

## **PRESS RELEASE**

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Page 1 of 4

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### **Advance Details of the Toyo Ink Exhibit at drupa2008 (1)**

#### **Outline of exhibited products 1: LED-UV curable offset inks**

Designed to be used on thin paper, Toyo Ink's "FD LED Series" of LED-UV curable offset inks consists of a range of offset inks hard dried using ultraviolet rays produced by dedicated light emitting diodes (LEDs). Although the "FD LED Series" achieves the same level of ink performance as UV curable inks dried using conventional UV lamps, it is lined up as a next-generation technology due to the fact that it reduces environmental impact by conserving energy. It is aimed squarely at users focused on printing innovation.

First and foremost, UV curable offset inks are regarded as a particularly environmentally friendly printing system compared to conventional oxidative polymerization drying offset inks.

They are characterized primarily by the fact that they do not include VOC (volatile organic compounds). Regular ink involves dissolving solids or high-viscosity resin in organic solvents, which are then released through volatile evaporation during printing. This gives rise to various issues that need to be addressed, including operational safety during the printing process and health hazards from residual solvents on printed matter. UV curable inks on the other hand use low-molecular organic compounds that produce photo-polymerization reactions under ultraviolet light as solvents, all of which are cured through polymerization during the printing and drying process, eliminating volatile evaporation of solvents.

Another key characteristic is instant drying. The rapid drying of regular inks involves heating with a hot-air dryer to speed up solvent evaporation, producing CO<sub>2</sub> emissions from the electricity or gas used to heat the air. Although UV curing produces CO<sub>2</sub> as a result of the usage of UV lamps, the amount of CO<sub>2</sub> is greatly reduced.

The “FD LED Series” of LED-UV curable offset inks on display at this year’s drupa2008 make UV printing even more environmentally friendly. They are also compatible with offset printers fitted with industrial LED-UV curing systems. The main benefits of LED-UV curing systems are as follows.

1. Compared to conventional lamps, LEDs consume much less electricity (roughly 1/4). This is due to the fact that, whereas UV lamps use an arc discharge luminescence mechanism, LEDs harness the electroluminescence of semiconductors. This effectively makes it possible to cut energy costs (electricity bills) and substantially reduce CO<sub>2</sub> emissions.
2. As the light emitted by LEDs does not contain any infrared, the amount of heat generated is minimal. This makes it possible to print onto films and other materials with a low level of heat resistance and minimizes the effects of heat on the printer itself, which in turn means that fewer adjustments are required in terms of printing precision, reducing printer wear and tear.
3. As LEDs have a substantially longer life span when used as a light source element compared to lamps (roughly 12 times as long), they need to be changed much less frequently.
4. LEDs can be turned on and off instantly, thereby eliminating the need for warm up and cool down periods, as with conventional lamps, and improving operational efficiency.
5. As UV curing units are exceptionally compact, they don’t take up lots of space when installed like conventional equipment.

The range of emission wavelengths for LEDs shows much sharper peaks compared to UV lamps. In an effort to achieve efficient drying properties based on this characteristic range, Toyo Ink has developed and optimized new pigments, resin monomers and photo-polymerization initiators to create the “FD LED Series”. We believe that the collaboration between such new inks and systems will bring about major innovations in conventional UV printing systems, making it possible to save both energy and space.

In addition to showcasing the “FD LED Series” in its own booth at drupa2008, the Toyo Ink Group also plans to put on printing demonstrations as a sample exhibit in the booth belonging to Ryobi Limited (Hall 17, Booth A06), which has developed a printer equipped with an LED-UV printing system.

Kensuke Koga  
Radiation Curing Products Sales Dept.  
TOYO INK MFG. CO., LTD.

## **Ink business strategy in Europe**

Having continued to push full steam ahead with the development of our offset ink business in Europe since last year's IPEX2006 exhibition (Birmingham, UK), the Toyo Ink Group has built up a network of distributors that currently spans a total of 16 countries\*. We are satisfied that we have more or less achieved the target levels set out under our plans over the course of the last two years.

\* Distributor network as of April 2008 (in alphabetical order, including trial ventures)

Belarus, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Greece, Hungary, Italy, Netherlands, Portugal, Rumania, Russia, Slovakia, Turkey, UK

From drupa2008 onwards we will be entering the second stage of our plans, as part of which we have set out the following targets.

1. We are aiming to increase our number of distributors even further and establish a sales network with full coverage throughout Europe.
2. We intend to establish numerous direct sales bases and establish a framework capable of pinpointing end users' needs.
3. Our main target market is specialty and niche products. Essentially, we are aiming to harness our strengths in terms of technology, including waterless inks, waterless UV curable inks, LED-UV curable inks and wide-color-gamut inks (Kaleido inks), and value in order to offer a range of products that will guarantee customer satisfaction.
4. Moving away from our existing business model based solely on import sales, since April this year we have been establishing bulk-import small-lot production facilities in Europe in an effort to develop a precise follow up system covering ink cartridges as well as ink quality. Having put this system into effect, we are currently working on techniques to adjust ink colors and produce customized inks.

Although it is not one of our top strategic priorities, we nonetheless intend to look into the provision of mass volume or commodity inks. Bearing mind future environmental issues and manufacturing costs, we are continuing to work on the development of mechanisms capable of supplying universally high quality commodity inks on a global basis.

Rather than entering the European market exclusively for our own ends, the Toyo Ink Group is primarily focused on working with the market and providing customers with excellent value. To put it another way, instead of needlessly wasting resources on competition with other companies, we are aiming to actively explore business partnerships that will enable us to build up strategic win-win relationships in areas such as sales, technology and supplementary production.

In the ink jet business too, we are increasing our presence in the European market with every passing year and currently deal with and develop products for around 20 corporate customers across Europe. We regard this as evidence that the Toyo Ink Group name and brand have achieved a certain level of recognition within Europe. We hope to capitalize on drupa2008 to strengthen our business structure as an OEM inkjet ink manufacturer even further.

Our specific short-term and medium-term strategies in the inkjet ink sector are as follows.

1. We aim to become a major player as an OEM inkjet ink manufacturer.
2. We intend to target the future growth area of UV curable inkjet inks.
3. We plan to transfer technical expertise from Japan to Europe and establish an R&D and technical support network crucial to our position as an OEM.
4. We intend to set up a local inkjet ink production network as quickly as possible, harnessing inkjet pigment production capabilities in France, in an effort to establish a position for ourselves as a Europe-based OEM ink manufacturer.

Masami Shiono

President

TOYO INK EUROPE S.A.

**Information Contact:**

Europe Region:

**TOYO INK EUROPE S.A.**

Rue de Genève 4,

1140 Bruxelles, Belgium

Tel: 32-2-705-3440

www.toyoinkeurope.com

All Others:

**TOYO INK MFG. CO., LTD.**

3-13, Kyobashi 2-chome, Chuo-ku,

Tokyo, 104-8377 JAPAN

Tel: 81-3-3272-5720

www.toyoink.co.jp/en/