.Sugawa, T.Ohmi, Tohoku University
3:10 p.m.	Cu Line Corrosion Caused by Electro Potential Difference Due to Different Density Pattern Connection	K. Okutani, Consortium for Advanced Semiconductor Materials and Related Technologies (CASMAT)
3:30 p.m.	An Integrated Low Cost Solution for High Performance Copper CMP Applications	L. Lu, Epoch Material; M. Yeh, Cabot Microelectronics; L. Hou, V. Liu, Epoch Material; F. Sun, K. Wu, C. Spiro; Cabot Microelectronics
3:50 p.m.	**Break and Exhibits**	
Emerging and Non-Traditional Applications I (Session Chairs: J. Lee and A. Chen)		
4:10 p.m.	CMP of Ge for High Mobility Channels	P. Ong, L. Witters, L.H.A. Leunissen, IMEC
4:30 p.m.	Oxide CMP Steps in the Integration of Vertical Si Nanowire TunnelFET Devices	K. Devriendt, P. Ong, W. Lee, R. Rooyackers, A. Vandooren, S. De Gendt, L. Leunissen, IMEC
4:50 p.m.	Chemical Mechanical Planarization of Mesoporous Silicon Layer	F. Le Quéré, F. Gaillard, F. Nemouchi, M. Rivoire, T. Billon, CEA LETI
5:10 p.m.	**Posters and Exhibits**	
6:00 p.m.	**End of Day**	

Tuesday, November 16, 2010

Time	Title	Authors
7:30 a.m.	**Registration**	
Cleans and Metrology (Session Chairs: M. Moinpour and J. Park)		
8:30 a.m.	**Invited: The Fundamental Studies on the Micro-Scratches during CMP**	H.J. Kim, Samsung
9:00 a.m.	Zeta Potential and Chemical Mechanical Planarization	P. Sides, R. Rock, S. Shekhar, Carnegie Mellon University; M. Moinpour, A. Tregub, D. Hooper, M. Buehler, Intel Corp.
9:20 a.m.	Scheme of New Pad Surface Measurement in Chemical Mechanical Polishing with Full-field Optical Coherence Tomography	S. Jung, D. Yang, Western Digitial; W.J. Choi, B.H. Lee, Gwangju Institute of Science and Technology
9:40 a.m.	Investigation of Wafer Haze defect for CMP	C. Cheng, Dow Chemical; L. Yang, W. Peterson, KLA-Tencor; S.N. Peng, S.C. Chen, Dow Chemical; D. Hu, K. Sun, KLA-Tencor; S.H. Wu, W-C. Yu, Dow ChemicalS. Lin, KLA-Tencor
10:00 a.m.	Acoustic Emission Signal Characterization for Micro-Scratch Detection During CMP	J.M. Chien, D.A. Dornfeld, U.C. Berkeley
10:20 a.m.	**Break and Exhibits**	
Emerging and Non-Traditional Applications II (Session Chairs: M. Moinpour and J. Park)		
10:40 a.m.	Chemical Mechanical Polishing for Formation of Top Electrode in Spin-Transfer Torque Magnetoresistance Random Access Memory	H. Cui, H.S. Hwang, J.H. Lim, J.Y. Cho, J.H. Park, J.G. Park, Hanyang University
11:00 a.m.	Large Sealed Cavity Structures Fabricated Using CMP and Direct Wafer Bonding	T. Pfau, R. Rhoades, Entrepix, Inc.; R. Danzl, Medtronic, Inc.
11:20 a.m.	Cu/Si/SiO_2 Selectivity Control with Ceria Based Slurry	M. Suzuki, Y. Kon, A. Hayashi
11:40 a.m.	Self Alignment Using High Dishing in TSV Cu CMP	H. Jeong, M. Jeong, Pusan National University
12:00 p.m.	Chemical Mechanical Planarization of PRAM Films in Damascene Structures	V. Balan, G. Denoyelle, M. Cordeau, V. Sousa, M. Rivoire
12:20 p.m.	**Lunch and Exhibits**	
Modeling and Fundamentals II (Session Chairs: K. Kimura and G. Zwicker)		
2:00 p.m.	Corrosion Mechanism of Polycrystalline $Ge2Sb_2Te_5$ in Strong Acidic Environment with Hydrogen Peroxide	J.Y.Cho, H. Cui, H.S. Hwang, J.H. Lim, J.H. Park, H.S. Park, J.G. Park, Hanyang University
2:20 p.m.	CMP Chip Scale Model Extension for Improved Description of Long Range Interaction	S. Bott, Fraunhofer CNT; R. Rzehak, Dresden University of Technology; B. Vasilev, P. Kücher, Fraunhofer CNT; J.W. Bartha, Dresden University of Technology
2:40 p.m.	Dependance of CMP Pad Asperity Wear on the Morphology and Concentration of the Abrasive Particles in the Polishing Slurries	A. Reddy, A.S. Lawing, G.S. Koons, Y. Guo, Z. Liu, Dow Electronic Materials
3:00 p.m.	Experimental and Simulation Evaluation of the Abrasive Particle Size During CMP Process for its Effect on Micro Scratch	J. Yang, Samsung Semiconductor; H. Kim, T. Kim, C. Lee, Sungkyunkwan Univ.ersity; H. Lee, Samsung Semiconductor
3:20 p.m.	WID Model of CMP Process	G. Kim, M. Prince, L. Jiang, K. Knutson, Intel Corp.
3:40 p.m.	**Break and Exhibits**	
Front End Applications (Session Chairs: K. Kimura and G. Zwicker)		
4:00 p.m.	**Invited: Front-end CMP Challenges for Future Technology Nodes**	M. Prince, Intel Corp.
4:30 p.m.	**Invited: Development of a Poly Open CMP Process for Replacement Gate Applications**	K. DeVriendt, IMEC
4:50 p.m.	Development of Aluminum Chemical Mechanical Planarization for Advanced Metal Gate Application	T. Du, F. Saeki, K. Tamai, H. Asano, M. Kubo, Fujimi, Inc.
5:10 p.m.	**Posters and Exhibits**	
6:00 p.m.	**End of Day**	

