



## **PRESS RELEASE**

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### **TechSearch International Examines HBM Growth and Package Options for HBM + Logic**

The market for high bandwidth memory (HBM) is projected to grow 49% in wafers, including DRAM and logic layers, from 2020 to 2024. Growth is driven by increased adoption in high-performance computing such as AI, networking, graphics, and future server processors. Solutions to package HBM plus logic include silicon interposers (the most mature), fan-out on substrate using a redistribution layer (RDL), and many bridge solutions. The report examines the increasing number of bridge solutions for RDL structures, silicon interposers, and laminate substrates such as Intel's embedded Multi-Die Bridge (EMIB) and IBM's Direct Bonded Heterogeneous Integration (DBHI) silicon-bridge solution.

HBM uses TSVs and  $\mu$ bumps to achieve a 3D format, but the report also examines other 3D stacking methods including the use of hybrid bonding for DRAMs and SRAMs. New offerings from Samsung and TSMC are discussed.

The new Advanced Packaging Update also examines thermal challenges in mobile, high-performance applications such as memory and logic, and photonics. Thermal interface material developments are presented.

TechSearch International's financial analysis of the OSAT market examines the performance for the first half of 2020 with projected growth for the year. A split of the revenue from assembly vs. test is provided. Also discussed are trends in modularization of smartphones with some of the latest "made in Japan" examples. The latest APU is a 56-page report with full references and an accompanying set of 57 PowerPoint slides.

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