

## PRESS RELEASE

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### NOVALED INTENSIFIES DEVELOPMENT OF TOP EMITTING OLEDs

**Dresden, Germany –Novaled has achieved groundbreaking results in lifetime, voltage and efficiency of top emitting RGB stacks with its PIN OLED technology. Lifetimes for blue OLEDs are up to 16,000 hours, for red and green up to 100,000 hours at an initial brightness of 500 cd/m<sup>2</sup>. This latest performance means that green OLED devices are now outperforming their bottom emission reference samples by a factor of 2.5. White top emission devices achieved a lifetime of 18,000 hours at a driving voltage of 3 V and a starting luminance of 1,000 cd/m<sup>2</sup>.**

The lowest ever reported operating voltage has been realised for green top emission OLED stacks of 2.5 V at 1,000 cd/m<sup>2</sup>. At 95 cd/A, the current efficiency is even higher than for comparable bottom emission devices. These green devices are based on standard emitter material Ir(ppy)<sub>3</sub>.

Top emission OLED structures emitting light away from the substrate are a key feature of future OLED applications. The top emission type increases the aperture ratio above 50% for displays and paves the way for more powerful, large area active-matrix displays. When used in lighting devices, top emission OLEDs enable manufacturers to use cheap non-transparent and flexible substrates.

“Top emission OLEDs are the future of display and lighting applications. With the latest results and performances of its PIN OLED structure, Novaled has confirmed its status as being the best partner for OLED makers” says Jan Blochwitz-Nimoth, CTO of Novaled. “Our technology is currently being tested by different OLED manufacturing companies preparing their entry into mass production.”

#### **About Novaled**

Novaled AG is engaged in the research, development and commercialization of organic light-emitting diode (OLED) technologies and proprietary materials. The company is a spin-off from the University of Dresden and the Fraunhofer-Gesellschaft. Main investors include Crédit Agricole Private Equity, TechnoStart, TechFund Capital Europe and CDC Entreprises Innovation.

Founded in 2001, Novaled experienced rapid growth, maturing into a world-class company. The enterprise commercializes its Novaled PIN OLED™ technology along with its proprietary OLED materials to display makers and lighting companies. The company has a strong IP position in OLED technology based on more than 220 patents granted or pending. [www.novaled.com](http://www.novaled.com)

**About OLEDs**

OLEDs are semiconductors made from thin layers of organic material only a few nanometers thick, which emit light. In a fast growing market OLEDs are key parts of a revolution: the dream of paper-thin, flexible, highly efficient displays with brilliant colours and high contrast is becoming reality. OLEDs represent the future of ultra flat panel displays as well as a vast array of new lighting applications.

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