December 1, 2025

Smartkem to Present Disruptive MicroLED Technology at IDW Japan 2025

Smartkem Head of Technology Transfer, Steven Tsai, will present Smartkem's breakthrough MicroLED-in-Package (MiP4) Backlight at IDW Japan on Thursday, December 4, 2025.

MANCHESTER, England, Dec. 1, 2025 /PRNewswire/ -- Smartkem, Inc. (NASDAQ: SMTK), a company developing a new class of organic semiconductor technology, will be presenting its first MicroLED-in-Package Backlight at the 32nd International Display Workshops (IDW) Conference in Hiroshima, Japan, on Thursday, December 4, 2025 at 16:40 local time.

In a special topic of interest segment on Micro/Mini LEDs to be chaired by Rumiko Yamaguchi (Akita Univ.) and co-chaired by Tauto Nakanishi (JNC), Steven Tsai, Smartkem's Head of Technology Transfer, will be delivering a presentation based on the publication of a technical paper titled 'From Chip to Panel: High-Brightness, Low-Power Mini-LED Backlighting via MicroLED-in-Package (MiP4)'.

First debuted at Touch Taiwan in April 2025, and exhibited at Display Week in May 2025, Smartkem's first MicroLED-in-Package (MiP4) backlight using its proprietary technology has the potential to disrupt the global display market. Smartkem's 'chip-first' MicroLED architecture introduces a breakthrough approach to MicroLED display manufacturing with a low temperature process that simplifies production, improves yields and delivers an enhanced display performance. This new MicroLED-in-Package (MiP4) backlight simplifies assembly and yield management for display manufacturers and is designed for seamless integration of MicroLEDs to enhance today's Liquid Crystal Display (LCD) market, which represents approximately 65% of the global display industry[1].

Presenter	Steven Tsai, Head of Technology Transfer
Location	Phoenix Hall, International Conference Center Hiroshima, Japan
Date	Thursday, December 4, 2025
Time	16:40 local time
Presentation Title	From Chip to Panel: High-Brightness, Low-Power Mini-LED Backlighting via MicroLED-in Package (MiP4)
Abstract	We present MiP4, a Mini-LED structure integrating four sub-85um sized uLEDs in series via RDL on glass. The chip supports native 12V operation, reducing power loss and SMT complexity. Compared to COB, MiP4 reduces GaN usage by 84 percent while achieving 34,047 nits peak brightness in a 400-zone backlight.

Steven Tsai will be in attendance throughout the conference from December 3-5, and available for 1-on-1 meetings to showcase Smartkem's first 12.3-inch MicroLED-in-Package (MiP4) backlight.

Smartkem's MiP4
At the core of this advancement is Smartkem's proprietary Redistribution Layer (RDL) material, which interconnects four chip-first MicroLEDs in a series to form a single high-voltage chip—the MiP4. This MiP4 package is designed to replace existing MiniLED packages in LCD backlights and signage applications, offering:

- Higher brightness at lower power
- Lower expected production costs
- Compatibility with existing MiniLED die bonding equipment
- Shipping in MiP4-on-blue tape format for seamless industry adoption

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.

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.

[1] Omdia Report

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