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## News Release

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### **Merck KGaA, Darmstadt, Germany, Presents Liquid Crystal Window Technology at BAU 2015**

- **Liquid crystal mixtures from Merck KGaA, Darmstadt, Germany, enable intelligently switchable windows that reduce energy consumption**
- **With its licrivision™ product range, Merck KGaA, Darmstadt, Germany, is positioning itself as a materials supplier in an attractive, new segment**
- **The Liquid Crystal Window technology can adjust the intensity of incident daylight in seconds**

Darmstadt, January 15, 2015 – Merck KGaA, Darmstadt, Germany, will be represented at the BAU 2015 exhibition in Munich, Germany, for the first time with its newly developed liquid crystal window technology. With its state-of-the-art liquid crystal mixtures, the company has been the global market and technology leader for many years. While liquid crystals have mainly been used in television, smartphone and laptop displays until now, Merck KGaA, Darmstadt, Germany, is leveraging its unique technology for smart window systems to open up new application areas. As a leading materials supplier, Merck KGaA, Darmstadt, Germany, is developing this technology together with partners from the glass, window and facade industry.

BAU, the world's leading exhibition for architecture, materials and systems, offers Merck KGaA, Darmstadt, Germany, an ideal opportunity to present Liquid Crystal

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Windows (LCW) to a large audience of experts. This innovation, which is to be marketed under the licrivation™ brand, will be able to optimize light and thermal impact on glazed surfaces in the future, thereby conserving significant amounts of energy.

This is possible by placing special liquid crystal mixtures between two panes of glass. Similar to liquid crystal displays, liquid crystals in windows can be brought into various alignments by applying a voltage to them. Depending on the alignment, more or less light passes through the liquid crystal layer and thus through the window.

“We believe the liquid crystal window technology will be very promising in the future, and we view it as a further innovative application for liquid crystals,” explained Inese Lowenstein, the new Head of the company’s Display Materials business unit since January 2015. “Liquid Crystal Windows can be produced using all conventional window glass systems and afford architects maximum freedom – in terms of individual size, shape and color options.”

Various window sizes are currently being tested in pilot projects. Merck KGaA, Darmstadt, Germany, is working in close partnership with established window manufacturers and researching additional possibilities for switching liquid crystal windows autonomously based on photovoltaic principles. Then they could be operated independently of the building’s electricity supply.

### **Smart windows – Ideal for large glass facades**

Approximately one-third of global carbon dioxide emissions results from maintaining the interior temperature of buildings at a comfortable level. A great deal of energy is required especially for buildings with glass facades. However, modern architecture would be hard to imagine without large glass surfaces. Thus, there is a great demand for the installation of intelligent and active windows that are capable of meeting modern design requirements while at the same time reducing energy consumption.

With the company’s Liquid Crystal Window technology, the intensity of daylight entering a building can be conveniently adjusted in just seconds. At the same time, the switchable liquid crystals limit solar heat gains. Various options with



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regard to coloring create new prospects for the architectural design of windows and facades. Prototypes of windows with different zones that can be switched individually are also being developed. Exhibition visitors can view these prototypes at the stand of Merck KGaA, Darmstadt, Germany.

Merck KGaA, Darmstadt, Germany, will be demonstrating Liquid Crystal Window technology in Hall C2, Stand 210 at the BAU exhibition in Munich (January 19 to 24, 2015).

Insights from an architect's perspective will be revealed at a talk entitled "A Clear Vision – Liquid Crystal Window Technology". This presentation is being given by Eric Höweler (Höweler + Yoon Architecture, Boston, Massachusetts) as part of the DETAIL research's forum's "Climatic Strategies" series on January 22, 2015 at 4:00 p.m. in Hall 4/338.

More information on licrivision™ is available on the [Web](#).

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