December 10, 2025

Smartkem

Smartkem Unlocks New Generation of Flexible Biometrics with World-First All-Organic Sensor

Paper detailing this breakthrough to be published by the Institute of Electrical and Electronics Engineers (IEEE) as part of a project under the National Key R&D Program of China in collaboration with Shanghai Jiao Tong University (SJTU).

MANCHESTER, England, Dec. 10, 2025 /PRNewswire/ --Smartkem, Inc. (Nasdaq: SMTK), a company developing a new class of organic semiconductor technology, today announced that it has created the world's first all-organic-transistor (AOT) biometric sensor, in collaboration with the SJTU.

This novel technology significantly increases the sensitivity of optical detection for flexible biometric applications, such as finger or palm print recognition on curved surfaces and has the potential to help address challenges like fingerprint spoofing. By enabling advanced liveness detection techniques, the sensor can capture subtle signals that distinguish real fingerprints from fake ones, whether through multi-wavelength imaging or dynamic imaging that reveal motion or blood flow.

A paper describing this new technology, titled 'Flexible 256x256 All-Organic-Transistor Active-Matrix Optical Imager with Integrated Gate Driver' and co-authored by Smartkem Chief Technology Officer, Dr. Simon Ogier, will be published by the IEEE and presented by Prof. Xiuyan Li, SJTU at the 71st Annual IEEE International Electron Devices Meeting today, Wednesday, December 10th, 2025, at 3:15pm PST / 6:15pm EST.

Presenter	Prof. Xiuyan Li, Shanghai Jiao Tong University
Location	Hilton San Francisco Union Square, USA
Date	Wednesday, December 10
Time	3:15pm PST / 6:15pm EST
Presentation Title	Flexible 256x256 All-Organic-Transistor Active-Matrix Optical Imager with Integrated Gate Driver
Abstract	Read abstract here

"This is a true world-first and a powerful demonstration of the many potential use cases for Smartkem's organic transistor platform," said Ian Jenks, Chairman and CEO of Smartkem. "By creating the first fully all-organic-transistor active-matrix biometric sensor, we've shown that OTFT technology can outperform conventional inorganic sensors in sensitivity, while

enabling entirely new classes of flexible, curved biometric devices. This work opens the door to a new generation of lightweight, high-performance bio- and optical sensing."

Register for the 71st Annual IEEE International Electron Device Meeting here.

The paper will be published online following the IEDM 2025 conference in San Francisco. Available to view here.

About Smartkem

Smartkem is seeking to change the world of electronics with a new class of transistors developed using its proprietary advanced semiconductor materials. Our TRUFLEX® semiconductor polymers enable low temperature printing processes that are compatible with existing manufacturing infrastructure to deliver low-cost, high-performance displays. Our semiconductor platform can be used in a range of display technologies including MicroLED, LCD and AMOLED, as well as in applications in advanced computer and AI chip packaging, sensors, and logic.

Smartkem designs and develops its materials at its research and development facility in Manchester, UK and operates a field application office in Hsinchu, Taiwan, close to collaboration partner, The Industrial Technology Research Institute (ITRI), where it provides prototyping services. Smartkem is developing a commercial-scale production process and Electronic Design Automation (EDA) tools to demonstrate the commercial viability of manufacturing a new generation of displays using its materials.

The company has an extensive IP portfolio including 140 granted patents across 17 patent families, 14 pending patents and 40 codified trade secrets.

For more information, visit the Smartkem website or follow on LinkedIn.

About IEDM

IEEE International Electron Devices Meeting (IEDM) is the world's pre-eminent forum for reporting technological breakthroughs in the areas of semiconductor and electron-device technology, design, manufacturing, physics, and modeling. IEDM is the flagship conference for nanometer-scale CMOS transistor technology, advanced memory, displays, sensors, MEMS devices, novel quantum and nano-scale devices and phenomenology, optoelectronics, devices for power and energy harvesting, high-speed devices, as well as process technology and device modeling and simulation. The conference scope not only encompasses devices in silicon, compound, and organic semiconductors, but also emerging material systems.

The IEEE Electron Devices Society is dedicated to promoting excellence in the field of electron devices, and sponsors the IEDM. Learn more at https://eds.ieee.org/.

Forward-Looking Statements

All statements in this press release that are not historical are forward-looking statements, including, among other things, its market position and market opportunity, expectations and plans as to its product development, manufacturing and sales, and relations with its partners and investors. These statements are not historical facts but rather are based on Smartkem,

Inc.'s current expectations, estimates, and projections regarding its business, operations and other similar or related factors. Words such as "may," "will," "could," "would," "should," "anticipate," "predict," "potential," "continue," "expect," "intend," "plan," "project," "believe," "estimate," and other similar or elated expressions are used to identify these forward-looking statements, although not all forward-looking statements contain these words. You should not place undue reliance on forward-looking statements because they involve known and unknown risks, uncertainties, and assumptions that are difficult or impossible to predict and, in some cases, beyond the Company's control. Actual results may differ materially from those in the forward-looking statements as a result of a number of factors, including those described in the Company's filings with the Securities and Exchange Commission. The Company undertakes no obligation to revise or update information in this release to reflect events or circumstances in the future, even if new information becomes available.

Logo - https://mma.prnewswire.com/media/2822344/5663848/Logo___Smartkem.jpg

View original content to download multimedia:https://www.prnewswire.com/news-releases/smartkem-unlocks-new-generation-of-flexible-biometrics-with-world-first-all-organic-sensor-302637842.html

SOURCE Smartkem