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Intel Opens First High-Volume 45nm Microprocessor Manufacturing Factory

New \$3 Billion Facility to Produce Processors with Intel 45nm Hafnium-based High-k Metal Gate Transistors

CHANDLER, Ariz.--(BUSINESS WIRE)--

Intel:

News: Intel is opening its newest state-of-the-art microprocessor factory (called Fab 32) in Chandler, Ariz. as it prepares to ship its first 45nm processors on Nov. 12.

Context: Manufacturing capacity and modernization are key differentiators in today's competitive market for microprocessors. Intel invests heavily in its global manufacturing network, including a \$3 billion investment in Fab 32, to ensure it can meet the demands of the market, and is quickly ramping production on its 45nm process technology. Two more 45nm factories will open next year.

Relevance: With 1 million square feet and more than 1,000 employees, Fab 32 is Intel's latest environmentally friendly factory that will manufacture tens of millions of the most energy-efficient processors the company has ever made. These processors are based on Intel's groundbreaking transistors with Hafnium-based high-k metal gate silicon technology, the biggest change to how transistors are made in 40 years.

Production of a new generation of microprocessors for PCs, laptops, servers and other computing devices officially began today inside of Intel Corporation's first high-volume 45 nanometer (nm) manufacturing factory in Chandler, Ariz.

Called "Fab 32," the \$3 billion factory will use Intel's innovative 45nm process technology based on Intel's breakthrough in "reinventing" certain areas of the transistors inside its processors to reduce energy leakage. The 45nm transistors use a Hafnium-based high-k material for the gate dielectric and metal materials for the gate, and are so small that more than 2 million can fit on the period at the end of this sentence. Millions of these tiny transistors will make up Intel's faster, more energy efficient lead- and halogen-free processors for PCs, laptops and servers, as well as ultra low-power processors for mobile Internet and consumer electronic devices, and low-cost PCs. The first of the company's 45nm processors is scheduled to be introduced on Nov. 12.

"The opening of Fab 32 in Arizona today is a testament to Intel's continued investment in our most strategic asset -- the most advanced, environmentally friendly manufacturing network in the world," said Paul Otellini, Intel president and CEO. "The magic of 45nm and our new transistor design allow us to deliver high-performance, energy-efficient processors to our

customers across the entire spectrum of market segments, from the most powerful servers to a variety of mobile devices and everything in between."

Fab 32 is Intel's sixth 300mm wafer factory and its second factory to produce 45nm chips. Intel first produced 45nm processors in its Oregon development facility, called D1D, in January and is now moving into high-volume production with the opening of Fab 32. Two additional 45nm, 300mm manufacturing factories are scheduled to open next year in Kiryat Gat, Israel (Fab 28) and Rio Rancho, N.M. (Fab 11x). Using 300mm wafers lowers the production cost per chip while diminishing overall use of resources.

With 184,000 square feet of clean room space, the completed Fab 32 structure measures 1 million square feet, so large that more than 17 U.S. football fields could fit inside the building. More than 1,000 employees will operate the factory in such positions as process, automation and yield engineers and senior manufacturing technicians.

A Focus on the Environment - From the Factory Down to the Transistor

Fab 32 will be among Intel's most environmentally friendly factories, incorporating a number of energy and water conservation measures that have come to characterize Intel's long track record of environmental stewardship in its operations.

Intel's industry-leading 45nm process results in a 15 percent reduction in global warming emissions, and Fab 32 makes use of Intel Arizona's innovative water conservation and reuse program which conserves more than 70 percent of the water.

The company also announced that it intends to seek certification for the new fab as the company's first official Leadership in Energy and Environmental Design (LEED) factory based on new criteria being developed for facilities of this kind. LEED is a green building rating system developed by the U.S. Green Building Council that provides a set of standards for environmentally sustainable construction and requires several months of operating data before certification can be completed. The certification would demonstrate that Fab 32 meets the highest environmental standards and reflects Intel's history of commitment to environmental leadership.

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