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News Release from DKN Research, Haverhill, Massachusetts, U.S.A.

“DKN Research Develops a Low Cost Flexible EL System Using a Screen-Printing Process”

DKN Research, a leading engineering firm specializing in microelectronics and packaging technology, now carries a variety of flexible devices and materials for printable & flexible electronics. DKN Research continues to develop a wide range of screen-printing technologies for advanced thick film circuits, including fine line conductors down to 30 microns, multi-layer circuits with printed via holes, printed passive components, printed EL devices, printed connectors and more. Choosing the correct substrate material is necessary to optimize the performances from electronic circuits and devices produced by screen-printing. DKN Research can now supply the appropriate substrates for thick film circuit applications and provide engineering support.

Polymer thick film circuits were always considered an economical solution, but performance levels from the printed circuit technology were sub par due to poor resolution and electrical conductivity. Traditional thick film circuits were intended for typical low end items such as keyboard membrane switches and touch panels on microwaves. Technical advances with ink materials and printing equipment over the last few years has trickled down, and the wiring capabilities from the new thick film circuits are closer to traditional etched copper circuits.

DKN Research co-developed a low cost Flexible EL System formed on polyester films using an advanced screen-printing process. Their partners include NY Industries, a leading flexible circuit manufacturer from Ohtsu Japan, Hirai Seimitsu Kogyo, a specialty component manufacturer from Osaka Japan, and Hartec, a specialty design & assembling house from Yokohama Japan. Each of the EL sheet layers, excluding the ITO layer, is produced using an advanced screen-printing process. These screen-printed layers are less than 15 microns thick and remain flexible because of the organic binder materials. The total thickness of the flexible EL sheets can be as little as 100 microns, and are available in three colors - blue, pink and yellow. Click on the following link to view a short clip demonstrating the flexibility and brightness from one of our EL sheets: www.dknresearch.com

The flexible EL system is a low cost solution to produce flexible light sources and flexible signage. The manufacturing process and tooling design are both simple. The flexible EL product is custom designed based on your criteria, and DKN Research can assist in manufacturing, tooling design, power source and driver modules. Click on the following link to view a short clip showing our power sources: <http://www.dknresearch.com>

<http://gallery.me.com/dnumakura/100024>

Representatives from DKN Research will attend the Micro Tech Japan 2011 exhibition at Tokyo Big Sight from January 19th to January 21st. They plan to display colored samples of these new flexible EL products.

DKN Research expects a new generation of electronic devices that will combine the flexible EL system with other electronic devices and printed circuit systems. Building these circuits and devices from a screen-printing process will require specific materials, screen masks and printers. Ink materials are definitely the first priority to consider when using the screen-printing process; however, our engineers at DKN Research Group find

it equally important to choose the correct substrate material to optimize the performances from circuits and devices that are screen-printed. For this reason, DKN Research decided to make available their engineering information for substrates and provide actual materials. This is especially valuable to those clients who want to experiment with flexible films using advanced screen-printing technologies. DKN Research can also provide custom made substrates for special projects if standard materials are not adequate. Very frequently, research engineers want to try a series of materials on a small volume scale for new R&D projects. DKN Research can supply the substrate materials from one sheet along with engineering support.

DKN Research welcomes all inquiries to assist in creating your own circuit devices using our Advanced Screen-Printing Technology. Please click on our link for more information www.dknresearch.com, or contact us at sales@dknresearch.com for detailed technical information and circuit samples.

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Attached: Photo of Flexible EL Sheet

