

December 6, 2017

DIC Corporation

**DIC and U.S. Firm Nanosys Announce Collaboration in the
Development of Inks for Use in the Production of Inkjet-Printed
Quantum Dot Color Filters for Displays**

DIC and Milpitas, California-based Nanosys, Inc., today announced that they are working together to develop inks for use in the production of inkjet-printed quantum dot color filters (QDCFs) for displays. The two companies are scheduled to present recent breakthroughs at the MEET4 session of the 2017 International Display Workshops in Sendai, Japan, which is being held from December 6–8, 2017. (<https://www.idw.or.jp/>)

Quantum dots (QDs) are light-emitting inorganic semiconductor nanoparticles. Because the color emitted can be controlled freely by changing dot size, QDs are garnering considerable attention as a material for next-generation displays. QDCFs facilitate the manufacture of liquid crystal displays (LCDs) and organic electroluminescent displays (OLEDs) that are more power efficient and deliver a wider color gamut and viewing angle than existing units. Inkjet printing is seen as superior to conventional photoresists as a method for placing QDs in QDCFs for large-area displays as it minimizes the QD loss. While high fabrication costs for QDs, a state-of-the-art material, currently constitute a major hurdle to demand growth, the use of inkjet printing will make low-cost mass production of QDCFs a reality.

At present, most of the QDs used in displays are cadmium-based. However sustainability concerns continue to fuel strong demand for the development of cadmium-free alternatives. A global leader in the area of cadmium-free QDs, Nanosys is a top QD manufacturer with extensive expertise and multiple exclusive patents. DIC is one of the world's largest manufacturers of printing inks and boasts an extensive portfolio of dispersion, mixing, resin and other technologies used in ink development and production. By collaborating on development, the two companies seek to leverage Nanosys' expertise in cadmium-free QDs and DIC's inkjet ink design technologies to develop the world's first cadmium-free QD inkjet inks for the inkjet printing of QDCFs. Efforts are focusing on inks that deliver jettability across a wide range of print heads and can be tuned for both ultraviolet (UV) and thermal curing, allowing deployment on diverse manufacturing lines.

DIC will continue promoting development with the goal of marketing QD inkjet inks, which will join the Company's LC materials and organic pigments for color filters as key offerings in this area, in 2020.

News Release



About Nanosys, Inc.

Headquartered in Silicon Valley, California, Nanosys, Inc. is a global leader in developing and delivering state-of-the-art QDs to the display industry. Founded in 2001, the company boasts an adjacent QD fab with an annual production capacity of more than 25 tons, making it the world's largest such facility. Nanosys' proprietary QDEF® technology enables displays for a broad range of applications, from tablets to televisions, to deliver vivid color, lifelike brightness and superb power efficiency.

<http://www.nanosysinc.com/>

For customer inquiries, please contact the Marketing Division at +81-3-6733-5921.

Inkjet-printed pattern on a QDCF

