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Smartkem

# Smartkem Expands Extensive IP Portfolio with New MicroLED Display Manufacturing Patent

*Innovative MicroLED Manufacturing Method Promises Greater Efficiency and Reusability*

MANCHESTER, England, June 23, 2025 /PRNewswire/ -- Smartkem (Nasdaq: SMTK), which is seeking to change the world of electronics with a new class of transistor technology, today announced that it has received a UK patent for a new method for MicroLED display manufacturing, adding to its extensive IP portfolio. The new patent covers the patterning of an organic thin-film transistor (OTFT) backplane on top of, and selective removal of MicroLEDs from, a source wafer.

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Smartkem Chairman and CEO, Ian Jenks, comments, "Smartkem has a robust IP portfolio with 140 granted patents across 17 patent families, as well as 40 codified trade secrets. This patent covers a novel technique for MicroLED display manufacturing that not only enhances efficiency, but also has the potential to significantly reduce material waste and production costs."

The patent covers a MicroLED display manufacturing method that offers a more efficient and sustainable alternative to monolithic MicroLED display manufacturing techniques by selectively transferring only the necessary LEDs from a growth substrate to a display substrate, rather than fabricating the entire display on a single substrate. The process begins by preparing a MicroLED wafer and applying an adhesion layer, leaving selected MicroLEDs exposed. An OTFT backplane is then deposited onto the adhesion layer and aligned to connect with the exposed LEDs. This assembly is subsequently removed from the original wafer and transferred onto a new display substrate.

Unlike traditional monolithic display methods, where MicroLEDs and transistors are grown together on a single source wafer, this patented approach using selective removal of MicroLEDs means the source wafer can be reused many times. This allows for a lower cost of display compared to one that uses the entire source wafer in one process.

## 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 provides prototyping services at the Centre for Process Innovation (CPI) in Sedgefield, UK. It operates a field application office in Hsinchu, Taiwan, close to collaboration partner, The Industrial Technology Research Institute (ITRI). 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 our [website](#) or follow us on [LinkedIn](#).

### **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 related 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.

### **Industry Representatives and Media**

Selena Kirkwood  
Head of Communications for Smartkem  
T: +44 (0) 7971 460 364  
[s.kirkwood@smartkem.com](mailto:s.kirkwood@smartkem.com)

### **Analysts and Investors**

David Barnard, CFA  
Alliance Advisors Investor Relations  
T: 1 415 433 3777  
[dbarnard@allianceadvisors.com](mailto:dbarnard@allianceadvisors.com)

Logo -

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