



## NEWS RELEASE

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### **IIMAK Announces New Digital Technology for Printed Electronics Industry: METALLOGRAPH™ Thermal Transfer Ribbons**

(AMHERST, N.Y., November 19, 2008) IIMAK, the leading supplier in the thermal transfer ribbon industry for the past 25 years, has announced its newest product innovation - METALLOGRAPH™ conductive thermal transfer ribbons. Thermal transfer printing is recognized as a standard in industry for printing barcodes on labels. Now, this digital platform can be utilized with IIMAK's new METALLOGRAPH ribbons to print flexible circuits on polyester, polyimide, and other substrates. Digital thermal transfer printing can be a great and often less expensive alternative to other digital printing options.

The conductive characteristics of the METALLOGRAPH ribbons are enabled by silver-coated copper flakes, developed by NanoDynamics, Inc., which are disbursed within IIMAK's proprietary binder systems. The composite flakes, with diameters above 1 micron, are conductive immediately upon printing the thermal transfer ink on a flexible substrate. Their larger particle size and flake morphology substantially increase the inter-particle connectivity required to create conductive pathways. The resulting printed inks have achieved sheet resistivities of less than 0.5 ohms/square, and volume resistivities of less than 80 microohm-cm without sintering.

Daniel J. Harrison, Ph.D., Vice President and CTO of IIMAK reports, "our multi-year development effort with NanoDynamics has enabled the delivery of state-of-the-art inks and digital imaging media technology to the printed electronics industry. A strong alliance has been forged by combining the materials expertise of NanoDynamics with the formulation and production capabilities of IIMAK, and we eagerly anticipate continuing this tandem effort to deliver on the market's present and future needs."

Robust thermal transfer printers designed for the industrial and graphics printing markets are readily available from a variety of manufacturers for minimal equipment investment. With resolution up to 600dpi, thermal transfer printed circuits deliver clear crisp images with sharp lines. The digital technology is cost effective for low volume production and rapid prototyping. METALLOGRAPH ribbons can be used in applications including: Printed Electronics, RFID, Smart Cards & Packaging, Membrane Keyboards and Security.

IIMAK is a multinational company that develops, manufactures, and markets all types of printing, imaging, and marking consumables including inks, thermal transfer ribbons, specialty papers, cartridges, and cassettes. For more information about IIMAK and its products, visit [www.iimak.com](http://www.iimak.com).