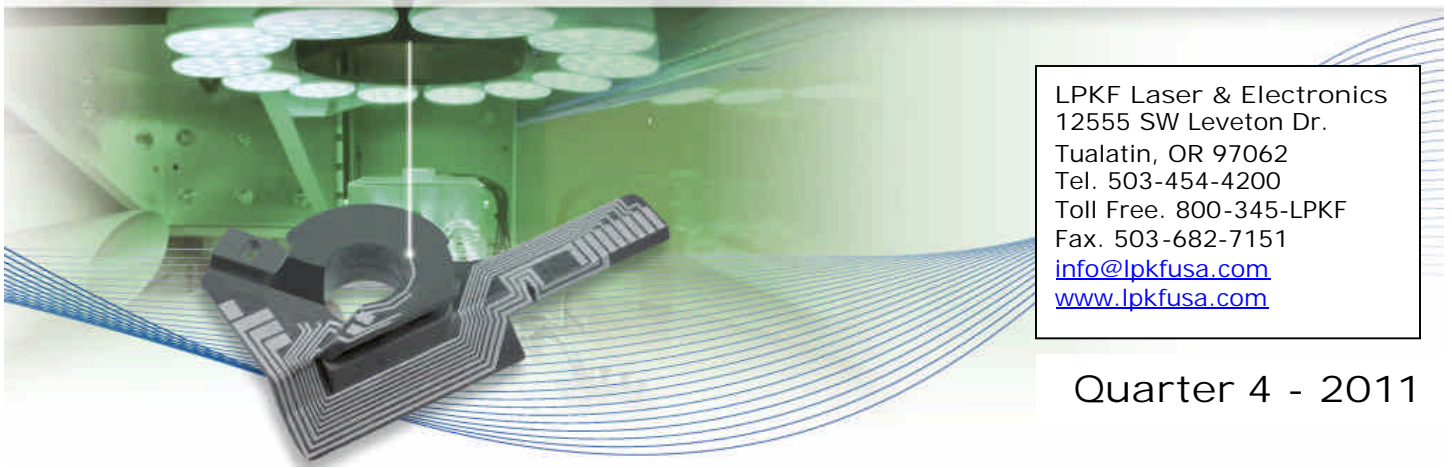


Laser Direct Structuring (LDS) Newsletter



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Dear Readers,

LPKF and SelectConnect Technologies will launch a live webinar that will introduce you to the groundbreaking technology, Laser Direct Structuring. This webinar will show you how to put more functional antenna into less space using laser direct structured (LDS) 3-D circuitry without investing capital or time.

LDS technology makes it simple to turn your CAD files into a prototype and scale to production and a fast and effective way to quickly affect your bottom line. In the Webinar you will learn: what it is, how it works, design considerations and find out about some real world examples.

Webinar Details:

- Date/Time: Thursday, November 3rd at 2:00pm Eastern
- Register here at:
<https://www3.gotomeeting.com/register/564686998>



For more news and the latest happenings in LDS technology, please check out stories below or visit our website at:
<http://www.lpkfusa.com/mid/index.htm>.

EMS-GRIVORY and LPKF Develop new LDS plastic



EMS-GRIVORY, a business grade of EMS-CHEMIE AG Switzerland, has developed a new LDS compatible plastic in close cooperation with LPKF Laser & Electronics AG. The reinforced product, called Grilamid 1SBVX-50H LDS, which is based on the bioplastic polyamide 1010 (PA1010) is now being tested by numerous companies and will soon be used for series production.

The heavy duty plastic was developed within a few months in response to new requirements in MID component design. Modern three-dimensional structural components combine high functional density with dwindling material thicknesses. Grilamid 1SBVX-50H LDS provides users with a material with comparatively high rigidity and durability paired with good flow properties, which allows mold components with thinner walls.

EMS-GRIVORY, a leading manufacturer of specialty polyamides, managed to create a new LDS-compatible material with extraordinary mechanical properties by working in close cooperation with LPKF's engineering.

LPKF ProtoPaint LDS plastic tips

LPKF ProtoPaint LDS adds a laser-activated coating to generative manufactured prototypes in no time. The paint system prepares the plastic parts fabricated using a generative method for true LDS prototyping. The plastic blanks can be produced using various generative techniques.



When selecting plastic one should ensure sufficient heat resistance. The paint is cured at an oven temperature of ideally 90°C or a minimum of 70°C with prolonged curing times. The plastic pieces must be able to withstand these temperatures without warping. Manufacturers of plastics prototypes can now choose from a large number of plastics for the generative techniques with a range of heat resistances.

The temperature resistance of a plastic prototype must further be considered with respect to assembling electronic components to the finished LDS-MID. The paint can't withstand the fusion temperatures of traditional lead-free or leaded solders. It's therefore useful to contact electronic components through conductive gluing. This requires the plastic piece to have a heat resistance of at least 100°C, better yet 120°C.

The video explains all the process steps required for manufacturing sample components with ProtoPaint LDS: <http://www.lpkf.com/products/mid/protopaint.htm>.

New sensor system measures fuel pump pressure

Tight installation space requires space saving solutions. When developing a new pressure sensor for measuring the supply pressure in automotive fuel systems the research community, made up of several companies and institutes, preferred the LPKF LDS technology. The goal is to develop a sensor system immune to interference and provide reliable fuel pump pressure readings in cars with wireless transmission to a controller.



The pressure sensor eliminates delicate cables and connectors, saving space and weight. The readings contribute to minimizing power transmission loss. An efficient accessories management improves energy efficiency and reduces emissions.

At the center of this energy management is a pressure sensor developed by a research community under the project sponsorship of VDI/VDE-IT. Since the system is self-sufficient, powered by kinetic energy from the engine's vibration spectrum, the wiring could be omitted altogether.

The sensor system was realized by combining the pressure sensor, microcontroller and radio module subgroups into a compact MID package, while leaving the microgenerator a separate assembly. Sensor, controller and radio board are electrically connected through LDS rewiring inside a plastic housing via LDS yet protected outward.

According to the assessment of Dr. Martin Kurth (A. Raymond GmbH, read in the magazine PLUS 2/2011, pg. 400 ff.) participants in the project – the companies GEMAC, EPCOS and A. Raymond and the institutes HSG-IMAT and HSG-IMIT – have implemented a fully functional and practical concept of an energy self-sufficient MID pressure sensor.

MacDermid develops faster electro-less plating chemistry for LDS parts



MacDermid, the international company specializing in chemicals, has developed an innovative copper-plating method for LDS components. It is an electro-less copper-plating process which, unlike the conventional methods to date, consists of a single copper bath.

The faster copper bath which is also more selective to LDS structures replaces the plating method often used with ABS and PC/ABS materials, which consists of two steps, the initial layer (strike) and build-up layer (full build). The metallization reduces the amount of work and the equipment required, increasing productivity. The manufacturer estimates the savings potential of the new "MID Copper 100 B1" copper-plating method to be about 20 percent of metallization costs.