# Workshop on 3D Interconnect Metrology 2013

San Francisco, California, USA 10 July 2013

ISBN: 978-1-62993-231-6

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2013) by SEMATECH All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact SEMATECH at the address below.

SEMATECH 2706 Montopolis Drive Austin, Texas 78741

Phone: (512) 356-3500 Fax: (512) 356-7848

www.sematech.org

#### Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400 Fax: 845-758-2634 Email: curran@proceedings.com Web: www.proceedings.com

# **Workshop on 3D Interconnect Metrology**

## July 10, 2013 San Francisco, CA

### Presentations

<u>Overview</u>	VictorVartanian, SEMATECH
Metrology Challenges and Needs for 3D Integration	Carlos Beitia, CEA-Leti
Progress in Model-Based TSV Profile Metrology and Its Contribution to 3D Integration Yield	Renan Milo, Nova Measuring Instruments, Ltd.
Optical Metrology Tools for 3D IC Packaging	Arun Aiyer, Frontier Semiconductor
Inspection & Metrology on a Common Platform for Advanced Packaging in HVM	David Grant, Rudolph Technologies
Detection of 3D Interconnect Bonding Voids by IR	Jonny Hoglund, Semilab
<u>Microscopy</u>	
<u>New Scanning Acoustic Microscopy Technologies Applied</u> to 3D Integration Applications	Peter Czurratis, PVA-Tepla
Enabling 3D Stacked Integrated Circuits Through	Richard Allen, NIST
Measurement Standards	
Integrated Metrology for TSV Reveal	Laura Mauer, SSEC
In-line IR Metrology for High-Volume Temporary Bonding Applications	Markus Wimplinger, EVG
2D & 3D Inspection and Metrology Application Study for 3DIC	Omri Katz, Camtek
<u>Development of C-SAM® Imaging Capabilities for</u> <u>Thin, Multi-layer Structures such as Stacked Die and 3D</u> ICs	Steve Martell, Sonoscan
Site-Specific Inspection and Analysis of 3D Interconnects using Plasma-FIB Technology	Richard Young, FEI
<u>3D X-Ray Microscopy Replaces Physical Cross-Section in</u> <u>3DIC Packaging</u>	Yuri Sylvester, Xradia
Automated, Non-Contact Optical Metrology For 2.5D and 3D IC Manufacturing	Vamsi Velidandla, Zeta Instruments
Advancements in Digital X-ray and CT scanning	Ben Connors, North Star Imaging

#### Posters

Characterization of Local Stress in Silicon around Through- Silicon Via Interconnects by Using micro Raman Spectroscopy	Jae Hyun Kim, KAIST Takeshi Ueda, WaferMasters Woo Sik Yoo, WaferMasters Seung Min Han, SK hynix
Fully Automated High-Precision Metrology System for 3D Advanced Wafer Packaging	ISIS
T-MAP Dual 3D 300A Full Process Control Solution for 3D IC TSV	FOGALE nanotech
<u>3D Compositional Analysis of Nanoparticles by TOF-</u> <u>MEIS</u>	W. J. Kim, K. H. Jung, K. S. Yu, K-MAC K. W. Jung, ETRI D. W. Moon, DGIST
Time of Flight MEIS-K150	K-MAC
Demonstration of an Effective Measurement Technique for Reliability Analysis of TSVs: The RF-Based Technique	Chukwudi Okoro, NIST