Wednesday, November 17, 2010		
7:30 a.m.	**Registration**	
Back End Applications II (Session Chair: P. Feeney and M. Rivoire)		
8:30 a.m.	**Invited: Effects of Scaling on CMP Process Control and Implications for Consumables Design**	L. Cook, Dow Chemical
9:00 a.m.	Study of Dendrite Defects in 45nm BEOL CMP Processes	A. Natarajan, A. Ticknor, D. Steber, F. Baumann, G. Yocum, IBM
9:20 a.m.	Mitigation of Post CMP Metal Resistance Variation in Advanced Cu Technologies	A. Kiesel, B. Reinhold, F. Mauersberger, J. Schlott, J. Groschopf, Globalfoundries Fab 1 Module 1
9:40 a.m.	New Particles Morphologies for Barrier CMP Below 32 nm	F. Nemouchi,CEA-LEti-Minatec; O. Robin, ST Microelectronics Crolles; F. Gaillard, CEA-LEti-Minatec; C. Gillot, V.-I Raman, BASF SE; C. Euvrard, CEA-LEti-Minatec; M. Mellier, ST Microelectronics Crolles; Y. Li, BASF SE; O. Hinsinger, M. Rivoire, ST Microelectronics Crolles
10:00 a.m.	**Break**	
10:20 a.m.	**Invited: CMP Process for Next Generation Interconnects**	S. Kondo, Renesas
10:50 a.m.	Study of Cu Surface Microroughness after CMP Processing for 22nm and Beyond	T. Hirano, Y. Ishiyama, H. Asano, S. Tamada, K. Tamai, H. Morinaga, Fujimi, Inc.
11:10 a.m.	Effect of Pad Surface Texture in ILD CMP with Silica Slurry	S. Li, G. Gaudet, F. Sun, A. Naman, Cabot Microelectronics, Corporation
11:40 a.m.	**Closing Remarks**	
1:30 p.m.	**Optional Tours**	

ICPT 2010 Poster Session Schedule

Monday, November 15, 2010-Tuesday, November 16, 2010
Session Chairs: C. Wargo and D. Slutz

