

2026 9th International Workshop on Low Temperature Bonding for 3D Integration

May 13, Wednesday

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12:00	REGISTRATION			
13:00	Surface Activated Bonding (I)	130-01	(OPENING REMARKS) [Keynote] Tadatomo Suga, Meisei University, Recent Progress in Surface Activated Bonding for 3D and Heterogenous Integration	Chairs: Naoteru Shigekawa Mark Goorsky
13:25		130-02	[invite] Fuchao Liu, iSABers Group Co., Ltd., From Wafer Bonding to Production Lines: Industrializing Semiconductor Compound Substrates	
13:50		130-03	[invite] Jieqiong Zhang, Hubei Jiufengshan Laboratory, Research on heterogeneous bonding of compound semiconductors and the interface characterization	
14:15		130-04	Florent Cassouret, Institute for Molecular Science, Room temperature bonding of Cr:LiSAF and sapphire: interface analysis and thermal properties	
14:30		130-05	Peter Kerepesi, EV Group, Xenon vs Argon Ion Activation for Room-Temperature Wafer Bonding of Si and SiC	
14:45	BREAK			
15:05	Surface Activated Bonding (II)	130-06	[keynote] Xinhua Wang, Institute of Microelectronics of Chinese Academy of Sciences, Application of surface activated bonding technology in heterogeneous integration of wide bandgap semiconductors	Chairs: Karine Abadie Hideki Takagi
15:45		130-07	[invite] Hongxing Wang, Xi'an Jiaotong University, Room-Temperature Bonding of LiTaO3/Si and LiNbO3/Diamond	
16:10		130-08	Xiangjie Xing, Institute of Microelectronics of Chinese Academy of Sciences, Characterization of the Space-Charge Region at Surface-Activated-Bonded Si/SiC Interfaces by Electrostatic Force Microscopy	
16:25		130-09	Yutaka Ohno, Tohoku University, In-situ high-temperature scanning transmission electron microscopy of GaN/Si interface fabricated by surface activated bonding	
16:40	BREAK			
17:00	Hybrid Bonding and 3D Integration(I)	130-10	[invite] Zhe Cheng, Peking University, Thermal resistance of interfaces in hybrid bonding process	Chairs: Ryo Takigawa Fumihiko Inoue
17:25		130-11	[invite] Hemanth Kumar Cheemalamarri, Applied Materials, Surface Engineering Innovations for Low Thermal Budget Hybrid Bonding in HBM Applications.	
17:50		130-12	Ryohei Nakata, Panasonic holdings corporation, Influence of Deposition N2 Flow on SiCN Surface Chemical Bonding States in SiCN/SiCN Hybrid Bonding	
18:05	Reception			

May 14, Thursday

9:30	New process for 3D integration	140-01	[Invite] Jun Mizuno, National Cheng Kung University, Trends and Research in Advanced Heterogeneous Integration□	Chairs: Chieh Chen Yutaka Ohno
9:55		140-02	Tetsu Yonezawa, Hokkaido University, Low-Temperature Sintering and Bonding Performance of Copper Nanoparticles for Power Device Packaging	
10:10		140-03	Junsha Wang, Meisei University, Low-temperature Cu/Cu Wafer Bonding via SAB Combined with Sequential Plasma Activation	
10:25		140-04	Miyuki Uomoto, Tohoku University, Atomic Diffusion Bonding of Wafers in Air Using Single-Sided Film Deposition	
10:40	<i>BREAK</i>			
11:00	Hydrophilic and Fusion bonding	140-05	Yun-Hsuan Chen, National Yang Ming Chiao Tung University, Influence of Plasma Chemistry on Oxide Surfaces for Room Temperature Bonding	Chairs: Jun Mizuno Takehito Shimatsu
11:15		140-06	Akihiro Shimizu, Ushio Inc., Correlation between VUV-induced Silanol Formation on SiO ₂ Analyzed by ToF SIMS and Hybrid Bonding Strength	
11:30		140-07	Hyuga Ishii, Yokohama National University, Edge-Void Morphology in Wafer-to-Wafer Fusion Bonding	
11:45		140-08	Takashi Matsumae, National Institute of Advanced Industrial Science and Technology, High temperature bonding of diamond/Si substrate for warpage reduction	
12:00	<i>LUNCH</i>			
13:30	<i>Short presentation for poster</i>			<i>Chair:</i> Takashi Matsumae
14:45	<i>Poster Session</i>			
15:45	<i>BREAK</i>			
16:05	Device Applications	140-09	[Invite] Shinji Matsuo, NTT, Membrane III-V Photonic Devices on Si Using Direct Bonding Technology	Chairs: Takunori Taira Minoru Sasaki
16:30		140-10	[Invite] Heng Wu, Peking University, Crucial technology of transistor stacking to extend Moore's law into sub-1nm region	
16:55		140-11	[invite] Simon Bleiker, KTH, Heterogeneous transfer bonding for wafer-level MEMS integration	
17:20		140-12	[invite] Roy Knechtel, Schmalkalden, Wafer Bonding in MEMS Technologies/Anodic Wafer Bonding: Method and Applications	
17:45	<i>Banquet</i>			

