X-FAB Announces 8-Inch MEMS Center

X-FAB Silicon Foundries announced it will expand its foundry service to include 8-inch (200mm) MEMS wafer processing. Moving to the larger wafer diameter and monolithic MEMS/CMOS integration allows significant reductions in manufacturing costs. X-FAB believes its expansion to 8-inch MEMS production places it squarely among the leading MEMS foundries and will significantly benefit customers developing applications for the automotive and consumer markets. The company already is working with lead customers developing MEMS devices on 200mm wafers in combination with 0.35um CMOS technology. X-FAB will discuss the new 8-inch MEMS Center for the first time in public in Booth #820 at the Sensors Expo & Conference, Rosemont, IL., June 8-9, 2010, and in Booth #1408 at the Design Automation Conference (DAC 2010), Anaheim, Calif., June 13-18, 2010.

X-FAB accelerated its MEMS program with 200mm wafer MEMS manufacturing capability to address explosive growth in MEMS – a need driven by emerging high-volume applications for the consumer market. For example, MEMS accelerometers, gyroscopes, pressure sensors and microphones now are prevalent in consumer products ranging from mobile phones and portable devices to white goods.

X-FAB will install 8-inch MEMS process equipment in three phases in its dedicated MEMS clean room in Erfurt, Germany, to increase its manufacturing efficiency and introduce new process capabilities.

Phase 1 adds equipment for bulk-silicon etching capable of highly controlled membrane formation such as that required for pressure sensors, IR sensors and other bulk silicon structures. This phase will be implemented throughout 2010.

Phase 2 adds to X-FAB’s silicon etching capability other main processes required for MEMS manufacturing, such as photolithography, thin film deposition and etching. This phase is scheduled for 2011.
Phase 3 also implements new processes that expand X-FAB’s technology capability with noble metals or other materials not found in CMOS fabs, to provide manufacturing capability for the ever-increasing range of MEMS devices. This phase is also scheduled for 2011.

Cost-effective CMOS/MEMS integration

MEMS often are combined with an ASIC device that performs tasks such as signal conditioning or pre-amplification. Integrating the CMOS and MEMS devices onto a single chip can provide distinct advantages in terms of cost and package size, and it simplifies subsequent manufacturing operations.

Thomas Hartung, VP of Marketing for X-FAB, commented on the company’s investment in 200mm technology: “Our customers have told us they are interested in 8-inch capability due to its cost-savings for discrete sensors and its ability to

handle ever-advancing requirements for integrated CMOS intelligence. X-FAB is demonstrating its commitment to provide an advanced and cost-effective foundry service by efficiently integrating MEMS into its 0.35um process, and can do this also for 0.18um CMOS processes running on 200mm wafers – meeting current and future needs of our MEMS foundry service worldwide customer base."

Uwe Schwarz, head of X-FAB's MEMS development team, added: "X-FAB's MEMS foundry service combines our extensive experience in this field with well established process control and quality assurance procedures required for the automotive sector and used throughout our CMOS and MEMS operations."