

3DIC 2024 Program Schedule

September 25-27, 2024

Conference Venue:

September 25, 2024 at Hotel Metroplitan Sendai

September 26-27, 2024 at Sendai Kakusai Hotel

as of August 20, 2024

Session Date	Location	Session	Session time	Presentation time	paper_id	Category	paper_title	Authors	Affiliations
25-Sep-24	Hotel Metroplitan Sendai	Opening Remark	13:00-13:10	13:00-13:10				T. Tanaka	Tohoku University
25-Sep-24		Keynote Talk I	13:10-13:50	13:10-13:50		Keynote		Bor-Sung Liang	MediaTeck
25-Sep-24		Keynote Talk II	13:50-14:30	13:50-14:30		Keynote	IBM NorthPole: Brain-Inspired Neural Inference Architecture Intertwining Compute with Memory	Takanori Ueda	IBM Research Tokyo
25-Sep-24		Coffee Break	14:30-14:45	14:30-14:45					
25-Sep-24		Invited Talk I	14:45-15:15	14:45-15:15		Invited	Development of Hybrid Bonding: Perspectives on Material Selection, Structural Design, and Applications (Tentative)	Kuan-Neng Chen	National Yang Ming Chiao Tung University
25-Sep-24		Invited Talk II	15:15-15:45	15:15-15:45		Invited		TBD	
25-Sep-24		Invited Talk III	15:45-16:15	15:45-16:15		Invited		TBD	
25-Sep-24		Session 1: Quantum Technology	16:15-16:45	16:15-16:45		Invited	Superconducting TSVs for quantum computers (Tentative)	Alexandra Shevsky	Fraunhofer EMFT
25-Sep-24		Invited Talk IV	16:45-17:05	16:45-17:05	4036	Lecture	Electrochemical Deposition of Indium Thin-Films for Scalable 3D Quantum Chiplets	Jowesh Avisheik Goundar, La Thi Ngoc Mai, Yugi Otake, Yuki Mori, Hideo Kosaka, Fumihiko Inoue	Yokohama National University
25-Sep-24		Session 1: Quantum Technology	17:05-17:25	17:05-17:25	4008	Lecture	3D Stacked Spin Qubit and TCAD Simulations	Tetsufumi Tanamoto	Teikyo University
25-Sep-24		Banquet	18:00-20:00	18:00-20:00					
26-Sep-24	Sendai Kokusai Hotel	Keynote Talk III	08:50-09:30	08:50-09:30		Keynote	CHIPS -NAPMP: Overview and Next Steps	George Orij	National Advanced Packaging Manufacturing Program (NAPMP)
26-Sep-24		Session 2: Process Technology for Hybrid Bonding	09:30-10:00	09:30-10:00		Invited		TBD	
26-Sep-24		Invited Talk V	10:00-10:30	10:00-10:30		Invited		TBD	
26-Sep-24		Session 2: Process Technology for Hybrid Bonding	10:00-10:30	10:00-10:30		Invited		TBD	
26-Sep-24		Invited Talk VI	10:30-10:45	10:30-10:45					
26-Sep-24		Coffee Break	10:30-10:45	10:30-10:45					
26-Sep-24		Session 2: Process Technology for Hybrid Bonding	10:45-11:05	10:45-11:05	4016	Lecture	A Temporary Bonding De-Bonding Tape with High Thermal Resistance, Easy Peeling and Excellent TTV for 3DIC	Moeki Nakano, Shigenori Nagahama, Toshio Takahashi, and Takuya Yamamoto	SEKISUI CHEMICAL CO., LTD ,
26-Sep-24		Session 2: Process Technology for Hybrid Bonding	11:05-11:25	11:05-11:25	4009	Lecture	A Novel Transfer Bonding Process with Particle Less Tapes for Die to Wafer Integration	Tomoka Kirihaata (1), Masanori Yamagishi (1), Ichiro Sano (2), Haruka Morita (2), Yusuke Fumita, Shinya Takyu	{1} LINTEC Corporation {2} TAZMO CO., LTD.
26-Sep-24		Session 2: Process Technology for Hybrid Bonding	11:25-11:45	11:25-11:45	4003	Lecture	Advanced Technology Development of Squeeze Effect Non-Contact Handling Tool for Semiconductor Chips	Hayato HISHINUMA (1), Masaaki MIYATAKE (2), Hiroshi KIKUCHI (1), Yuta TOBARI (1)	(1) Yamaha Robotics Holdings Co., Ltd. (2) (2) Tokyo University of Science
26-Sep-24		Lunch	11:45-13:00	11:45-13:00					
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4010	Poster	Antioxidative Cu Electrodeposition for 3D Interconnects with Hybrid Bonding	Ryo Aizawa (1), Masahiro Sawa (1), Jinta Nampo (1), Murugesan Mariappan (2), Takafumi Fukushima (2)	(1) JCU Corporation (2) Tohoku University
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4031	Poster	Room-Temperature and Compressive Force-Free Metal-Metal Direct Bonding for Heterogeneous Integration of Micro-LED Array on 3D-IC	Jiayi Shen, Chang Liu, Tetsu Tanaka, and Takafumi Fukushima	Tohoku University
