



## **PRESS RELEASE**

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FOR IMMEDIATE RELEASE  
June 20, 2018

### **TechSearch International Analyzes Trends in FO-WLP including Panel Activity**

While Apple remains the main customer for TSMC's Integrated Fan-Out WLP (InFO-WLP), an increasing number of companies are adopting a large area version of FO on Substrate. HiSilicon has been in production with ASE's FOCoS for several years and MediaTek just announced a logic device for networking applications using TSMC's InFO on Substrate (InFO\_oS). TSMC's FO-WLP platform has been extended to mobile 5G. A Multi-Stacking Technology (MUST) for 3D stacking based on InFO has been introduced for a baseband processor and a memory die. TSMC's InFO antenna in package (InFO\_AIP) targets an RF front-end module (FEM) for mmWave applications.

A number of companies and research organizations have reported progress on developing large area process or panel fan-out wafer level packages (FO-WLPs). ASE and Deca Technologies are cooperating to produce a panel version of the M-Series FO-WLP. Nepes has developed a 600mm x 600mm FO-WLP panel process using a liquid crystal display (LCD) production line with a fingerprint sensor as a first product. Powertech Technology's first product on its panel line will be a PMIC. Samsung Electro-Mechanics (SEMCO) has developed a chip-first panel FO-WLP process that is scheduled for introduction this year. Unimicron has established a pilot production line for panel RDL based on a glass substrate.

The latest Advanced Packaging Update is a 72-page report with full references and an accompanying set of 42 PowerPoint slides. The report also examines trends in integrated photonics packaging and an analysis of OSAT financials. A discussion of 3D sensing modules highlights production examples. VCSEL technology developments are introduced.

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