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News Release

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Merck KGaA, Darmstadt, Germany, Wins German Innovation Award with Liquid Crystals

- **Recognition for innovative and energy-saving technology for touchscreens of smartphones and tablet PCs**

Darmstadt, Germany, April 25, 2015 – Merck KGaA, Darmstadt, Germany, a leading company for innovative and top-quality high-tech products in healthcare, life science and performance materials, announced today that it has won the German Innovation Award in the category "Large Enterprises" for its innovative liquid crystal technology.

The technology, UB-FFS (Ultra Bright Fringe Field Switching), which was recognized yesterday at a ceremony in Munich, Germany, has made possible energy-efficient liquid crystal touchscreens for smartphones and tablet PCs that illuminate brilliant colors and still achieve a long battery life. UB-FFS, which is particularly translucent and energy-efficient, was launched onto the market with the latest generation of smartphones in 2014.

"Our innovation is a superb example of a successful key technology from Germany," said Bernd Reckmann, Executive Board Member of Merck KGaA, Darmstadt, Germany, responsible for Performance Materials and Life Science, at the award ceremony. "We hold more than 2,500 patents for liquid crystals. With this expertise, we will continually enhance the display properties of mobile devices." Our company is building on a tradition of innovation dating back nearly 350 years. The company is currently investing in an interdisciplinary Innovation Center at its site in Darmstadt to also secure profitable growth in the future.

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Merck KGaA

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The German Innovation Award, which is sponsored by the German Federal Ministry for Economic Affairs and Energy, is awarded annually by the companies Accenture, EnBW and Evonik to German enterprises whose future-oriented developments change the business and markets with their innovative strength. The award was presented by Frank Riemensperger, Accenture's geographic lead for Austria, Switzerland and Germany.

The award-winning UB-FFS technology

Mobile device applications pose entirely new demands on LCD technology. The displays of mobile devices must be easily readable from a wide variety of different viewing angles. This called for the development of an entirely new liquid crystal technology known as fringe field switching (FFS). In addition, displays for mobile devices should not simply freeze in regions with harsh winters and temperatures of -40°C. Plus, with classic LCDs, a gentle press of a finger will distort the image. This had to be avoided with touchscreens.

With mobile devices, the greatest challenge is energy efficiency, and this is where the display plays a key role. When videos are running at full brightness, this can account for half of the electrical power consumed by the device. UB-FFS technology addresses this tremendous power-saving potential. UB stands for ultra bright, which precisely describes the advantage. UB-FFS exploits 15% more of the display's backlight and so saves 30% of the energy required by the devices. The new technology offers many advantages: Firstly, it reduces energy consumption and increases the battery life of the mobile devices. Secondly, it improves mobile display quality and supports the trend towards higher resolutions. The market launch is proceeding faster than expected. The new switching mode is already used in many smartphones and tablet PCs.

Most recently, UB-FFS technology from Merck KGaA, Darmstadt, Germany, was [recognized](#) in November 2014 with the Meyer-Galow Prize for business chemistry.

In March of this year, Merck KGaA, Darmstadt, Germany, received the [German Industry Innovation Award](#) in the category "innovative HR concepts" for innovative approaches to research and development.



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Merck KGaA of Darmstadt, Germany, is a leading company for innovative and top-quality high-tech products in healthcare, life science and performance materials. The company has six businesses – Biopharmaceuticals, Consumer Health, Allergopharma, Biosimilars, Life Science and Performance Materials – and generated sales of € 11.3 billion in 2014. Around 39,000 employees work in 66 countries to improve the quality of life for patients, to foster the success of customers and to help meet global challenges. Merck KGaA, Darmstadt, Germany, is the world's oldest pharmaceutical and chemical company – since 1668, the company has stood for innovation, business success and responsible entrepreneurship. Holding an approximately 70% interest, the founding family remains the majority owner of the company to this day. Merck KGaA, Darmstadt, Germany holds the global rights to the Merck name and brand. The only exceptions are Canada and the United States, where the company operates as EMD Serono, EMD Millipore and EMD Performance Materials.