

Carpe Diem Technologies Receives Exclusive License for Nano Imprint Aligned Printed Electronics and Capillary Devices

BOSTON, Mass., Dec. 10, 2019 (SEND2PRESS NEWSWIRE) – Carpe Diem Technologies, Inc. (Carpe Diem) has signed an exclusive license agreement with the University of Minnesota for the commercialization of breakthrough printed electronics technology. The technology is called SCALE (Self-aligned Capillarity-Assisted Lithography for Electronics), and is particularly suitable for printing on flexible substrates, such as paper and plastic.



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As Carpe Diem's CEO John S. Berg explains, "University of Minnesota Professors Daniel Frisbie and Lorraine Francis cleverly harnessed the natural force of capillary action to deliver electronic inks self-aligned into nano imprinted substrates. Immediate applications for this technology include smart labels for consumer products from food to pharmaceuticals, flexible displays, and distributed self-powered sensors."

Until now, these applications were difficult because traditional printing tools (inkjet, screen print, gravure) were inadequate to the task of making the small aligned features required in electronics. "Nano imprint lithography (NIL) solved the problem of the required small dimensions, and, with this invention, simultaneously solves the problem of alignment with the same level of precision."

Using this invention, an initial alignment layer is created with fluid channels which "wicks" the inks to where they are needed. Importantly, this wicking comes from larger reservoirs on the substrate which are easily filled by inkjet (flexo or screen print). The circuit then "virtually" builds itself with dimensions and alignment defined in the first imprint layer.

A complete electronic toolbox of resistors, capacitors, diodes, and transistors has been demonstrated. Carpe Diem is developing applications – NIL masters, and the requisite R2R NIL equipment – and is making those available to customers and sublicensees.

About Carpe Diem Technologies, Inc.:

Carpe Diem and its clients bring nano-enabled products to market with high-precision, high-volume manufacturing solutions.

The company works in the world of nanometers to microns, frequently on low-cost flexible substrates such as paper, plastic, and metal foils or web.

Carpe Diem's modular roll-to-roll system facilitates the development and production of nano-enabled printed electronics, microfluidics, meta materials and optical devices—utilizing the most advanced processes. The manufacturing system has the flexibility to change with customers' needs and as technology evolves.

From NIL with NIL mastering capability, to Spatial ALD. From printing to photolithography, with interferometric alignment and inspection. Carpe Diem's team, solutions, and approach power the new era of products and devices.

Learn more at: <https://carpediemtech.com/>

Contact:

Patrick Tan, COO, 978-618-3959 (direct), ptan@carpediemtech.com

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