

MEPTEC

Technical Symposium on Substrates: The Foundation of Semiconductor Packaging 2007

November 8, 2007
San Jose, California, USA

Printed from e-media with permission by:

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

ISBN: 978-1-60560-152-6

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

MEPTEC

Technical Symposium on Substrates: The Foundation of Semiconductor Packaging 2007

TABLE OF CONTENTS

KEYNOTE SPEECH

| | |
|--|---|
| Markets and Trends in Laminate Substrates | 1 |
| <i>E. J. Vardaman</i> | |

SESSION ONE: Substrate Manufacturing and 1st Level Interconnection

| | |
|--|----|
| Buildup Technology Requirement Roadmap A FPGA Sector Perspective..... | 21 |
|--|----|

P.Y. F. Wu, P. McGuire

| | |
|---|----|
| Substrate Technology Roadmap | 37 |
| <i>J. Lan</i> | |

| | |
|---|----|
| Flip Chip Packaging Applications Using Advanced Substrates | 60 |
|---|----|

B. Appelt, A. Tseng, Y. C. Ding

SESSION TWO: Design and Simulation: Silicon, Substrate, System

| | |
|---|----|
| Deliver Electrical Performance to FPGA and ASIC Applications by Die-Package-System Co-Design | 83 |
|---|----|

H. Shi

| | |
|---|-----|
| Substrate Topologies and Mechanical Reliability Analysis for Miniaturized Mobile Systems | 104 |
|---|-----|

S. Moran

| | |
|--|-----|
| Challenges in Design and Electrical Analysis of Low Cost Wi-Fi 802.11 System in Package (SiP) | 130 |
|--|-----|

M. F. Nachnani

SESSION THREE: 2nd Level Interconnect and Reliability

| | |
|---|-----|
| Assembly Challenges of Product Miniaturization to the EMS..... | 151 |
|---|-----|

Q. Chu

| | |
|---|-----|
| IC package Design, Materials and Assembly ensuring System Level Solution | 168 |
|---|-----|

M. Alagaratnam

| | |
|---|-----|
| Impact of Package Substrate Design and Material Changes on 2nd Level Interconnect Reliability..... | 184 |
|---|-----|

M. Ahmad

SESSION FOUR: Emerging Substrate Technologies

| | |
|--|-----|
| Integrating IC Packages and Substrates for Improved Assembly Cost and Reliability | 232 |
|--|-----|

J. Fielstad

| | |
|--|-----|
| Status of the MEMS Industry: Substrate and Materials Markets..... | 288 |
|--|-----|

J. C. Eloy

| | |
|---|-----|
| MEPTEC 2007 Further Miniaturization Utilizing IMB Technology | 312 |
|---|-----|

T. Waris

Author Index