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4037	Poster	Plasma Hydrophilic Treatment for Improved Wafer Bonding Strength via Polysilazane	Daiki Nemoto, Kai Takeuchi, Eiji Higurashi	Tohoku University
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4019	Poster	Cost-Effective Low-Temperature Hybrid Bonding Using Layer Transfer Technology	Yu-Lun Liu, Chun-Ta Li, Tzu-Han Sun, Chien-Kang Hsiung, and Kuan-Neng Chen	National Yang Ming Chiao Tung University
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4018	Poster	Characteristics of Ozone-Ethylene Radical Pretreatment for Hybrid Bonding Without Water Rinsing Processes	B. Tanaka (1), T. Shino (2), M. Murugesan (1), T. Tanaka (1), T. Fukushima (1)	(1) Tohoku University (2) MEIDEN NANOPROCESS INNOVATIONS
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4007	Poster	Detectability of Resistive Open Defects with Analog Relaxation Oscillators Under Unit-to-Unit Variations of Dies	Yuya Yamahashi (1), Yuto Ohtera (1), Hiroyuki Yotsuyanagi (1), Shyue-Kung Lu (2), Masaki Hashizume (1)	(1) Tokushima University (2) National Taiwan University of Science and Technology
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4022	Poster	Gate Driver IC for GaN Power Devices Suitable for 3D Power IC	Yusuke Ohgush (1) and Satoshi Matsumoto (1) (2)	(1) Kyushu Institute of Technology (2) Tokyo Metropolitan University
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4034	Poster	Design Enablement of Heterogenous Integration for 3DIC	Ahmed Hossam-Eldeen, Sudipta Das, Giuliano Sisto	imec
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4025	Poster	3D SRAM Design & Optimization with Open Source Memory Compiler	Sunan Chen (1), Chao Wu (2), Yuan Guan (2), Yuanqing Cheng (1)	(1) Beihang University (2) Beijing Smartchip Microelectronics Technology Co., Ltd.
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4021	Poster	Machine Learning-Based Diagnosis of Defects in Chiplet Interconnects	Junming Li , Huaguo Liang, Xianrui Dou, Le Yu , Zhengfeng Huang, Yi nochun Lu, Cuiyun Jiang	Hefei University of Technology
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4027	Poster	Creep Behavior of Low-Temperature Sn-in Solder Using Nanoindentation Test	Shunya Nitta, Hiroaki Tatsumi, Hiroshi Nishikawa	Osaka University
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4014	Poster	16-Layer 3D Stacking Based on Self-Assembly Technology for HBM Application	ZEHUA DU (1), Hiroshi Kikuchi (2), Hayato Hishinuma (2), Tetsu Tanaka (1), Takafumi Fukushima (1)	(1) Tohoku University (2) Yamaha Robotics Holdings Co. Ltd.
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4029	Poster	Temporary Adhesive Effect on Multichip Thinning for Rapid Prototyping of 3D-IC from 2D-IC Fabricated in Foundry Shuttle Services	Akihiro Tominaga, Jiayi Shen, Chang Liu, Tetsu Tanaka and Takafumi Fukushima	Tohoku University
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4038	Poster	Activation of Copper Surfaces by VUV-Redox Method Using a Xenon Excimer lamp	S. Endo, A. Shimizu	Ushio Inc.,
26-Sep-24	Poster Session Core time*	13:00-14:30	13:00-14:30	4012	Poster	Clean Dicing: an Alternative Blade Dicing Technique for Minimising Particles in 3D Heterogeneous Integration	Akito Hiro, Damien Jon Leech, Geert Schoofs, John Slabbekoorn, Alain Phommahaxay, Koen Kennes, Gerald Bever, Eric Beyne	imec	
26-Sep-24	Poster Session Core time*	13:00-14:30	13:00-14:30	4006	Poster	Impact of 2-Dimensional Materials for 3D Power IC	Ayano Furue (1), Masataka Hasegawa (2), and Satoshi Matsumoto (1) (3)	(1) Kyushu Institute of Technology (2) AirMembrane Corporation (3) Tokyo Metropolitan University	
26-Sep-24	Poster Session Core time*	13:00-14:30	13:00-14:30	4035	Poster	Thermal Flow Simulation and Measurements of 3D Si Chip Stacks with TSVs	Shuheji Yokota , Rikuu Hasegawa , Kazuki Monta, Takaaki Okidono, Takuii Miki , Makoto Nagata	Kobe University	

