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Speech subject： “Manufacturing Technology Solution of Wafer / Panel Level Packaging for Chiplet Integration”

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Speech Description/Objective:
The next era of AI-driven information and communications technology (ICT) systems will be powered by an infrastructure that integrates Cloud Computing, Fog and Edge Computing, and Massive IoT. New semiconductor devices are necessary for artificial intelligence (AI) that require real-time or low-latency performance (less than 1ms), as well as low power consumption. High-density packaging technologies, including 3D chiplet integration with wafer-level packaging (WLP) and panel-level packaging (PLP), are essential to meet the manufacturing requirements of these high-performance semiconductor devices. ULVAC has been continuously developing manufacturing solutions to achieve heterogeneous integration through substrate packaging, 2.5D interposers, and 3D-IC technologies, including through-silicon vias (TSV) and hybrid bonding. In this presentation, ULVAC will outline our efforts in heterogeneous chiplet integration, which involve plasma etching/ashing and PVD (Physical Vapor Deposition) sputtering techniques to achieve high-density interconnections.

Speech Outline:
1. Introduction & Background
2. Manufacturing Technology Transformation by Chiplet Integration
3. Dry process development strategy for Chiplet Integration
    3-1. Wafer Level Process for FO-RDL, TSV etch and Plasma dicing
    3-2. Panel Level Process for Build up and FO-RDL interposer
4. Collaborative activities
5. Summary