DPS2018 Timetable

November 13

40th Anniversary Program

Registration

Opening Remark (K. Ishikawa),
Nishizawa Award, DPS Paper Award, Best Presentation Award, and Young Award Ceremony (M. Hori)

Nishizawa Award Lectures

Presentation by Ad Hoc Committee for 40th Anniversary Project
T. Iwase (Hitachi, Ltd.), H. Suzuki (Nagoya Univ.), T. Tsutsumi (Nagoya Univ.)

Lunch
11:30-12:50 (80min)

Opening directed by D. Ogawa (Chubu Univ.), and W. Takeuchi (Aichi Institute of Technology)

<Invited> 40th Anniversary Plenary Lecture

13:00 – 14:00 Atsuyoshi Koike (SanDisk and Western Digital Technologies, Inc.)
"Advanced Semiconductor Manufacturing – Intelligent Fab Systems and Smart Equipment"

14:00 – 14:30 Richard van de Sanden (DIFFER / The Eindhoven University)
"Renewable energy driven non-equilibrium chemistry: plasma chemistry as the special case"

14:30 – 15:00 Hitoshi Wakabayashi (Tokyo Institute of Technology)
"Benchmark on Advanced Logic Devices and Predictive Discussion on Future LSIs"

15:00 – 15:30 Kanako Harada (JST / The University of Tokyo)
"Bionic Humanoids: current research and future vision"

15:30 – 16:00 Takayuki Morikawa (Nagoya University)
"Mobility Services with Autonomous Cars in Nagoya University COI Project"

Break **30min**

Panel Discussion

Panelists: A. Koike, R. van de Sanden, H. Wakabayashi, K. Harada, T. Morikawa, K. Koga (Kyushu Univ.), K. Shinoda (Hitachi), and M. Omura (Toshiba memory)
Moderator: K. Ishikawa (Nagoya Univ.)

Banquet **19:00-21:00**

Venue : Sir Winston Hotel (at Yagoto)

*The bus will depart to Banquet venue from DPS2018 venue at 18:30.

November 14

Registration

Opening Remark (M. Fukasawa)

Keynote <Invited>
Richard Gottscho (Lam Research Corp.)
"Rethinking the Art of Etch"

B-1 <Invited>
Gottlieb S. Oehrlein (University of Maryland)
"Materials Etching Selectivity in Plasma-Based Fluorocarbon Atomic Layer Etching (ALE)"

Break **20min**

B-2 <Invited>
Emilie Despiau-Pujo (University of Grenoble Alpes)
"Plasma solutions for atomic-precision etching: From atomistic simulations to experiments"

B-3 S. Kumakura (Tokyo Electron Miyagi Ltd.)
"A new method for high selective etching of Si3N4 and SiC with ion modification and chemical removal"

B-4 N. Toyoda (Univ. of Hyogo)
"Atomic layer etching by gas cluster ion beams with acetylacetone"

B-5 M. Hasegawa (Nagoya Univ.)
"In situ analysis of ion-irradiated and chlorinated GaN surface during cyclic etching processes"

Lunch **13:00-14:20 (80min)**

C-1 T. Ohmori (Hitachi, Ltd.)
"Etching Profile Optimization Utilizing Etch Rate Database and Machine Learning"

C-2 T. Tillocher (GREMI – Univ. of Orleans – CNRS)
"Low-k material cryoetch using high boiling point organic compounds to reduce plasma induced damage"

C-3 P. Nicolas (CEA LETI-Minatec)
"Highly selective etching of silicon nitride to silicon using cyclic etch plasma process for 3D CMOS devices"

C-4 S. Morikita (Tokyo Electron Miyagi Ltd.)
"Improvement of Local CD Uniformity for EUV Photoresist by Deposition/Trim Cyclic Process"

C-5 G. Antoun (GREMI, Orléans Univ.-CNRS)
"The role of SiF4 physisorption in the cryogenic etching process of silicon"

C-6 L. Hsu (Lam Research Corp.)
"Source and Drain Silicon Recess Etch Technology for Raised SNC Landing Pad Manufacturing in Capacitor Memory Cell"

Break **20min**

D-1 <Invited>
Yasuhiro Morikawa (ULVAC Inc.)
"Plasma Dry Process Technology for Fan-out SiP"

D-2 N. Inoue (Yokohama National Univ.)
"Fabrication of a high-density emitter array for electrospray thrusters using field emitter array process"

E-1 Y. Mizukawa (Hiroshima Univ.)
"Visualization of Temperature Field in Molten Silicon Formed by Atmospheric Pressure Thermal Plasma Jet Irradiation"

E-2 K. Nakane (Nagoya Univ.)
"Effects of synchronized DC bias on densities of charged species in pulsed plasmas of fluorocarbon gases"

Happy Poster ! **18:20-20:00**

Session B
Control of surface reactions in atomic-precision plasma processing (ALE)

Session C
Etching Technologies

Session D
Plasma Processes for New Applications

Session E
Plasma Diagnostics & Monitoring

November 15

Registration

F-1 <Invited>
Silvia Armini (imec)
"Area-selective deposition by surface engineering for applications in nanoelectronics. From blanket to confined dimensions"

F-2 <Invited>
Gert Leusink (Tokyo Electron U.S. Holdings, Inc.)
"Area Selective Processes for Advanced Devices: Challenges and Opportunities"

F-3 W.M.M. Kessels (Eindhoven Univ. of Technology)
"Ion Energy Characteristics during Plasma-Enhanced Atomic Layer Deposition and their Role in Tailoring Material Properties"

Poster **100min**

Core-time (1) 11:10 - 12:00 † Odd number
Core-time (2) 12:00 - 12:50 ‡ Even number

Lunch **12:50-13:50 (60min)**

G-1 <Invited>
Nathan Marchack (IBM Corp.)
"Towards Atomic Layer Etching of Metal Nitride Films: Understanding the Impact of Plasma Etch Parameters on Cyclic Etch Performance"

G-2 A. H. Basher (Osaka Univ.)
"The mechanism of hexafluoroacetylacetone (HFAC) interaction with Ni and NiO surfaces in atomic layer etching (ALE) of magnetic films by organic molecules "

Break **20min**

H-1 <Invited>
Sangwuk Park (Samsung Electronics Co., Ltd.)
"Etching challenges in extremely high-aspect-ratio (HAR) features"

H-2 M. Omura (Toshiba Memory Corp.)
"Formation Mechanism of Sidewall Striation in High-Aspect-Ratio Hole Etching"

H-3 T. Iwase (Hitachi Ltd.)
"Deposition Profile of Ammonium Bromide in High-Aspect-Ratio Structure for Multilayer Etching"

Break **10min**

I-1 T. Kuyama (Kyoto Univ.)
"Effects of Microwave Annealing on the Recovery of Microscopic Defects in Silicon Nitride Films"

I-2 T. Hamano (Kyoto Univ.)
"Comparative characterization of gas species dependence of transient behaviors in plasma-induced Si damage"

J-1 N. Kuboi (Sony Semiconductor Solutions Corp.)
"Insights of different etching properties between CW and ALE processes using 3D voxel-slab model"

J-2 Y. Yoshikawa (Kyoto Univ.)
"First-principles study on electronic structure modifications of Si substrate with the Cl-terminated surface"

Closing Remark (M. Terahara)

Session F
Control of surface reactions in atomic-precision plasma processing (ALD)

Session G
Plasma Processes for New Material Devices

Session H
Etching challenges in extremely high-aspect-ratio (HAR) features (AR > 100)

Session I
Plasma-induced damage

Session J
Modeling and Simulation