

LYON, FRANCE – Demand for so-called "mid-end" tools and related materials for wafer-level packaging is surging, thanks to the growth of 3D IC and wafer-level-packaging technologies such as 3D TSV, FO WLP, 3D WLP, WLCSP, 2.5D interposers and flip-chip wafer bumping.

“The material market will grow from approximately \$590 million this year to over \$2 billion by 2017, with a CAGR of 24%, driven mainly by the expansion of 2.5D interposers and 3D TSV and WLP platforms,” says Amandine Pizzagalli, technology and market analyst, advanced packaging, at **Yole Développement**, which just released a study on the sector.

Also, the equipment market reached approximately \$870 million in 2011, with a CAGR of 28%, fueled by the 3D IC technology with TSV interconnects, representing one of the main emerging areas in the coming years. This area offers opportunities for new equipment modification and new materials development, says the firm. A slight decrease in 2012 is forecast, since manufacturers invested in equipment tools dedicated to the 3D TSV and WLP markets last year, and high-volume production in 3D TSV, FO WLP, and 3D WLP has not started yet.

The materials market is diversified and segmented into several materials suppliers. Specialist material suppliers are involved and specialized in one specific sector. However, the equipment market for 3D TSV and WLP applications is fragmented and diversified, says Yole.

The firm identifies three main groups of equipment suppliers coming from different business markets: large equipment suppliers coming from the semiconductor and front-end area that have expanded their business into the 3D TSV and WLP semiconductor business through acquisition of other companies; equipment suppliers coming from niche application wafer processing markets with a broad product portfolio, and specialist equipment suppliers that have developed knowledge and expertise in specific equipment lines.