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Team from Merck KGaA, Darmstadt, Germany receives the Meyer-Galow Prize for business chemistry: Liquid crystals for energy-efficient smartphones and tablets

Darmstadt, Germany, November 14, 2014 – Approximately 95% of all smartphone and tablet displays are based on liquid crystal technology. Merck KGaA, Darmstadt, Germany is the global market and technology leader in liquid crystals, coming in large-size flat screen TVs, as well as in mobile phones, digital cameras and much more. In order to maintain a competitive edge, it is essential to constantly improve the performance of liquid crystals. A team at Merck KGaA, Darmstadt, Germany has achieved significant advancements in displays for smartphones and tablet PCs, for which it has been awarded the 2014 Meyer-Galow Prize for business chemistry. This award by the German Chemical Society (GDCh) was presented today by its President, Thomas Geelhaar, during a ceremony at Merck KGaA, Darmstadt, Germany. The prize went to Michael Heckmeier, Harald Hirschmann, Roman Maisch and Sang-Kyu Lee for the work they began around five years ago.

Within the scope of the project "Energy-efficient liquid crystals for smartphones and tablets" at Merck KGaA, Darmstadt, Germany, chemists, physicists, engineers and marketing experts, in particular prizewinners Heckmeier, Hirschmann, Maisch and Lee, developed new liquid crystal technologies in close liaison with display manufacturers. Liquid crystals enable fast-switching displays featuring high contrast, a broad viewing angle and high resolution, which can be used in touch panel devices. Significant improvements have been accomplished with the new developments from Darmstadt. The liquid crystal mixtures are called, for example, "IPS" (In-Plane Switching) and "FFS" (Fringe Field Switching) and are

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optimized for use in tablets and smartphones. Five years after the start of the project, nearly 90% of all smartphones now have IPS/FFS displays. A special advantage is the significantly lower energy consumption of the devices. A further developed technology, "UB FFS" (Ultra-Brightness Fringe Field Switching), can reduce the energy consumption even further.

Karl-Ludwig Kley, Chairman of the Executive Board of Merck KGaA, Darmstadt, Germany, expressed his special appreciation of the team's achievements during the award ceremony by saying, "...this underlines our claim to market and technology leadership in liquid crystals. The successful project also demonstrates the advantages of working in interdisciplinary teams and interacting with our customers."

The Meyer-Galow Prize, created in 2012, was donated by Professor Erhard Meyer-Galow, former Chairman of the Board of Management of Hüls AG and former President of the GDCh. The prize has been awarded by the GDCh annually since then. Meyer-Galow mainly worked at the interface between chemistry and market and held lectures at the University of Münster on "Business chemistry in the chemical industry". In Darmstadt, he emphasized, "Today we are honoring chemical products and processes that are particularly sustainable and highly valuable to society."

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About display materials from Merck KGaA, Darmstadt, Germany

A brilliant home theater experience or crystal-clear road maps displayed on your navigation system: Liquid crystals from Merck KGaA, Darmstadt, Germany work their magic in creating a sharp picture on monitors – which we cannot do without in our daily routine marked by communications. They come in ultra-flat big screen televisions, as well as in mobile phones, electronic toys and digital cameras. Merck KGaA, Darmstadt, Germany develops special liquid crystal mixtures for all types of display technology. With more than 40 years of experience in the field of liquid crystals, Merck KGaA, Darmstadt, Germany is the world's leading manufacturer of materials needed for liquid crystal displays (LCDs: liquid crystal displays). Merck KGaA, Darmstadt, Germany also produces materials for organic light emitting diodes (OLEDs).

As an innovation leader, Merck KGaA, Darmstadt, Germany is constantly developing new technologies and markets for its customers in close cooperation with the research and development departments in the display industry. The advanced LCD materials and high-quality liquid crystal mixtures developed specifically for customers by the Merck KGaA, Darmstadt, Germany laboratories are also suitable for making future applications and ideas a reality. www.emd4displays.com



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Merck KGaA, Darmstadt, Germany is a leading company for innovative and top-quality high-tech products in the pharmaceutical, chemical and life science sectors. With its four divisions EMD Millipore, EMD Serono, Performance Materials and Consumer Health, Merck KGaA, Darmstadt, Germany generated total revenues of € 11.1 billion in 2013. Around 39,000 employees work in 66 countries to improve the quality of life for patients, to further 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 Merck KGaA, Darmstadt, Germany to this day. The company is holding the global rights to the Merck name and brand. The only exceptions are Canada and the United States, where the company is known as Merck KGaA, Darmstadt, Germany.