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FOR IMMEDIATE RELEASE

## **PRESS RELEASE**

### **Innovative Ink Jet Technologies Ready for Commercialisation**

Only two years after the company was established, Conductive Inkjet Technology (CIT), a joint venture between Xennia and Carclo plc, announced last week that their technology is now ready for commercialisation. Speaking before an audience of over 100 industry professionals at the IMI Ink Jet Printing Conference in Barcelona, Dr Alan Hudd, CEO of Xennia, unveiled the processes used by their innovative technology to ink jet print conductive materials such as copper, silver and gold onto plastics.

The ability to deposit and fix metals onto plastic substrates with a high degree of precision using ink jet technology promises to revolutionize manufacturing processes for a range of devices. CIT's process can print a range of metals on to many different substrates including PET, polycarbonate, PVC, Kapton and FR4 Epoxy.

In CIT's patent protected technology, copper is "deposited" on and around a polymeric honeycomb or sponge, which ensures dense copper coverage with high purity and high conductivity. This method differs from traditional techniques of sintering particles or the decomposition of precursors. In addition, CIT uses a room temperature process and requires no post-processing. According to Dr Hudd, "CIT opens up significant opportunities for process simplification, cost reduction and product innovation for a wide range of applications".

Dr Hudd showed several examples of the technology including copper interconnects, ink jet printed directly onto 60 micron pads on a silicon chip; functioning RFID antennae printed onto plastic film; mobile phone antennae ink jet printed directly onto the phone casing; and super fine conductive features down as low as 5 micron track and gap. The company is also assessing the technology for a number of other applications including windscreen heaters, batteries & fuel cells.

Another young company, established less than two years ago, also presented an update on its activities at the IMI conference. Impika, a spin-off from the French plastic card giant Gemplus, is an integrator and ink jet innovator, with divisions focused on ink jet printing systems (Ink Jet), electronics (Mat Jet) and biotechnologies (Bio Jet).

Impika's current core product is the Impika Printing System (IPS) - a modular ink jet engine, which can be configured by changing the number of printheads, print width, type of ink, and resolution to meet the specific requirements of different applications. Systems have already been developed for overprinting, commercial printing, plastic cards and even object personalisation, such as printing full colour images on pencils.

ENDS

High-resolution photographs (300 dpi RGB JPEGs) to accompany this news release are available for download on the IMI web site [www.imieurope.com](http://www.imieurope.com)

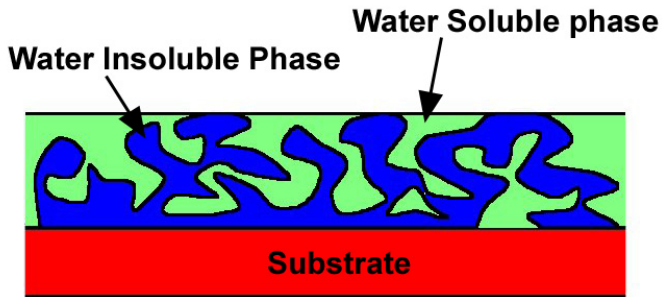


Object personalisation – printed pencils from Impika

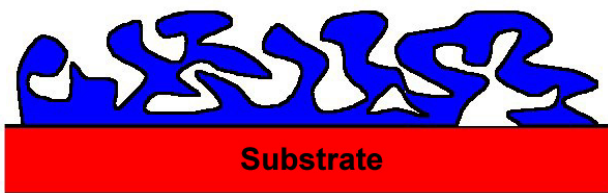


Paul Morgavi, CEO - Impika

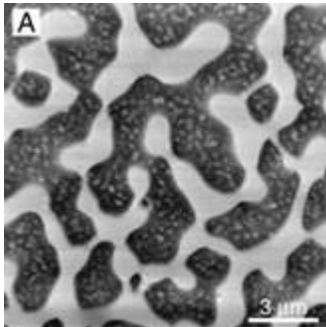
**How the Conductive Ink Technology works**



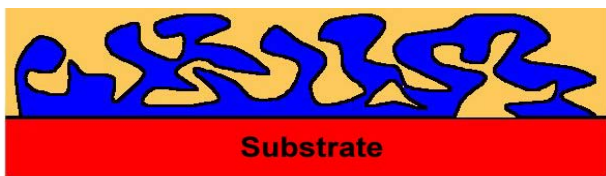
A receiver layer is first printed on the substrate. The 'ink' consists of two-phases – one polymeric binder is soluble in water, the other isn't. When printed onto virtually any substrate the phases separate – just like oil and water.



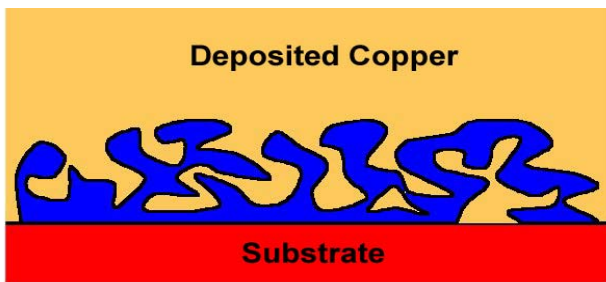
The water-soluble part of the ink evaporates, leaving an open sponge-like structured coating of the other polymeric binder on the substrate. This material also contains a catalyst.



Top view of the catalytic sponge after the ink has dried.



Copper is then deposited either from a solution using ink jet or by passing through a bath of copper solution. This produces a thin film of copper with high conductivity.



For thicker copper layers capable of handling high currents the copper layer can be plated using conventional techniques.



### **About IMI**

The Information Management Institute runs the largest and most comprehensive conference and seminar programme in the digital printing industry. Each year over 2,000 industry technical and management personnel from over 600 companies attend around 20 events covering all forms of digital printing.

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