

2017 5th International Workshop on Low Temperature Bonding for 3D Integration

LTB-3D 2017

<http://www.3dwb.org/index.html>

May 16 -18, 2017

The University of Tokyo, Ito International Research Center, Tokyo, Japan

This workshop will focus on low-temperature bonding technologies which realize novel device structure by heterogeneous material and device integration and lead to entirely new manufacturing approaches to 3D integration of semiconductor devices, photonic systems, and sensing systems. These bonding technologies have been already used for the mass production of micro devices and have potential applications in wide range of manufacturing industries.

The workshop invites papers that document new developments in low-temperature bonding technologies, including surface activated bonding (SAB), new device structures and fabrication processes, facilities and technologies for mass-production, and basic science relating to these technologies. Their impact on the paradigm shift in the semiconductor industry and information technologies along with 3D and heterogeneous integration is also of interest.

Keynote speeches by world-leading researchers will summarize, clarify and share recent technical trends and the basic science of low-temperature bonding as well as 3D and heterogeneous integration. Similarly to the preceding 1st (2007), 2nd (2010), 3rd (2012), and 4th (2104) workshops, this workshop will be held as a single-track seminar to provide comprehensive information on the latest technologies and applications, as well as business opportunities.

TOPICS:

- > **Roles of Low-temperature Bonding in 3D & Hetero-Integration**
Marketing, 3D Architectures, Efficiency for 3D Integration, Requirements and Impacts for IoT and Big Data
- > **Bonding Technologies for 3D & Hetero-Integration**
Wafer-to-Wafer Bonding, Die-to-Wafer Bonding, Cu Hybrid Bonding, Temporary Bonding & De-bonding, Adhesives for Low-Temperature Bonding,
- > **Surface Activated Bonding (SAB)**
Basic Science in Room-Temperature Bonding, Semiconductor Interface Prepared by SAB, Metal-Metal Direct Bonding, Engineered Substrates, Novel Device Structures by SAB, Opto-Electronic Applications, Silicon Photonics, Optical Sensors, Solid-State Lasers and Optical Components, Bio-medical Device Applications
- > **New Processes for Low-temperature Bonding**
Atomic Diffusion Bonding, Vapor-Assisted Surface Activation, Surface Activation by DUV Exposure, Surface Reducing Treatments by Chemicals and/or Reactive Plasma for Metal/Solder Bonding
- > **Hydrophilic & Plasma-assist Bonding and its Applications**
Oxide Fusion Bonding, Surface Modification by Plasma Treatments, Wafer-Level Hermetic Bonding, Si Photonics, Hetero-integration of Optoelectronic Systems, Nano-Micro Fluidics Application
- > **Fundamentals of Nano-bonding**
Characterization of Surface Profile for Wafer Bonding, Observation of Nano-bonding Interface Structure,
- > **SAB Tools for Volume Production**
Ultra-Precise Alignment, Large Diameter Wafer Process, High Producibility

Important date:

Manuscript Submission Deadline: **March 3, 2017**
Acceptance/Rejection Notification: **March 24, 2017**
Final Manuscript and Presentation Materials Deadline: **April 10, 2017**

Contact:

Secretariat of LTB3D-2017
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Jpn. J. Appl. Phys. (JJAP) Special Issue:

Authors of papers that are accepted and presented in LTB-3D 2017 are encouraged to submit their original papers on the significant part of their work presented at the workshop to the **Special Issue of Japanese Journal of Applied Physics (JJAP)** entitled “**Low-temperature bonding for 3D integration**”. The review process for the submitted manuscripts shall be managed by the editorial committee of the Special Issue. Note that the submitted manuscripts to the Special Issue shall be reviewed and edited based on the same standards applied for submissions to regular issues of JJAP. The special issue shall be published in February 2018. The deadline for submission is **the end of May 2017**. Details of manuscript submission shall be announced on LTB-3D website.



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