



PRESS RELEASE

Unique Prototyping Platform from X-FAB Brings Together the Distinct Worlds of Microelectronics and Fluid Handling

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X-FAB Silicon Foundries SE has taken further steps to establish itself as the go-to foundry for [silicon-based microfluidics](#). The company is now able to offer a series of solutions that support the implementation of microfluidic structures directly on to CMOS dies. Through these, customers will be better able to address commercial opportunities arising that relate to lab-on-a-chip, DNA sequencing and synthesis, rare cell sorting, medical implants, pharmaceutical research, drug administering, food safety testing and many other applications.

Customers will have access to all the key elements required for developing chip-based microfluidic subsystems – allowing them to move through the prototyping phase of their projects much quicker and get to a point where they can start considering full-scale production. By having numerous elements bundled together, it will no longer be necessary for customers to work with many different vendors. This means that the integration issues that generally come with complex multi-vendor projects can be avoided.

Leveraging X-FAB's [XH035](#) 350nm high-voltage analog/mixed-signal CMOS process, which is optimized for applications requiring high signal-to-noise ratios, the company can carry out numerous microfluidic post-processing activities. These can be undertaken at its state-of-the-art MEMS manufacturing sites in Germany, with use of multi-level mask (MLM) techniques to keep down the overall prototyping costs.

Customers will be able to benefit from the various standard process blocks that have been developed at X-FAB and are proven in silicon. Available process options include:

- Initial preparation of the CMOS wafer for microfluidic integration, through planarized passivation along with through passivation vias.
- The attaching of noble metal electrodes (either gold or platinum based) to act as interfaces for the fluidic samples.
- The adding of a dry film resist top layer (into which microfluidic channels can be scored) with an optional glass cap wafer

To provide further assistance, the design house, testing operations and full turnkey suppliers in the [X-Chain](#) partner network can also be engaged with. This means that customers with limited prior expertise of creating a custom chip can always gain access to the services they need.



“Microfluidics represents a highly challenging application-specific market, requiring fully optimized custom solutions and considerable investment,” Oliver Foellmer, Product Marketing Manager at X-FAB explains. “It is clear from our discussions with customers involved in this sector that they need to be able to get comprehensive prototyping support from a single source. Thanks to our new microfluidics prototyping platform, we are helping to accelerate development cycles and lower the financial thresholds, so that customers can embark on innovative silicon-based microfluidic projects regardless of their size or capabilities,” he concludes.

Customers can gain access to X-FAB’s new microfluidics prototyping platform straight away, with the initial prototyping run being scheduled for early Q1 2021. To find out more about customized prototyping using this platform, please contact the X-FAB team at [\[link\]](#).

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About X-FAB

X-FAB is the leading analog/mixed-signal and MEMS foundry group manufacturing silicon wafers for automotive, industrial, consumer, medical and other applications. Its customers worldwide benefit from the highest quality standards, manufacturing excellence and innovative solutions by using X-FAB’s modular CMOS and SOI processes in geometries ranging from 1.0 to 0.13 µm, and its special SiC and MEMS long-lifetime processes. X-FAB’s analog-digital integrated circuits (mixed-signal ICs), sensors and micro-electro-mechanical systems (MEMS) are manufactured at six production facilities in Germany, France, Malaysia and the U.S. X-FAB employs about 3,800 people worldwide. www.xfab.com

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Acronyms

CMOS	Complementary Metal Oxide Semiconductor
IP	Intellectual Property