

Alliance project for printed electronics launched Radio frequency identification tags: the next generation

Fürth, Germany (27 Feb 2008) – PolyIC, BASF, Evonik Industries, Elantas Beck and Siemens have announced the launch of a new German Federal Ministry of Education and Research (BMBF)-sponsored alliance project called MaDriX to advance the development of high-performance printable Radio Frequency Identification (RFID) tags.

The current generation of RFID tags contain silicon chips and are mainly used for high-priced products because of the complex manufacturing processes involved. Printed electronic technology will reduce the cost of RFID tag production thanks to the development of new materials such as electrically conductive and semiconducting plastics that can be employed in high throughput printing processes. This will make printed radio frequency identification tags suitable for use in cheaper consumer goods so that they may even come to replace printed barcodes.

PolyIC leads the consortium engaged in the three-year joint project. The total investment sum amounts to some €15 million, with the BMBF contributing approximately €8 million. The project is funded as part of the BMBF's 5th Framework Program "Key Technologies – Research for Innovations, Communications Technology Sector." The German Aerospace Center, DLR, is acting as project sponsor. With MaDriX, the companies involved in the alliance and the federal ministry will secure Germany's current leadership as a research base in the printable electronics sector.

Goods labeled with RFID tags can be identified by radiowaves and are used in applications from logistics through to supermarket checkouts. They also make products harder to fake. The gradual launch of printed RFID tags within the next 10 years is a realistic prospect.

The close cooperation between the companies involved is a key to the success of the MaDriX project. PolyIC engages with the issues of component characterization, process development and setting up demonstrators. BASF, Evonik Industries and Elantas Beck will



supply new materials to produce semiconductors and insulators for use in electronic circuits. Siemens is developing new real-time visual print inspection processes for quality control in the printing process. A number of universities and research institutes are also involved in the MaDriX project.

Alliance partners:

PolyIC GmbH & Co. KG

PolyIC GmbH & Co. KG was set up in November 2003 as a joint venture between Leonhard Kurz GmbH & Co. KG (51%, hot stamping and coating) and Siemens AG (49%, electronics) for the development and production of printed polymer electronics. PolyIC is headquartered in Fürth on the premises of Leonhard Kurz GmbH & Co. KG. PolyIC's webpage is accessible at www.polyic.com

BASF SE

BASF is the world's leading chemical company: The Chemical Company. Its portfolio ranges from oil and gas to chemicals, plastics, performance products, agricultural products and fine chemicals. As a reliable partner BASF helps its customers in virtually all industries to be more successful. With its high-value products and intelligent solutions, BASF plays an important role in finding answers to global challenges such as climate protection, energy efficiency, nutrition and mobility. BASF has more than 95,000 employees and posted sales of almost €58 billion in 2007. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (AN). Further information on BASF is available on the Internet at www.basf.com

Evonik Industries AG

Evonik Industries is the creative industrial group from Germany which operates in three business areas: Chemicals, Energy and Real Estate. Evonik is a global leader in specialty chemicals, an expert in power generation from hard coal and renewable energies, and one of the largest private residential real estate companies in Germany. Our strengths are creativity, specialization, continuous self-renewal, and reliability. Evonik is active in over 100 countries around the world. In its fiscal year 2006 more than 43,000 employees generated sales of about Euro14.8 billion and an operating profit (EBIT) of over Euro 1.2 billion. Further information is available on the Internet at: <u>www.evonik.de</u>



ELANTAS Beck GmbH

ELANTAS Beck was established in 1904 and operates a production facility in Hamburg, Germany. ELANTAS Beck is a subsidiary of ELANTAS Electrical Insulation, which belongs to the ALTANA group. The division Electrical Insulation develops and produces wire enamels, impregnating varnishes, impregnating resins, conformal coatings and casting resins, which are used among other products for electric motors, transformers, generators, capacitors, printed circuit boards, sensors and electronic modules. ELANTAS Electrical Insulation is comprised of nine companies in six countries and the division is subdivided into the business lines "Primary Insulation", "Secondary Insulation" and "Electronics & Engineering Materials". More information about ELANTAS Beck visit <u>www.elantas.com/beck</u>

Siemens AG

Siemens AG (Berlin and Munich) is a global powerhouse in electronics and electrical engineering, operating in the industry, energy and healthcare sectors. The company has around 400,000 employees (in continuing operations) working to develop and manufacture products, design and install complex systems and projects, and tailor a wide range of solutions for individual requirements. For over 160 years, Siemens has stood for technical achievements, innovation, quality, reliability and internationality. In fiscal 2007, Siemens had revenue of \in 72.4 billion and income from continuing operations of \in 3.9 billion (IFRS). Further information is available on the Internet at: <u>www.siemens.com</u>.

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Print-quality images are available for download at: <u>http://www.polyic.com/en/press-images.php</u>



Source of picture: PolyIC GmbH & Co. KG

1. First printed polymer RFID-Tag

PolyIC, BASF, Evonik Industries, Elantas Beck and Siemens have announced the launch of a new German Federal Ministry of Education and Research (BMBF)-sponsored alliance project called MaDriX to advance the development of high-performance printable Radio Frequency Identification (RFID) tags for use in cheaper consumer goods.



Source of picture: PolyIC GmbH & Co. KG

2. Polymer Materials

The development of new materials such as electrically conductive and semiconducting plastics play a main role in printed electronics. Thanks to these new materials printed electronic technology will reduce the cost of Radio Frequency Identification (RFID) tag production. This will make printed RFID tags suitable for use in cheaper consumer goods so that they may even come to replace printed barcodes.