



## **PRESS RELEASE**

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### **Growth in Wearable Electronics Enabled by Advances in Assembly and Packaging**

Strong market growth is predicted for wearable electronics fueled by new generations of wearables providing greater functionality in the same or smaller form factor, for the same or lower cost. While improvements in IC technologies and software continue to make wearables smarter, advancements in assembly and packaging allow OEMs to meet small form factor, low-power consumption, and low-cost requirements.

One common theme emerging from TechSearch International's interviews is that, for a wearable to succeed in the marketplace, it must simplify tasks for its user, not complicate them. That requires greater intelligence from both hardware and software. The high degree of functionality in today's wearables has been made possible by advanced assembly and packaging technologies, use of wafer-level packages (WLPs) in particular.

Health, sports, and fitness monitoring are driving the wearables market. Basic requirements for activity trackers and smartwatches are: user friendly, comfortable, secure; always on and monitoring; ubiquitous connectivity; durability; and low cost for consumers. The trend in fitness bands and smartwatches is a growing number and variety of sensors.

Many different IC and package types are found in wearable electronics. A typical product contains a microcontroller, a power management device, memory, and a connectivity device (i.e., Wi-Fi or Bluetooth). Wearables also contain MEMS sensors such as accelerometers, gyroscopes, pressure sensors, and compasses, and sometimes sensors for monitoring pulse and blood oxygen saturation, ambient light, and temperature. Packages found in these products include FBGAs, FLGAs, QFNs, stacked die CSPs, WLPs, and system-in-package (SiP). Expanding use of fan-out WLP (FO-WLP) is likely to support form factor, high I/O density, and performance requirements.

TechSearch International's new 34-page *Advanced Packaging Update* report with full references provides an analysis of trends in wearable electronics and package adoption not only for smartwatches and activity trackers, but also for VR and AR headsets, body cameras, and wireless multi-function earbuds. The report also contains an updated forecast for FO-WLP in packages and reconstituted wafers, based on new plans for package adoption, as well as new battery technology developments. A set of 28 PowerPoint slides accompanies the report.

TechSearch International, Inc., founded in 1987, is a market research leader specializing in advanced packaging trends. Multi- and single-client services encompass technology licensing, strategic planning, and market and technology analysis. TechSearch International professionals have an extensive network of more than 17,000 contacts in North America, Asia, and Europe. For additional information, contact TechSearch at 512-372-8887 or see [www.techsearchinc.com](http://www.techsearchinc.com).