

04/23/2015 Press release Pressemitteilungen

Additive color mixing: Merck KGaA, Darmstadt, Germany and Siegwerk implement innovative printing technology

In close cooperation with its long-standing partner Merck KGaA, Darmstadt, Germany, Siegwerk has implemented a newly developed printing method using additive color mixing with pearlescent pigments. The first printed results will be exhibited at the European Coatings Show 2015 in Nuremberg.



The first results of additive color mixing as a joint project

Everyone is familiar with the deep black of a TV screen that displays a full RGB color spectrum at the flip of a switch. Merck KGaA, Darmstadt, Germany has now taken this idea to patent a new printing method. Instead of reproducing pictures with the four process colors cyan, magenta, yellow and black (CMYK) on a white background (subtractive color mixing) the process uses the pearlescent colors red, green and blue (RGB) on a black surface (additive color mixing). Siegwerk produced the respective pearlescent inks with pigments from Merck KGaA, Darmstadt, Germany. The RGB process called for a totally new reproduction technology in the prepress phase.

“Basically, picture reproduction using additive color mixing is independent of the printing process used,” explains Wolfram Gieseke, Head of R&D BU Tobacco, who accompanied the cooperation with Merck KGaA, Darmstadt, Germany. “However, gravure printing is predestined for it because it offers the best conditions for the transmission of the pearlescent pigments. The new method can be deployed across business units – with creative opportunities and implementation scenarios for very diverse applications.”

The printed products will be exhibited as a cooperation project at Merck’s booth during the European Coating Show (April 21 – 23) in Nuremberg. The trade fair covers trends and technologies in the production of inks, varnishes, sealing agents, building chemistry materials and glues. It is one of the most important European events for Siegwerk’s development departments and for staff involved in chemicals procurement.

About Merck KGaA, Darmstadt, Germany

Effect pigments from Merck KGaA, Darmstadt, Germany: Merck KGaA, Darmstadt, Germany, is one of the world’s leading suppliers of effect pigments for the coatings, plastics, printing, cosmetic, food and pharmaceutical industries. Effect pigments underscore the emotional impact of color and are an important design element when creating surfaces with special impressions or qualities. Application possibilities range from cars to packaging and high-tech products up to building facades. In addition to decorative effect pigments, we offer pigments that also have functional applications such as heat-reflecting or anti-counterfeiting pigments.

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.

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