May 15, Friday

9:30	<i>Fundamental of wafer bonding(I)</i>	150-01	[Keynote] Mark Goorsky, UCLA, Materials Integration of Ultra-wide Bandgap and Piezoelectric Thin Films	Chairs: Jenn-Ming Song Eiji Higurashi
10:10		150-02	Takehito Shimatsu, Tohoku University, Atomic Diffusion Bonding of Wafers Using Single-Sided Oxide Film Deposition	
10:25		150-03	Szuyu Huang, SHW Technology Co., Ltd, Backside Plasma Activation via Lift-Pin Architecture for High-Integrity Wafer Bonding	
10:40	<i>BREAK</i>			
11:00	<i>Fundamental of wafer bonding(II)</i>	150-04	[Keynote] Karine Abadie, CEA leti , Impact of amorphous layer in covalent bonding mechanisms	Chairs: Chuan-Sen Tan Kai Takeuchi
11:40		150-05	[invite] Nathan Ip, TEL USA, Bond Wave Propagation Mechanics Modeling in Hybrid Bonding Processes	
12:05		150-06	Xu Chen, Hubei Jiufengshan Laboratory, Characterization of Twist and Tilt Misalignments in Wafer Bonding: A Universal Electron Diffraction Approach	
12:20	<i>LUNCH</i>			
13:30	<i>Hybrid Bonding and 3D Integration(II)</i>	150-07	[invite] Oh Minho, KOKUSAI ELECTRIC CORPORATION, Fusion bonding using ALD-Al ₂ O ₃ thin films for 3D integration	Chairs: Hemanth Kumar Cheemalamarr Wang Junsha
13:55		150-08	[invite] Jenn-Ming Song, National Chung Hsing University, Light Enhanced Direct Metal Bonding for Advanced Electronic Assembly	
14:20		150-09	[invite] Chuan-Sen Tan, Nanyang univ., Enabling Functional Diversity with Heterogeneous Integration	
14:45		150-10	[Invite] Chih Chen, National Yang Ming Chiao Tung University, Effect of Cu Microstructures on the Thermal Expansion of Cu pads in SiO ₂ vias for 3D IC Heterogeneous Integration	
15:10	<i>SHORT BREAK</i>			
15:15	<i>Closing Session</i>			

Poster Session

14P-01	Takashi Matsumae	National Institute of Advanced Industrial Science and Technology	Structural Analysis of Warpage in Composite Wafers Considering Vacuum Chucking	Fundamentals and Characterization
14P-02	Shinya Taki	Tohoku University	Atomic Diffusion Bonding of Wafers using W films in Relation to Initial Film Growth	
14P-03	Pin Lin Chen	National Yang Ming Chiao Tung University	Effect of Temperature Ramping Rate on Thermal Expansion of Nanocrystalline Cu pads in Fine-Pitch SiO ₂ Vias for 3D IC Hybrid Bonding	
14P-04	Keishiro Iida	Toyota Technological Institute	Patterning trenches with vertical sidewalls	Hybrid Bonding and Related Technologies
14P-05	Yihao Meng	Institute of Microelectronics of the Chinese Academy of Sciences	SiCN-SiCN Bonding Enabled by NaOH Activation	
14P-06	Masaaki Tsukamoto	Samco Inc.	Si/SiC Direct Bonding at 200 °C using Water Vapor Plasma with Low Interfacial Thermal Resistance	Hydrophilic and Plasma-assisted Bonding
14P-07	Takashi Matsumae	National Institute of Advanced Industrial Science and Technology	Ga ₂ O ₃ Layer Transfer on SiC Substrate by Hydrophilic Bonding and Ion-Cut Technology	
14P-08	Yufei Bai	Harbin Institute of Technology	Low-temperature direct Ru–Ru bonding enabled by ternary synergistic plasma surface activation	Metal Bonding for High-density Interconnect
14P-09	Yoshiyuki Kawamoto	National Institute of Advanced Industrial Science and Technology	Accelerated Impedance Testing of Parylene-C Based Neural Electrodes for High-Density Chip Integration	
14P-10	Lichao Wu	Hubei Jiefengshan Laboratory	Investigation on the Low-Temperature Direct Bonding of Lithium Titanate Wafer to Different Substrates	New Applications of Low-temperature Bonding
14P-11	Takamichi Ohara	Tohoku University	Atomic Diffusion Bonding of Wafers in Air Using Single-Sided Au film Deposition with Zr Underlayer	
14P-12	Naoki Yanagisawa	Tokyo University of Science	Silicon-Based Vapor Chamber with Jumping Droplet Structures via MEMS Technology	
14P-13	Kazuma Inoue	Osaka Metropolitan University	Effects of InGaP Interlayers on Electrical Characteristics of GaAs/GaN Junctions Fabricated Using Surface-Activated Bonding	Power, RF, Photonic, and MEMS Device Applications
14P-14	Hikaru Iwamoto	Osaka Metropolitan University	Fabrication of GaN/Diamond Templates for Advanced III-Nitride Process	
14P-15	Takashi Matsumae	National Institute of Advanced Industrial Science and Technology	Thermo-Compression Bonding of Cu/Diamond/Cu Stacks for Advanced Power Modules	
14P-16	Takuji Takahashi	The University of Tokyo	Cross-sectional Investigation by Dual Bias Modulation Electrostatic Force Microscopy on GaN/GaN Junction Fabricated by Surface-activated Bonding	Surface Activated Bonding (SAB) and its Extensions
14P-17	Junya Saito	Chiba Institute of Technology	Room-temperature GaAs//a-Si/SiC and InGaAs//a-Si/SiC bonding	
14P-18	Yoshiki Maruyama	Chiba Institute of Technology	Surface activated bonding of Si//GaN and diamond//GaN using a-Si sputtered thin films	
14P-19	Yoshiki Katoda	Kyushu University	Bond Quality in Surface Activated Room Temperature Bonding of Lithium Tantalate Wafers	