

**Expansion of Facilities in Malaysia for Contract Processing and
Manufacturing of Semiconductor Wafer Bumping
Investment of 1 Billion Yen in Power Semiconductor Devices for Smartphones**

As part of the growth strategy in the Medium-Term Management Plan ACE 2.0, Nagase & Co., Ltd. (Chiyoda-ku, Tokyo; Representative Director, President and CEO: Hiroyuki Ueshima) has classified businesses into four quadrants: Foundation, Focus, Development, and Improvement. PacTech - Packaging Technologies GmbH (Nauen, Germany; President: Dr. Thorsten Teutsch), a subsidiary of Nagase & Co. specializing in the sales of equipment for manufacturing semiconductors and electronic components, as well as in wafer bumping services for semiconductors, has resolved to make a 1 billion yen capital investment in PacTech Asia Sdn. Bhd. ("PacTech Asia"), based in Penang, Malaysia. This investment will improve manufacturing capabilities for semiconductors and related products, an element of the Foundation quadrant.

This investment aims to increase equipment count and cleanroom space utilized for contract processing at PacTech Asia to meet growing needs for power semiconductor devices used in smartphones and electronic devices. Power semiconductor devices are expected to contribute to more advanced and low power consumption semiconductors. The newly established manufacturing lines will begin operations from April 2024. PacTech Asia expects to increase its production capacity by approximately 1.5 times with this investment and strives to expand the company share of the wafer level packaging (WLP) contract processing market used for smartphones and electronic devices in general.

PacTech Asia provides electroless and electrolytic fan-in wafer plating as its core technology, resulting in one of the world's leading shares of the global WLP contract processing market.

While electroplating is used for high-end, high pin count products due to its finer process capabilities, electroless plating is mainly used for semiconductors for middle and low-end products due to its low cost and suitability for mass production through badge processing. In recent years, more companies have been considering using the process for manufacturing semiconductors for middle- and low-end products in high-end applications as semiconductors become more sophisticated (composite semiconductors) and three-dimensional. With this change, the electroless plating WLP market is expected to expand.

With chemistry, equipment and process know-how being developed as a turnkey solution internally, PacTech Asia possesses strong technology to precisely control the concentration and other important properties of chemicals, which ultimately enables finer deposition in electroless plating. Through this capital investment, the NAGASE group will respond to the strong demand for semiconductor manufacturing in the world.

The NAGASE Group will contribute to a sustainable world where people live with peace of mind as a company that solves manufacturing issues through materials.



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