PRESS RELEASE

LETI PRESENTS 1ST-EVER RESULTS IN LED PIXELIZATION & RECORD HIGH-RESOLUTION FOR MICRO-DISPLAYS AT PHOTONICS WEST

GRENOBLE, France – Feb. 3, 2017 – Leti, a research institute of CEA Tech, today announced it has developed a µLED fabrication process to create high-resolution arrays at 10-micron pitch. That pixelization and the 873 x 500 resolution that are enabled by the new process exceed state-of-the-art technology.

Designed for micro-display applications such as augmented-reality or virtual-reality tools and wearable devices, the blue or green GaN/InGaN µLED arrays use Leti's proprietary self-aligned technology. That process is key to achieving such a small pixel pitch. A combination of several damascene metallization steps used to create a common cathode is also expected to provide good thermal dissipation and prevent voltage drops within the micro-LED matrix. Electro-optical measurements showcase record efficiency and brightness exceeding requirements for device integration.

The results were presented Feb. 2 at SPIE Photonics West in San Francisco in a paper: "Processing and Characterization of High-Resolution GaN/InGaN LED Arrays at 10-Micron Pitch for Micro-Display Applications".

"Leti's self-aligned process allows the creation of high-resolution µLED matrices with a reduced pixel pitch of 10 µm and paves the way towards even smaller pitches for next-generation devices," said Ludovic Dupré, one of the paper's authors. "In addition, the use of the damascene metallization process of the cathode, which also is a new process developed at Leti, is a breakthrough compared to previous demonstrations of micro-LED matrices. The common cathode indeed fills the whole volume between the micro-LEDs and provides metallic spreading of electrical current between them, as well as thermal dissipation. These results are promising for integrating a micro-LED matrix in micro-display devices by hybridization on CMOS active matrices, and first prototypes are currently being tested."

About Leti (France)

Leti, a technology research institute at CEA Tech, is a global leader in miniaturization technologies enabling smart, energy-efficient and secure solutions for industry. Founded in 1967, Leti pioneers micro- & nanotechnologies, tailoring differentiating applicative solutions for global companies, SMEs and startups. Leti tackles critical challenges in healthcare, energy and digital migration. From sensors to data processing and computing solutions, Leti's multidisciplinary teams deliver solid expertise, leveraging world-class pre-industrialization facilities. With a staff of more than 1,900, a portfolio of 2,700 patents, 91,500 sq. ft. of cleanroom space and a clear IP policy, the institute is based in Grenoble, France, and has offices in Silicon Valley and Tokyo. Leti has launched 60 startups and is a member of the Carnot Institutes network. This year, the institute celebrates its 50th anniversary. Follow us on www.leti.fr/en and @CEA_Leti.

CEA Tech is the technology research branch of the French Alternative Energies and Atomic Energy Commission (CEA), a key player in innovative R&D, defense & security, nuclear energy, technological research for industry and fundamental science. In 2015, Thomson Reuters identified CEA as the most innovative research organization in the world.

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