

Xerox Research Centre of Canada and NanoIntegrus advance flexible electronic devices with thin film transistor package

MISSISSAUGA, ON., January 19, 2016 – A new materials package developed by [Xerox Research Centre of Canada](#) (XRCC) and [NanoIntegrus](#), a subsidiary of Raymor Industries, will help advance the rapidly expanding wearable and flexible electronics market.

The thin film transistor package combines a novel dielectric ink developed at the XRCC, with a high purity, single-walled carbon nanotube ink developed by NanoIntegrus. The materials package improves the overall performance of printed high-mobility p-type transistors.

Printing transistors, the next frontier in wearable and flexible electronics, offers manufacturers a low-cost way to add intelligence or computing power to a wide range of surfaces, such as plastic or fabric. Printable semiconducting and dielectric materials enable flexible tags, sensors and displays. Compatibility between semiconducting and dielectric materials is critical for reliable processing and device performance.

One of the challenges that has limited the implementation of single-walled, carbon nanotube-based thin film transistors is that they exhibit considerable hysteresis. The thin film transistor package overcomes this issue by using Xerox ink as a dielectric and encapsulant, ensuring compatibility between semiconducting and dielectric materials, and enabling reliable processing and device performance. An upcoming article in the journal *Applied Physics Letters (APL)* discloses how this new materials package addresses these performance issues.

“XRCC and NanoIntegrus are providing a materials package that enables fabrication of highly functional printed electronic components,” said Brynn Dooley, manager of XRCC’s Electronic Materials Business. “This new materials solution will help our clients with their innovation mandates.”

About XRCC

XRCC is the global materials research and development centre for Xerox Corporation. As one of five world-renowned Xerox research facilities, we have a 40-year history of taking materials from concept through to commercialization in a highly competitive technology environment. Our core expertise lies in the design, synthesis, formulation, and scale-up of novel materials. We are a pioneer in the design and manufacturing of electronic materials and offer a portfolio of electronic and specialty material products with industry benchmark performance backed by our history of materials commercialization success.

About NanoIntegris Technologies

NanoIntegris is a subsidiary of Raymor Industries, an industrial-scale producer of SWCNT. NanoIntegris Technologies is the world's leading supplier of high mobility semiconductor solutions. Our inks include high-purity, sorted semiconducting or metallic single-walled carbon nanotubes (SWNTs) and graphene. They are used by leading OEMs and academics to develop the next generation of transparent conductive coatings, transistors, sensors and photovoltaics, as shown by over 500 published scientific studies using these advanced materials. IsoSol-S100 semiconducting ink is the highest purity ink of its kind, which can be formulated in a variety of organic solvents. It received the Best Materials Development Award from IdTechEx at the PE USA 2014 tradeshow, due to the scalability of its production chain.

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For Immediate Release



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