

Market Briefing

From AI Demand to Manufacturing Reality: Scaling Across Fabs, Packaging, and Materials

C. Tseng
Sr. Director
SEMI, Milpitas, United States of America

Abstract

AI infrastructure is reshaping the semiconductor manufacturing cycle, driving stronger investment in leading-edge logic, advanced memory, test, packaging, and the materials required to support increasingly complex devices and systems. This presentation will examine how these demand shifts are translating into fab investment, equipment spending, capacity expansion, and technology migration across the global semiconductor industry.

The discussion will also look beyond the fab. As AI systems depend increasingly on advanced packaging, higher-bandwidth memory, interconnect, and more complex material requirements, manufacturing constraints are becoming more interconnected across the value chain. The presentation will explore how process intensity, packaging complexity, and materials demand are evolving alongside wafer capacity, and what these changes mean for investment priorities, supply-chain readiness, and regional manufacturing strategies in Europe and globally.

Biography

Clark Tseng is Senior Director of Market Intelligence at SEMI, where he leads the development and execution of global market intelligence strategies covering the semiconductor manufacturing supply chain. He oversees SEMI's market research portfolio and global research partnerships, providing analysis and forecasts on fab investment, capacity, equipment, materials, and semiconductor manufacturing trends. Clark has extensive experience analyzing the semiconductor industry across foundry, IDM, memory, fabless, and OSAT markets, with a particular focus on manufacturing investment, technology transitions, and regional supply-chain dynamics.

Before joining SEMI, Clark held strategic and analytical roles at leading technology companies. At MediaTek, he served as Deputy Director of the Computing, Connectivity, and Metaverse Business Group, providing market intelligence and competitive analysis across computing, connectivity, automotive, and emerging technology markets. Previously, he was Division Manager for Strategy and Business Development at Qimonda, where he led market and competitive intelligence activities for the Asia-Pacific region. He began his career as an analyst at IDC, covering semiconductor, flat-panel display, and telecommunications markets.

Clark holds a Bachelor of Business Administration and a Bachelor of Arts in International Relations from National Chengchi University in Taiwan.

References