

2014 4th IEEE International Workshop on Low Temperature Bonding for 3D Integration

LTB-3D 2014

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

July 15 -16, 2014

The University of Tokyo, YAYOI Auditorium, Tokyo, Japan

This workshop will focus on low-temperature bonding technologies which will ultimately lead to entirely new manufacturing approaches to 3D and heterogeneous integration of semiconductor devices and microsystems, as well as photonic systems. These bonding technologies are starting to be used widely for the mass production of semiconductor devices and have potential applications in other manufacturing industries.

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

Keynote and invited 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 hetero-integration. Similarly to the preceding 1st (2007), 2nd (2010) and 3rd (2012) 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 CMOS Integration, Impact for EDA Perspective, OSAT Point of View
- > **Bonding Technologies for 3D & Hetero-Integration**
Wafer-to-Wafer Bonding, Die-to-Wafer Bonding, Cu Hybrid Bonding, Temporary Bonding & De-bonding, Polymers for Wafer Level Packaging
- > **Hydrophilic & Plasma-assist Bonding and its Applications**
Oxide Fusion Bonding, Wafer-Level Hermetic Bonding, Si Photonics, Hetero-integration of Optoelectronic Systems, BSI CMOS Image Sensors, Nano-Micro Fluidics Application
- > **Surface Activated Bonding (SAB)**
Overview of SAB for Room-Temperature Bonding, Metal-metal direct bonding at room temperature, Optical Micro Sensors, Frequency-Conversion Devices and Solid-State Lasers, Magneto-Optic Garnet for Waveguide Optical Isolator, InP/Si Bonding for On-chip Optical Interconnection, Bio-medical Device Applications
- > **Applications of low Temperature Bonding**
Power-electronics Module Packaging, OLED and Lighting Devices Sealing, SiC-, AlN-Bonding for Power Electronic Devices, Direct-bonded Tandem Solar Cells
- > **New Processes for low-temperature Bonding**
Vapor-Assisted Surface Activation Method, Water Containing Plasma Activation, Atomic Diffusion Bonding, Low temperature bonding using Formic Acid, Bonding of CNT to Metal for Vertical Interconnection
- > **New Aspect of Solder and Electro-plating Techniques for 3D Integration**
Solder/Adhesive Bonding, Lead-free Bonding with Hydrogen-radical Treatment
- > **SAB Tools for Volume Production**

Important date:

Submission of abstracts:	May 20, 2014
Notification of acceptance:	May 30, 2014
Presentation Materials:	June 15, 2014

Contact:

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Selected Topics in Applied Physics (STAP) of Jpn. J. Appl. Phys. (JJAP):

The LTB-3D committee encourages researchers relevant to the low-temperature bonding technologies to submit original papers as extensions of their presentations at the workshop to **Selected Topics in Applied Physics (STAP) of Japanese Journal of Applied Physics (JJAP)** entitled "**Advances in low-temperature bonding technologies for 3D integration**". The STAP shall be published in February 2015. All STAP papers are **freely and permanently accessible** online. The deadline for submission is **the end of July 2014**. Details for the submission process shall be later announced on LTB-3D website.