

## AGENDA – Revised 8/3/09

### Symposium on Chemical-Mechanical Planarization August 9-12, 2009 Crown Plaza Resort

#### Sunday, August 9:

- 12:00 - 5:00 P.M. Hotel Check-in and CAMP Registration
- 5:30 - 7:30 P.M. Cocktail Reception being held in Adirondack Great Room, (No formal dinner provided)

#### Monday, August 10:

7:00 - 8:00 A.M. Breakfast – MacKenzie's

#### MEETING HELD IN GRAND VIEW B

8:10 A.M. **S.V. Babu: Opening Remarks**

#### Session I

- 8:15 A.M. Scaling of Critical Wiring and Implications for Barrier CMP  
-- Lee Cook, Dow Electronic Materials
- 8:45 A.M. How Much Do We Really Know About the Chemical Reactions During Copper CMP? -- Mario Brands & Yuzhuo Li, BASF USA
- 9:10 A.M. Tailoring the Integrity of Hybrid Interfaces: A Nanomolecular Approach  
-- G. Ramanath, RPI
- 9:35 A.M. BASF Soft Particles for Metal CMP – Vijay Raman, Mario Brands, Ilshat Gubaydullin, Yongqing Lan, and Yuzhuo Li, BASF, SE
- 10:00 A.M. Coffee Break

#### Session II

- 10:30 A.M. Novel Techniques for High Resolution Mapping of Mechanical and Adhesive Properties of Polishing Pads – Igor Sokolov, Clarkson
- 10:55 A.M. Measurement of Numbers of Scratches on Oxide Surfaces and its Application to Consumable Evaluations, Jin-Goo Park, Hanyang University
- 11:20 A.M. Micro Scratch Defect Reduction in 45 nm and 65nm Technologies  
-- A. Natarajan, A. Ticknor, T. Houghton, J. Salfelder<sup>1</sup>, V. McGahay, R. Werner, G. Advocate, A. Ross and M. Lagus, IBM, East Fishkill
- 11:45 A.M. Study of Polishing and Scratch Characteristics of Ceria Abrasives -- Ji Chul Yang, Samsung Electronics & Sungkyunkwan University, and Taesung Kim, Sungkyunkwan University
- 12:10 P.M. Lunch – MacKenzie's

**Monday, August 10 continued:**

**Session III**

- 3:45 P.M. Experimental Studies of the Interaction Between Ultra Low-k Dielectric Films, CMP Slurries & Down-Stream Processes -- Satyavolu Papa Rao, IBM, T.J. Watson Research Center
- 4:10 P.M. Pattern Dependent Localized Corrosion in 22nm Cu/Low-k Integration -- Jihong Choi, Advanced Process Development, NY, Global Foundries
- 4.35 P.M. Liner CMP on Porous ULK BEOL Dielectrics: A Reality or a Dream? -- Stephen Gates, IBM, T.J. Watson Research Center

[5:00 – 7:00 P.M. Poster Session/ Open Bar – Grand View A](#)

- 7:00 P.M. Dinner – Olympic Room
- After Dinner Speaker:

**Tuesday, August 11:**

- 7:00 - 8:00 A.M. Breakfast – MacKenzie's

**Session IV**

- 8:10 A.M. Measurement of Slurry Abrasive Size Distribution Using Scanning Mobility Particle Sizer (SMPS) -- Hojoong Kim, Ji Chul Yang, and [Taesung Kim](#), Sungkyunkwan University
- 8:40 A.M. The Wafer Profile Effects on CMP Performance -- Masahiro Ota, Tokyo Metropolitan University; Toshikazu Nomura, and Manabu Tsujimura, Ebara
- 9:05 A.M. Conditioner Design Optimization and customization for various types of CMP Pads -- Taewook Hwang, Tony Wu, and Rama Vedantham, Saint-Gobain Abrasives
- 9:30 A.M. Optimized Pad Conditioning for HSS STI CMP -- David E. Slutz, Morgan Advanced Ceramics
- 9:55 A.M. Coffee Break

**Session V**

- 10:25 A.M. New Developments in CMP Consumables Characterization -- Rakesh Singh, Entegris
- 10:50 A.M. Balancing Technical and Business Challenges in CMP R&D -- Rob Rhoades, Entrepix
- 11:15 A.M. Chemo-Mechanical Connection to Optics Polishing -- Jessica DeGroote Nelson (Optimax)
- 11:40 A.M. Importance of Non-DLVO Interactions in CMP and Post-CMP Cleaning -- Jakub Nalaskowski, IBM, T.J. Watson Research Center
- 12:05 P.M. Lunch – MacKenzie's

**Tuesday, August 11, continued:**

**Session VI**

- 3:30 P.M. The Origin and Mechanics of Large Pad-Wafer Contact Areas -- L. Borucki, Y. Sampurno, Y. Zhuang, and A. Philipossian, Araca Incorporated
- 3:55 P.M. Challenges in FinFET device integration - An overview -- V. S. Basker, J. Faltermeier, T. Standaert, H. Adhikari, H. Jagannathan, J. Wang, J. Cummings, S. Schmitz, S. Kanakasabapathy, H. Bu, V. Paruchuri, B.Doris, IBM
- 4:20 P.M. Integration Challenges for 22 nm Technology Node and Beyond -- Bala Haran, IBM Albany Nanotechnology
- 4:45 P.M. Evaluation of Multiple Approaches for CMP of CU/Ru Contacts, for 32/22 nm Technology Nodes -- Donald F. Canaperi, IBM, Albany
- 5:10 P.M. CMP of Novel Materials – Patrick Ong, IMEC
- 6:15 - 7:00 P.M. Reception at Lake Placid Club
- 7:00 P.M. Dinner at Lake Placid Club

**Wednesday, August 12:**

- 7:00 - 8:00 A.M. Breakfast – MacKenzie's

**Session VII**

- 8:15 A.M. **Len Borucki: Pads in all their glory**
- Basic structural and bulk thermo-mechanical properties of commonly used commercial hard pads.
  - Surface water absorption due to extended soaking.
  - Pad surface mechanical response to loading and unloading.
  - Characterization of pad surfaces with white light interferometry vs. confocal microscopy; surface height probability density functions,; pad summits and their characteristics.
  - Pad/wafer contact area measurement.
  - The effect of conditioning on contact area.
  - Contact mixed lubrication during polishing.
- 9:15 A.M. **Goodarz Ahmadi: Overview of Models for Chemical Mechanical Planarization**
- Mechanical wear model for interactions between pad, wafer and abrasives for surface removal during chemical mechanical polishing.
  - Effects of abrasive size distribution, surface softening, particle adhesion and surface plastic deformation on CMP.
  - Effect of surface hardness, down pressure and relative velocity on polishing rate.
  - Effects of slurry concentrations and pH on removal rate.
  - Effect of abrasives size on removal rate.
- 10:15 A.M. **S.V. Babu: Slurry options and impact on some defects for Cu, barrier and dielectric planarization**
- 11:15 A.M. Closing Remarks, S.V. Babu, CAMP