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## News Release

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### **Innovative Laser Pigments: Merck KGaA, Darmstadt, Germany, at the Laser World of Photonics 2015**

- **Four new Iriotec® products**
- **LDS process transforms plastic components into 3D Mechatronic Integrated Devices (3D-MID)**
- **Live demonstration: Individualized plastic marking via tablet app**

Darmstadt, Germany, June 17, 2015 – Merck KGaA, Darmstadt, Germany, a leading company for innovative and top-quality high-tech products in the healthcare, life science and performance materials sectors, will be presenting novel laser marking pigments and processes at the Laser World of Photonics 2015. At this exhibition in Munich, Germany from June 22 to 26, 2015, Merck KGaA, Darmstadt, Germany, the world market leader in effect pigments, will be presenting four new products and a newly developed application that could revolutionize electronic products.

#### **Four new laser pigments set accents**

Laser pigments save time and raw materials. Incorporated directly into the final product, they create markings precisely where the beam of light is targeted. Our researchers have now developed to market readiness four new pigments that will open up further applications for fast, cost-effective and permanent laser markings.

Iriotec® 8210 pigment granules were specifically developed for the marking of plastics that come into contact with food. With Iriotec® 8850, thin layers can now also be laser-marked effectively. It creates fast and precise dark markings, not only in polymers, but

Page 1 of 3

#### **Merck KGaA**

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## News Release

also in powder coatings. Iriotec® 8815 produces razor-sharp, light markings that create good contrasts, particularly on colored plastics. And lastly Iriotec® 8841: In combination with the laser direct structuring (LDS) process, the pigment may have the potential to revolutionize the world of electronics.

### **Light and pigments generate mechatronic integrated devices**

Modern electronic devices are becoming increasingly smaller and easier to hold – not only in consumer electronics, but also in medicine. This development could promote a process patented by LPKF Laser & Electronics AG in combination with products from the Iriotec® 8000 series. It directly mounts electronic circuits onto injection-molded plastic or powder coated metal parts, which then become circuit boards themselves – regardless of their shape.

The process is known as laser direct structuring (LDS). Its result is called 3D-MID (MID stands for molded interconnect device, more commonly known today as mechatronic integrated device). Incorporated into the polymer or powder coating material, Iriotec® creates metal track structures precisely where the laser produces the circuit layout on the device directly from the computer screen. During the subsequent metallization, the copper unites firmly with the part, transforming the component into a 3D-circuit carrier.

Mechatronic integrated devices have many advantages. They reduce the size and weight of components and support the trend towards the miniaturization of laptops and mobile phones, for example. They can also make small medical devices such as endoscopic lamps or hearing aids smaller and more comfortable. 3D-MID offers designers the opportunity to create prototypes or prototype series quickly and economically – and to considerably shorten the path from blueprint design to series production.

### **An app to transfer the marking from the tablet to the cup**

Live demonstrations at our 36 square meter stand will show visitors how quickly fast razor-sharp laser markings can be created with Iriotec®. Using the Laser CombiLine Basic WT from ROFIN-SINAR Laser GmbH, booth staff will mark a plastic cup with



## News Release

individual texts via a tablet app to steer the laser beam. And visitors who wish to enter their own personalized text on the tablet can have this permanently laser-marked on a cup to take home.

Visitors to the Laser World of Photonics 2015 in Munich from June 22 to 25 will find Merck KGaA, Darmstadt, Germany, in **Hall A3, Booth 229**.

**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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