

# PacTech and AtoTech Form Alliance for Low Cost Flip Chip Bumping

Atotech and PacTech Form Alliance for Low Cost Flip Chip Bumping (Berlin, Germany) Atotech, a division of petrochemical giant Elf-Atochem, has formed a strategic alliance with PacTech GmbH of Berlin to provide funding and technical support for low cost flip chip bumping and related products. Under terms of the agreement, Atotech purchased a minority stake in the start-up company for an undisclosed sum. Together they will expand flip chip activities in the U.S., Europe, and Asia for high growth applications such as chip scale packages.

The deal is expected to leverage a number of synergies between the two companies. Atotech strengths include plating chemistry and equipment technology, global manufacturing and service infrastructure, and financial resources. PacTech provides a solid base of intellectual property for cost effective chip bumping and assembly, and an entrepreneurial approach to emerging semiconductor packaging niches. Their low cost electrochemical nickel/gold underbump metallization process is gaining market acceptance as a high reliability alternative to more costly sputtering and evaporation approaches. Atotech is a leading supplier of nickel/gold selective finishes for printed circuit boards. Global headquarters for both companies is located in Berlin, Germany which facilitates cooperation on strategic programs.

Flip chip technology uses tiny solder bumps instead of much longer gold wires for integrated circuit interconnection. It represents the ultimate in size reduction for semiconductor packaging, and enhanced electrical performance for high speed devices. These bumped chips may be directly mounted to a printed circuit board for maximum size reduction. They are also starting to replace conventional wirebonded devices inside other compact packages, such as plastic Ball Grid Arrays (BGAs) and Chip Scale Packages (CSPs). Typical applications include computers, cellular telephones, and hand-held consumer electronics.

Atotech is a global leader in chemistry and process equipment for plating, etching, and surface treatment with 40 service centers and 20 manufacturing sites worldwide. Major served markets include printed circuit boards, ball grid arrays, and general metal finishing for automotive and industrial applications. It is a division of Elf-Atochem, a major supplier of specialty chemicals with global sales exceeding \$10 billion. Atotech was formed through the merger of Schering Electroplating AG of Germany and M&T Harshaw's U.S. plating operations in 1993. Atotech European and world headquarters are in located in Berlin, with regional headquarters in Tokyo and Rock Hill, SC.

PacTech GmbH was founded in 1995 by researchers from the Technical University of Berlin who developed innovative processes for flip chip and chip scale packaging. Major products and services include: wafer bumping services and unique process equipment for wafer bumping, flux-free solder ball placement, and rapid laser bonding. They provide flip chip wafer bumping services at their new facility in Nauen, Germany.

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