Modeling and Fundamentals		
P1	Mechanistic CMP Model Predicting Post CMP Technology	S. Choi, A. de Closset, F. M. Doyle, D. A. Dornfeld, University of California, Berkeley
P2	Impact of Reduction in CeO_2 Slurry Consumption for Oxide CMP - Approach from Alternative Slurries and Pad Groove Patterns	S. Kurokawa, T. Doi, T. Yamazaki, Y. Umezaki, O. Osamu, Y. Matsukawa, Kyushu University; Y. Yamaguchi, Mitsui Mining & Smelting Co., Ltd.; Y. Kawase, Mitsubishi Chemical Corp.
P3	Oxide Slurry Recovery System	JD van der Steen, Ascent-tec
P4	Dynamic Structural Analysis of CMP Process Using ALE Method	N. Suzuki, Y. Hashimoto, R. Hino, E. Shamoto, Nagoya University
P5	Mechanics Modeling of Nanotopography Effects on CMP	P. Vukkadala, J.K. Sinha, KLA-Tencor; K.T. Turner, University of Wisconsin
P6	Factrial Analysis of Friction Energy for Material Removal Rate Improvement in CMP Processing	K. Tamai, Fujimi Incorporated
P7	Effects of CMP Slurry Chemistry on Isoelectric Point of Alumina Particles	N. Brahma, J. Talbot, University of California, San Diego
P8	Advancements in Urethane Polishing Pads	W. Allison, A. Simpson, D. Scott, NexPlanar, Corporation
P9	Non-Ohmic Wafer-Level Modeling of Electrochemical-Mechanical Planarization (ECMP)	W. Fan, J. Johnson, D. S. Boning, Massachusetts Institute of Technology
P10	The Study of Asymmetry of Erosion in W CMP	J. Kim, Byoungho Kwon, Hoyoung Kim, Samsung Electronics Co., Ltd.
P11	Effect of Self Assembled Monolayer (SAM) Precursors on Prevention of Slurry Residues on Conditioner Surfaces	D.C. Kim, I.K. Kim, T.Y. Kwon, H.Y. Son, J.G. Park, Hanyang University; J. Kim, Y.I. Choi, M.S. Park, Shinhan Diamond Industrial Co., Ltd.
P12	The Evaluation of Ceria based Slurries for its Particle Size Distribution during Filtration Process	D.H. Lim, J.C. Yang, SAMSUNG Electronics; S.J. Jang, H.J. Kim, Sungkyunkwan University; J.H. Won, T.S. Kim, SAMSUNG Electronics; H.D. Lee, SAMSUNG Electronics
P13	Experimental Study on a Novel TPU Pad for Copper CMP	C. Chen, C-T. Hsueh, National Taiwan University of Science and Technology
P14	Effect of Pad Surface with Micro-hole Pattern on Defect Generation	H. Kim, Sungkyunkwan University; J.C. Yang, Samsung Electronics; T. Kim, K.J. Kim, Sungkyunkwan University
P15	Effect of Diamond Conditioner Design on Scratches During Oxide CMP	H.Y. Son, T.Y. Kwon, I.K. Kim, D.C. Kim, J.G. Park, Hanyang University; J. Kim, Y.I. Choi, M.S. Park, Shinhan Diamond Industrial Co., Ltd.
P16	Investigation of Frictional Force,Removal Rate and Active and Aggressive Diamond Evolution during ILD CMP	P. Ojerholm, J.H Lee, S.Y. Yoon, EHWA Diamond Ind., Co,. Ltd.
P17	Construction and Utilization of a Double Asymptote First Order ODE for Process Modeling and Prediction of SIF CMP Processes	I. McDaniel, Micron Technology
Back End Applications		
P18	Optimization of Process Variables and Slurry to improve Sheet Resistance Variation in Cu CMP	J. Kim, J.H. Jing, K. S. Han, H.P. Kim, S H. Kwak, G. A. Jin, S.H. Pyi, B. S. Lee, J.W. Kim, J.S. Roh, S.K. Park, HYNIX Semiconductor
P19	Effect of H_20_2 Concentration on Hydrophilicty of Cu Surface	J. Lin, C. Poutasse, T. Hirano, Fujimi Corporation
P20	Diamond Pad Conditioner Design and Performance in Copper CMP	J. Zabasajja, Doug Pysher, Tammy Engfer, 3M
P21	Copper Barrier CMP Slurry for 22nm and Beyond	J. Schlueter, R. Pearlstein, K. Murella, T. Shi,
P22	Study on Low Polishing Rate Selectivity of 2nd step for Compensation of Cu Dishing during 1st Step Cu CMP Process	J.H Lim, H.S Hwang, H. Cui, J.H Park, J.G Park, Hanyang University
P23	Prevention of Low-k Delamination During Cu/Low-k Chemical Mechanical Planarization	J-H. Han, B-M. Yoon, K-H. Kim, Y-S. Sun Koh, C-J. Kang, SAMSUNG

