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## **JOLED, Panasonic Production Engineering, and SCREEN Finetech Solutions conclude a business cooperation agreement related to sales and servicing of production equipment for large sized printed OLED displays for TV use**

JOLED Inc. (headquartered in Chiyoda-ku, Tokyo; Representative Director & President: Tadashi Ishibashi), which develops, manufactures, and sells organic light-emitting diode (OLED) displays, Panasonic Production Engineering Co., Ltd. (headquartered in Kadoma, Osaka Prefecture; Representative Director & President: Tsutomu Yanagimoto), which develops and designs production equipment, and SCREEN Finetech Solutions Co., Ltd. (headquartered in Kyoto, Kyoto Prefecture; Representative Director, President: Toshio Hiroe), which supplies various types of equipment used in display manufacturing processes and related services, have concluded a business cooperation agreement related to development, manufacture, sales, and service of printing equipment for manufacture of large sized printed OLED displays, intended mainly for use in TVs.

JOLED plans to move forward on licensing of manufacturing technologies using its printing method to manufacturers and other companies aiming to manufacture OLED displays for use in large-sized TVs. As part of these efforts, the three companies will jointly develop businesses in development, manufacture, sales, and service of printing equipment for customers. The three companies will strive to commercialize the business swiftly to promote broad use of the printing method, which enables efficient production, and to facilitate their own growth and business expansion by capturing growing demand in the continually expanding OLED TV market.

OLED displays are self-illuminating devices that deliver superb picture quality with high contrast, high color reproducibility, and a fast response rate. Their other advantages include the ability to balance low energy consumption with thin forms and light weights. In recent years, they are seeing increasing use in applications such as large sized TVs and smartphones. With flexibility from use of plastic substrates and further improvements in their thinness and lightness, they also can be expected to promise new applications such as use in automotive onboard displays, and they are attracting increasing attention as next-generation displays.

The printing method of manufacturing OLED displays is a technology for coating and forming of OLED materials through printing. Since it simplifies the production process compared to the conventional chemical vapor-deposition method, it is expected to offer considerable benefits in areas such as efficiency of material use and capital investment, especially for the production of large sized displays. The Manufacturing Technology and Engineering Division and OLED Display Development Division of Panasonic Corporation began working together to develop printed OLED displays in around 2006, and since its founding in 2015 JOLED and Panasonic Production Engineering have continued joint development of printing equipment while JOLED has established mass-production technologies, including related processes. At present, the 21.6-inch

4K OLED displays manufactured on the pilot line are shipped for use in applications such as medical monitors and high-end monitors.

JOLED's technology licensing activities include provision of technologies for manufacture of printed OLED displays and supporting their adoption. Utilizing its experiences in design and development of production equipment that has supported manufacturing in the Panasonic Group as well as support for setting up such equipment, and its experience in joint development of printing equipment with JOLED, Panasonic Production Engineering will handle design and development of printing equipment to match its customers' needs. SCREEN Finetech Solutions, utilizing its network and its experience in providing various types of equipment used in display manufacturing processes and related services to customers in Japan and around the world, will manufacture printing equipment under license to Panasonic Production Engineering, and will sell it and provide maintenance and other services together with JOLED.

All three companies will combine their technologies and knowledge to develop a full-fledged structure for supporting customers' adoption of this technology, while also striving diligently toward its swift commercialization.

#### **About JOLED**

JOLED Inc. is headquartered in Tokyo and uses its Ishikawa, Kyoto, and Atsugi Technology Development Centers as bases to conduct research, development, manufacturing, and sales activities for OLED displays, their parts, materials, manufacturing equipment, and associated products. JOLED was founded in January 2015, combining the OLED display development divisions of Sony Corporation and Panasonic Corporation, with the goal of accelerating mass production development and commercialization of OLED displays.

In 2016, the company started up a pilot line (substrate size: G4.5), establishing a mass production technology and improving productivity. Later, in December 2017, JOLED began shipment of its first product, the 21.6-inch 4K OLED display. To further expand the business, in July 2018, JOLED established Nomi site in Nomi city, Ishikawa prefecture. Now the company started establishing the world's first mass production line for printed OLED, aiming to commence production in 2020.

<https://www.j-oled.com/english/>

#### **About Panasonic Production Engineering**

From its head office in Kadoma, Osaka Prefecture, and facilities in Kofu and Fukuoka, Panasonic Production Engineering Co., Ltd. (hereinafter "PPE") does business in the five domains of (i) development of equipment under contract, (ii) standard machinery, (iii) molding, (iv) software and technical services, and (v) new businesses. PPE was founded in April 2014 through the merger of the equipment, molds, and dies section under Panasonic Corporation's Corporate Production Engineering Division and Panasonic Production Technology Co., Ltd., with the goal of delivering solutions that embody the expertise and 13 production-technology platforms amassed by Panasonic Corporation's Corporate Production Engineering Division.

The printing method of producing OLED displays was developed jointly by the Corporate Production Engineering Division and the OLED Display Development Division. In 2013, it was the first in the world to realize a 56-inch 4K2K OLED panel fully through RGB printing. It has continued development of equipment since then, helping to support JOLED's printing equipment including its pilot line.

PPE aims to contribute to the advancement of its customers' businesses around the world, by delivering advanced, reliable production goods, systems, and solutions through taking on the challenges of future advanced technologies and pursuing optimized manufacturing, based on a core of production technologies amassed by Panasonic Corporation.

<https://www.panasonic.com/jp/company/ppe.html>

### **About SCREEN Finetech Solutions**

Headquartered in Kyoto, SCREEN Finetech Solutions Co., Ltd. delivers to its customers integrated solutions from technological development through manufacture of equipment and servicing of equipment after delivery, all based on a core of the surface treatment technologies it has built up in various industries over many years. In addition to a display coater/developer that boasts the industry's largest market share, its product lineup also includes various types of film deposition equipment for use in energy-related industries and other fields. It took over the flat panel display (FPD) equipment business and other equipment businesses from Dainippon Screen Manufacturing Co., Ltd. (Currenty, SCREEN Holdings Co., Ltd.) in 2014, when it was spun off as an independent company. It will continue to propose new solutions to its customers in advanced fields in the future as well.

[www.screen.co.jp/eng/fpd/index.html](http://www.screen.co.jp/eng/fpd/index.html)

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