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# ADVANCED IC PACKAGING TECHNOLOGIES, MATERIALS, AND MARKETS

***2012 EDITION***

**A Strategic Report Covering the Latest  
Technologies in IC Packaging, Enabling Portable and  
other Electronics**

## Report Coverage

- Stacked Packages
- Through Silicon Vias (TSV)
- 2.5-D and 3-D Integration
- System in Package (SiP)
- Fan-in QFN
- WLPs including Fan-out Style
- Substrates
- Interconnection and Wire Bond

## Material

### **New Venture Research**

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## Report Highlights

- Market Analysis and Forecasts,  
2011–2016
- Key Application Forecasts
- New Product /Technology  
Introductions
- Industry Outlook
- 102 Tables, 154 Figures

### ***A Technology Market Research Company***

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## Synopsis

The Internet has altered the way in which the world and people function, communicate, and connect. The hardware which drives this, and the need for more bandwidth to support it, is driving technological advances in many new ways. Much progress has been made in front end manufacturing, but the current need is to increase Internet speeds by focusing on the "backend," or the packaging end of the chip making process, known as "More than Moore," after Moore's Law.

**NVR** in this report, **Advanced IC Packaging Technologies, Materials and Markets, 2012 Edition**, captures those advanced IC packaging methods which are critical to success in maintaining technological leadership.

**Chapter 3, Stacked Packages**, explains the basics of this critical packaging technology, along with coverage of the latest products. Forecasts include units, prices, packaging revenue, package types, device types, first-level interconnection, and applications.

**Chapter 4, TSV Market (3-D and 2.5-D stacking)** is covered in depth, including various methods of connecting the devices, with coverage of the latest new products and processes. Unit projections of both 2.5-D and 3-D are forecast, as are the identified potential markets for these technologies.

**Chapter 5, System in Package (SiP) Solutions**, presents information on the evolving market for ICs combined with passive devices within a single package. New product introductions are presented. Forecasts include units, prices, packaging revenue, device types, interconnection, and applications.

**Chapter 6, Fan-in QFN Packages**, examines the latest new product introductions plus market forecasts for Fan-in QFN Packages. Forecasts include units, prices, packaging revenue and applications.

**Chapter 7, Wafer-Level Packages Including Fan-out WLP**, presents technological background on the technology, the latest new Fan-Out WLP product introductions, plus market forecasts for WLP by pitch and Fan-Out WLPs.

**Chapter 8, Flip Chip and Wire Bonding Interconnection, and Wire Bond Materials**, reviews first-level package interconnection. Flip chip and wire bonding unit and package revenue forecasts are provided within the package, as well as flip chip bare die forecasts. Extensive flip chip forecasts are presented by device type and I/O count ranges, and by package type and I/O count range, both unit and revenue. New product highlights are also presented.

**Chapter 9, Substrates**, presents the market, including an overview of substrate types and materials, and highlights of recent developments in substrates. Forecasts are provided for substrate units, area, and revenue by package type and substrate material.

**Chapter 10, Rising Chip Packaging Markets and Key Applications for IC Devices**, includes forecasts of global IC units, revenue, and units by package families. The most popular package and I/O count range is presented for the most prominent IC devices. Key applications for small-footprint, high-performance packages are highlighted in this chapter.

**Advanced IC Packaging Technologies, Materials and Markets - 2012 Edition** sells for \$3495 as a single-user license PDF file. Additional licenses sell for \$250 each and a corporate license sells for \$1000. With the purchase of the report, an Excel spreadsheet of all tables may be obtained for an additional \$750.

## About the Author

**Sandra L. Winkler** is the senior analyst for IC packaging at **New Venture Research (NVR)**. She began her analyst career as an independent consultant to the telecommunications industry over 20 years ago. Since 1995, Ms. Winkler has authored all of NVR's (formerly ETP's) widely cited reports on IC packaging. She has spoken at numerous industry conferences, writes columns for Chip Scale Review magazine, Global SMT & Packaging News, and contributes articles to the IEEE CPMT Newsletter. Ms. Winkler is a senior member of IEEE/CPMT and serves on the executive committee for the IEEE-CPMT-SCV chapter where she is also the Program Chair. She holds a MBA from Santa Clara University.

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The latest packaging products, services, and research of the following companies and organizations are profiled

3D Glass Solutions  
 Advanced Semiconductor Engineering (ASE)  
 Alerta Corp.  
 Amkor Technology  
 BeSang, Inc.  
 CONNECTEC JAPAN Corp.  
 DNP America  
 Dow Electronic Materials  
 Endicott Interconnect Technologies  
 ENSEM.SE/CMP-GC  
 Fogale  
 Fujitsu Advanced Technologies  
 Fujitsu Integrated Microtechnology  
 Georgia Institute of Technology  
 Hitachi Chemical Co.  
 IBM  
 Industrial Technology Research Institute (ITRI)  
 Invensas Corp.  
 Korea Advanced Institute of Science and Technology (KAIST)  
 Korea Electronics Technology Institute, Packaging Research Center

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Published December 2012, 315+ Pages

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