

General

The 5 highlights of October 2018

Life is busy! So you might not always have the time to keep up with imec's latest news and achievements. On this page, you can find a quick overview of what imec has been doing in the past month.

Imec releases Neuropixels neural probe to global neuroscience community

On October 31st, imec released important news for the global neuroscience community – with the introduction of its state-of-the-art, high-density neural probe ‘Neuropixels’.

With almost a thousand electrodes and 384 recording channels on a single shank, the Neuropixels probe is the most advanced neural electrophysiology probe to date – providing an unprecedented resolution for mapping brain activity. As such, it holds the promise of revolutionizing the way neuroscience research is conducted and of propelling our understanding of complex brain processes and diseases. The probes are designed and fabricated on imec’s advanced silicon platform.

Information on how to access and use the Neuropixels probes is available on the Neuropixels website at www.neuropixels.org or www.neuropixels.info. Read the press release [here](#).

Imec and ASML intensify collaboration in the domain of EUV Lithography

Building on almost 30 years of joint research, imec and ASML announced on October 22nd that they will intensify their collaboration. The aim is twofold: to advance high-volume production with current EUV lithography, and to develop future EUV systems.

A first concrete outcome of the intensified collaboration is the installation of ASML’s most advanced and high-volume production dedicated EUV scanner (NXE:3400B) in imec’s cleanroom. Combining ASML’s lithography and metrology equipment with imec’s infrastructure and advanced technology platforms, imec and ASML researchers – as well as partner companies – can thus proactively analyze and solve technical challenges (such as defects, reliability and yield) and accelerate EUV technology’s industrialization.

A second component is the foundation of a joint high-NA EUV research lab, where researchers from both organizations will experiment with the next generation of EUV lithography at higher Numerical Aperture (NA). Systems with a higher NA project the EUV light onto the wafer under larger angles, improving resolution, and enabling printing of smaller features. More specifically, the new high-NA EUV system that will be installed in the joint research lab will have an NA of 0.55 instead of 0.33 in current EUV systems. Read the press release [here](#).

ESA mission takes imec chip to smallest and innermost planet in our solar system

Saturday, October 20th, marked the start of the European Space Agency's BepiColombo mission – the first European mission to Mercury, the smallest and least explored planet in our inner solar system. Amongst the project's key research objectives are: investigating the planet's interior structure and composition, detecting surface processes (such as vulcanism), mapping the structure of Mercury's exosphere, and monitoring the origin and evolution of a planet that travels through space closely to its parent star.

Imec's role? At the heart of one of the on-board instruments is the TIMPO32 chip that was designed and flight model qualified by imec – with the help of Microtest. To give you an idea of the chip's roadmap: its design started in the early 2000's – and the final chips were delivered in 2013. It will now take another 7 years before the spacecraft – and the imec chips – reach Mercury.

Imec's elPrep software significantly speeds up genome sequencing analysis

At ITF Health (San Francisco, October 19th), imec showcased its elPrep 4.0 – a powerful software tool to speed up human DNA sequencing analysis. elPrep accelerates whole genome and exome processing pipelines up to an order of magnitude, saving a typical lab hundreds of hours of compute processing and thus allowing more and faster DNA tests.

elPrep is designed as a multi-threaded application that runs entirely in memory, avoids repeated file I/O, and merges the computation of data of several DNA sequencing preparation steps. As a result, in a typical run, elPrep is up to ten times faster than other software tools using the same resources.

elPrep has been designed as a seamless replacement that delivers the exact same results as GATK4.0 developed by the Broad Institute. elPrep has been written in the Go programming language and is available through the open-source GNU Affero General Public License v3 (AGPL-3.0). Read the press release [here](#).

Imec and RVO-Society welcome 11 engaged youngsters at 'YOUCA' Action Day 2018

On October 18th, imec and RVO-Society once again took part in the 'YOUCA' (Youth for Change and Action) initiative. Eleven youngsters – from high schools across Belgium – worked at imec for one day and donated their wages (€ 50) to projects of committed young people in the South (this year, there was a particular focus on projects in Ecuador), as well as to a number of projects in Belgium.

Apart from the charity component, 'YOUCA' also proved to be a good way for the students to catch a glimpse of imec's various research tracks. Activities they assisted in included: testing AR screens and VR glasses, chemical analyzation, cleanroom operations, etc. A new generation of imec employees is born!