

2012 3rd IEEE International Workshop on Low Temperature Bonding for 3D Integration

LTB-3D 2012

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

May 22 -23, 2012

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) and 2nd (2010) 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, Micro Laser Doppler Velocimeter, 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
- **Fundamentals of Nano-bonding**
Characterization of Surface Profile for SAB, In-situ TEM Observation of Nano-bonding, Electrical Properties of Bonded Interface
- **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:	March 14 th , 2012
Notification of acceptance:	March 22 nd , 2012
Presentation Materials:	April 22 nd , 2012

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