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26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4033	Poster	Suppression of TSV-Induced Stress by Using Negative Thermal Expansion Material	Hisashi Kino (1), Takafumi Fukushima (2), Tetsu Tanaka (2)	(1) Kyushu University (2) Tohoku University
26-Sep-24		Poster Session Core time*	13:00-14:30	13:00-14:30	4030	Poster	TSV Formation Using a Direct Cu Electroplating on Electroless Plated Barrier Layer with a Low Resistivity	Y. ISHII, T HAMAMURA, T. S HIMIZU T. ITO , and S. SHINGUBARA	Kansai University
26-Sep-24		Panel Session	14:30-15:15	14:30-15:15		Panel	CAD tools for 3DIC	Paul D. Franzon	North Carolina State University
		Coffee Break	15:15-15:30	15:15-15:30					
26-Sep-24		Session 3: Advanced Interposers Invited Talk VII	15:30-16:00	15:30-16:00		Invited	FO-PLP Technology for HPC (Tentative)	Ole Hölck	Fraunhofer IZM
26-Sep-24		Session 3: Advanced Interposers	16:00-16:20	16:00-16:20	4011	Lecture	Process Development for a Novel low-Loss Photo Imageable Dielectric in an RF Silicon Interposer Platform	Hamideh Jafarpoorchekab, Xiao Sun, Angel Uruena, Siddhartha Sinha, Nelson Pinho, Andy Miller, Nadine Collaert	imec
26-Sep-24		Session 3: Advanced Interposers	16:20-16:40	16:20-16:40	4015	Lecture	Ultra-High Density Deep Trench Capacitor (DTC) for 3DIC Integration	H.L. Cheng, J.Y. Lin, T.C. Hsu, C.Y. Peng, Felix Tsui and S.F. Huang	TSMC
26-Sep-24		Session 3: Advanced Interposers	16:40-17:00	16:40-17:00	4013	Lecture	Direct Sputtering Copper Seed Layer Formation Method on Low Dielectric Resin That Achieves Low Transmission Loss Up to 100 GHz in high-Frequency Transmission Circuit	Akihiro Shimizu (1), Kazuhiro Fukada (2), Shinichi Endo (1), Mitsunori Abe (3), Akiko Matsui (3)	(1) Ushio Inc. (2) Shibaura Machine Co. (3) NTT Devices Cross Technologies Corporation
		Coffee Break	17:00-17:10	17:00-17:10					
26-Sep-24		Session 4: Application Invited Talk VIII	17:10-17:40	17:10-17:40		Invited		TBD	
27-Sep-24	Sendai Kokusai Hotel	Session 5 Thermal Management Invited Talk X	08:50-09:20	08:50-09:20		Invited	Power, Thermal and Noise Characterization of Stacked Processors for AI Systems (Tentative)	Eren Kursun	Columbia University
27-Sep-24		Session 5: Thermal Management	09:20-09:40	09:20-09:40	4032	Lecture	A Novel Multi-Chip Cooling System Using Direct On-Chip Jet Impingement for High-Performance Interposer Packages	Akshat Patel, Tiwei Wei	Purdue University
