Applied Materials Announces New Collaboration Model for Advanced Packaging at Summit on Energy-Efficient Computing

November 19, 2024

- *EPIC Advanced Packaging marks an expansion of Applied's global innovation platform*
- *Company convenes top semiconductor R&D leaders to advance high-performance, low-power AI chip packaging technologies*

SANTA CLARA, Calif. and SINGAPORE, Nov. 18, 2024 (GLOBE NEWSWIRE) -- Applied Materials, Inc. today announced plans to expand its global EPIC* innovation platform with a new collaboration model specifically designed to accelerate commercialization of advanced chip packaging technologies. To kick-off the initiative, Applied convened more than two dozen top R&D leaders from the semiconductor industry to encourage alliances between equipment makers, material providers, device companies and research institutes. The goal is to fast-track new technologies for the next generation of energy-efficient computing. Applied hosted the summit in Singapore, where the company has been collaborating on advanced packaging R&D with its customers and partners for over a decade.

The dramatic rise in the number of connected devices and the emergence of AI are creating tremendous growth opportunities for the chip industry. At the same time, the industry is confronting several challenges, foremost of which is the exponential increase in energy consumption fueled by the intense compute power required to support the growth of AI. In response, chipmakers and system designers are increasingly turning to advanced packaging and heterogeneous integration of multiple chips as a way to achieve more energy-efficient system performance.

"Advanced packaging is paramount to the semiconductor roadmap for enabling sustainable progress in the AI era," said Dr. Prabu Raja, President of the Semiconductor Products Group at Applied Materials. "Today's summit unites the leaders from the most innovative organizations to explore collaborative advancements in performance-per-watt through advanced chip packaging. With our global innovation platform and the new EPIC Advanced Packaging strategy, Applied Materials is uniquely positioned to help chipmakers accelerate the journey from concept to commercialization of new technologies."

Today's most capable AI chips are enabled by multiple advanced packaging technologies, such as micro-bumps, through-silicon vias (TSVs) and silicon interposers. To tap the true potential of AI, the industry is developing a new set of packaging building blocks to dramatically increase the interconnect density and bandwidth of next-generation systems. The need to develop multiple technologies simultaneously – combined with a faster cadence of product introductions – creates challenges for system designers, who must navigate a complex array of solution paths and packaging architectures. This increased complexity adds additional risk, time and cost to chipmaker roadmaps.

There is a clear need for increased collaboration across this complicated ecosystem, as well as earlier engagement with all parts of the value chain. Applied's strategy with EPIC Advanced Packaging is to address this need by driving co-innovation and changing the way foundational packaging technologies are developed and commercialized. Leveraging a global network of innovation centers, the strategy aims to give leading chipmakers and system designers early access to next-generation technologies and equipment, while also providing an opportunity for deep collaboration with suppliers and university partners to strengthen the lab-to-fab pipeline and develop future semiconductor talent.

EPIC Advanced Packaging is an expansion of Applied's global EPIC platform. In May 2023, Applied launched the EPIC Center, currently under construction in Silicon Valley, which is focused on equipment and process technologies for forming transistors and wiring on individual chips. EPIC Advanced Packaging will leverage the R&D work taking place across Applied's global innovation centers – driving progress in advanced packaging capabilities for connecting multiple chips within a computing system.

Summit Participants

Companies:
Absolics, Advantest, Ajinomoto Fine-Techno Co., AMD, Amkor, BESI, Broadcom, Chipletz, EV Group, Intel, Kioxia, Micron, NXP, Resonac, Samsung, SK hynix, Synopsys, TSMC, Ushio, Western Digital

Institutes and Universities:
A*STAR's Institute of Microelectronics (IME), Singapore Economic Development Board (EDB), National University of Singapore (NUS), Singapore Institute of Technology (SIT)

*EPIC = Equipment and Process Innovation and Commercialization

Forward-Looking Statements
This press release contains forward-looking statements regarding our future plans and expectations to expand our global EPIC platform, including those relating to anticipated benefits to the semiconductor industry, the development and commercialization of new technologies, engagement across the semiconductor ecosystem, and other statements that are not historical facts. These statements and their underlying assumptions are subject to risks and uncertainties and are not guarantees of future performance. Factors that could cause actual results to differ materially from those expressed or implied by such statements include risks and uncertainties described in our SEC filings, including our recent Forms 10-Q and 8-K. All forward-looking statements are based on management's current estimates, projections and assumptions, and we assume no obligation to update them.

About Applied Materials
Applied Materials, Inc. (Nasdaq: AMAT) is the leader in materials engineering solutions used to produce virtually every new chip and advanced display

in the world. Our expertise in modifying materials at atomic levels and on an industrial scale enables customers to transform possibilities into reality. At Applied Materials, our innovations make possible a better future. Learn more at www.appliedmaterials.com.

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