Emerging and Non-Traditional Applications		
P24	One Step Polishing Slurry for Cu-TSV Process	H. Nishizawa, J. H. Park, A. Isobe, Nitta-Haas Inc.
P25	Chemical Mechanical Polishing (CMP) of Silicon Carbide (SiC) with Manganese Oxide Slurry-Polishing Characteristics Under High Pressure Gas Atmospheres Inside the Bell-jar (Chamber) Type CMP Machine	T. Hasegawa, T. K. Doi, S. Kurokawa, O. Ohnishi, T. Yamazaki, Kyushu University; Y. Kawase, Mitsubishi Chemical Corporation; Y. Yamaguchi, Mitsui Mining & Smelting Co., Ltd.; S. Kishii, Fujitsu Laboratories Ltd.
P26	Deep Trench Isolation Poly CMP for High Voltage Semiconductor Devices	G. Davis, Binghua Hu, Texas Instruments
P27	Emerging CMP-Based Processes for 3D Integration and Bonded Wafer Applications	D. Trojan, Axus Technology
P28	Improvement of Adhesion Strength for Reliable CMP of Ru by ADL Process	Y. K. Lee, W. K. Shin, H. J. Lee, Y. C. Guo, J. H. Bae, Y. J. Seo, H. D. Jeong, Pusan National University
Cleans and Metrology		
P29	Characteristics of COB Thin-Film on Copper Post CMP Surface	A. Otake, P. R. Bernatis, DuPont Electronics & Communications
P30	A New Method for Determining the Size Distribution of Particles in CMP Slurries	H.G. Van Schooneveld, M.R. Litchy, D.C. Grant, CT Associates, Inc.
P31	Formulation of Alkaline Cleaning Solution for Post Cu-CMP Cleaning	I-K. Kim, T-Y. Kim, J-G. Park, N. Yerriboina, Hanyang University
P32	Detection of Large Sized Foreign Materials in CMP Slurry and Reduction of Micro-scratches(‡U)	T. Funakoshi, S.Ojima, Nomura Micro Science Co., Ltd.; S.Kurokawa, T.Doi, O.Ohnishi, Y.Umezaki, Y.Matsukawa; Kyushu University
P33	Development of Evaluation Method for Geometric Characterization of Polishing Pad Surface Texture Based on Contact Image Analysis Using Image Rotation Prism - Relationship between Proposed Evaluation Parameters and Polishing Characteristics	M. Uneda, K. Okabe, Kanazawa Institute of Technology; N. Moriya, K. Shibuya, Fujikoshi Machinery Corp; K. Ishikawa, Kanazawa Institute of Technology
Front End Applications		
P34	Development of new STI Process for Lower Defectivity and Better Planarity	M. Noda, T. Yamanaka, T. Konno, JSR Corporation; L.M. Charns, JSR Micro, M.F. Lofaro, J.E. Cummings, J.W. Nalaskowski, L. Hupka, IBM Thomas J. Watson Research Center
P35	Effect of NH_4OH Concentration on Polishing Performance and Slurry Stability for Final Polishing Process	H.S Hwang, H. Cui, J.H Lim, J.H. Park, E.S Choi, J.W Ahn, J.G Park, Hanyang University
P36	Role of the Polishing Pad in Achieving Tunable Removal Rate Selectivities of Polysilicon, Silicon Dioxide and Silicon Nitride Films	Naresh K. Penta, P. R. Veera Dandu, S. V. Babu, Clarkson University