27-Sep-24		Session 5: Thermal Management	09:40-10:00	09:40-10:00	4026	Lecture	Thermal Analysis of Reflow Process for PIC-Embedded Package Substrate with 2.3D RDL Interposer for Co-Packaged Optics	A. Noriki (1), H. Uemura (2), H. Kuwatsuka (1), N. Matsui (2), R. Motoji (2), D. Maeda (2), T. Sugita (2), F. Nakamura (1), T. Amano (1)	(1) National Institute of Advanced Industrial Science and Technology (AIST) (2) Kyocera Corporation
		Coffee Break	10:00-10:15	10:00-10:15					
27-Sep-24		Session 6: Bumpless and Hybrid Bonding Technology	10:15-10:35	10:15-10:35	4002	Lecture	Face-Down and Heterogeneous Chip Bonding Technology on Waffle Wafer for Bumpless Chip-on-Wafer (COW) Package	Yoshiaki Satake (1)(2), Tatsuya Funaki (1)(2), Wataru Doi (1)(2), Hajime Kato (2)(3), Shogo Okita (2)(3), Takayuki Ohba (2)	(1) Murata Manufacturing Co., Ltd. (2) Tokyo Institute of Technology (3) Panasonic Connect Co., Ltd.
27-Sep-24		Session 6: Bumpless and Hybrid Bonding Technology	10:35-10:55	10:35-10:55	4020	Lecture	Low-Temperature Adhesive Hybrid Bonding Technology with Novel Area-Selective Passivation Layer	Tzu-Han Sun, Yu-Lun Liu, Chun-Ta Li, Wen-Tzu Tsai, Mu-Ping Hsu, and Kuan-Neng Chen	National Yang Ming Chiao Tung University
27-Sep-24		Session 6: Bumpless and Hybrid Bonding Technology	10:55-11:15	10:55-11:15	4017	Lecture	Die-to-Wafer Hybrid Bonding Impact at mm-Wave Frequencies	Mohammad Alsukour (1) (2), Olivier Valorge (1), Margot Faure (1), Loïc Vincent (3), Victor Milon (4), Pascal Chevalier (4) Jean Daniel Arnould (2), Emmanuel Pistono (2), Christophe Dubarry (1)	(1) CEA LETI, Univ. Grenoble Alpes (2) TIMA (3) CIME, Univ. Grenoble Alpes, CNRS (4) STMicroelectronics
27-Sep-24		Session 6: Bumpless and Hybrid Bonding Technology	11:15-11:35	11:15-11:35	4028	Lecture	Impact of Cu Pad Density on Cu-CMP and Bonding Yield for Chip-to-Wafer Hybrid Bonding	M. Murugesan (1), H. Hashimoto (1), K. Mihara (2), F. Inoue (3), A. Uedono (4), T. Hare (2), T. Fukushima (1)	(1) Tohoku University (2) Toray Engineering Co. Ltd. (3) Yokohama National University (4) The University of Tsukuba
27-Sep-24		Session 6: Bumpless and Hybrid Bonding Technology	11:35-11:55	11:35-11:55	4024	Lecture	Cost-Effective Low-Temperature Hybrid Bonding Using Layer Transfer Technology	Wei Ting Chen Chih Hsien Chiu, and Jenn Ming Song	National Chung Hsing University
27-Sep-24		Award Ceremony and Closing Remark	11:55-12:10	11:55-12:10					
27-Sep-24	NanoTerasu Visit in Japanese	14:00-15:00	14:00-15:00						
27-Sep-24	NanoTerasu Visit in English	15:00-16:00	15:00-16:00						