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Smartkem and AUO Partner to Develop a New Generation of Rollable, Transparent MicroLED Displays

Collaboration marks the first microLED display product in development using Smartkem's technology. MicroLED displays provide superior brightness, efficiency and lifespan compared to existing technology. Technology is expected to run on ITRI's Gen 2.5 assembly line.

MANCHESTER, England, Nov. 25, 2024 /PRNewswire/ -- Smartkem (NASDAQ: SMTK), positioned to power the next generation of displays using its disruptive organic thin-film transistors (OTFTs), has partnered with AUO, the largest display manufacturer in Taiwan, to jointly develop the world's first advanced rollable, transparent microLED display using Smartkem's technology.

"We believe that collaborating with global display industry leader AUO to develop a novel microLED display puts Smartkem's technology on the frontier of microLED display commercialization. Our unique transistor technology is expected to enable display manufacturers to efficiently produce microLED displays, making mass production commercially viable. Smartkem's technology has the potential to take today's microLED TVs from high end market prices of $100,000 down to mass market prices," stated Ian Jenks, Smartkem Chairman and CEO.

"Because our transistors are processed at such a low temperature compared to other technologies, we are able to pour them directly on top of the microLEDs, completely eliminating the problematic mass transfer and laser welding processes required with other technologies. The key feature that enables the development of this microLED display is our unique low temperature process that allows the use of low-cost, flexible plastic rather than glass. We believe that, if successful, this collaboration will be a significant milestone for Smartkem in its road to commercialization, and for microLED display product development using our technology."

Dr. Wei-Lung Liau, Chief Technology Officer of AUO, commented, "AUO has dedicated years to developing the ultimate MicroLED display technology, forging alliances with ecosystem partners to enable mass production. In this collaboration, AUO has developed

groundbreaking technologies that boost the high transparency and free-form in applications of MicroLED. With proprietary materials from Smartkem and the OTFT production process from ITRI, we are collaboratively developing the world's first rollable MicroLED display for potential commercialization with cost advantage. We believe this will create new opportunities for the display industry and continue to expand value chain partner cooperation and influence."

Leading display analyst and DSCC (Display Supply Chain Consultants) CEO, Ross Young, commented, "This is an exciting project that, if successful, will demonstrate the cost effectiveness of Smartkem's technology in the most demanding of MicroLED applications, and could generate substantial market interest."

Smartkem's Disruption to the MicroLED Display Market
Smartkem believes it is poised to transform the display industry with a new class of microLED displays that are low-cost, thin, transparent, flexible and lightweight. This is made possible by Smartkem's OTFTs that are processed at an industry comparatively low temperature, enabling them to be processed directly on top of microLEDs in the manufacturing of microLED displays, eliminating the need for mass transfer and laser welding processes required by existing technology. This introduces an entirely new "Chip-First" display architecture to the display market that is not currently possible using other transistor technologies. Additionally, Smartkem's low temperature feature enables processing of Smartkem's OTFTs on a plastic substrate, rather than glass, that is low-cost, thin, transparent, flexible and lightweight.

The project between Smartkem and AUO will commence on January 1, 2025. The collaboration has been awarded a grant from the 2024 Taiwan-UK Research & Development Collaboration, supported by The Taiwanese Ministry of Economic Affairs and Innovate UK, part of UK Research and Innovation (UKRI).

About the 2024 UK-Taiwan Collaborative R&D Initiative
The 2024 UK-Taiwan Collaborative R&D Initiative has invested more than £10 million this year to promote bilateral industrial technology research and development cooperation. The nine award-winning projects will promote the joint development of advanced technologies in fields such as electrical information communication, biomedicine, and electromechanical by Taiwan-UK enterprises.

About Smartkem
Smartkem is seeking to reshape the world of electronics with its disruptive organic thin-film transistors (OTFTs) that have the potential to revolutionize the display industry. Smartkem's patented TRUFLEX® liquid semiconductor polymers can be used to make a new type of transistor that can be used in a number of display technologies, including next generation microLED displays. Smartkem's organic inks enable low temperature printing processes that are compatible with existing manufacturing infrastructure to deliver low-cost displays that outperform existing technology.

Smartkem develops its materials at its research and development facility in Manchester, UK and provides prototyping services at the Centre for Process Innovation (CPI) at Sedgefield, UK, It has a field application office in Taiwan. The company has an extensive IP portfolio including 125 granted patents across 19 patent families and 40 codified trade secrets. For more information, visit: www.Smartkem.com and follow us on LinkedIn

www.linkedin.com/company/Smartkem-limited and Twitter @SmartkemOTFT.

About AUO
AUO was founded in 1996 and is an innovative, technology-oriented company that offers products and solutions with display-centric technology that push the boundaries for smart mobility, industrial intelligence, energy, retail, healthcare, as well as enterprise and education. The company is based in Taiwan and operates across Asia, the US and Europe, with a global team of 38,000 people. AUO's consolidated net revenue in 2023 was USD 8.07 billion. For more information visit: AUO

Forward-Looking Statements
All statements in this press release that are not historical are forward-looking statements, including, among other things, statements relating to the Smartkem's expectations regarding the effect of the Nasdaq listing on its common stock, 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.

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