

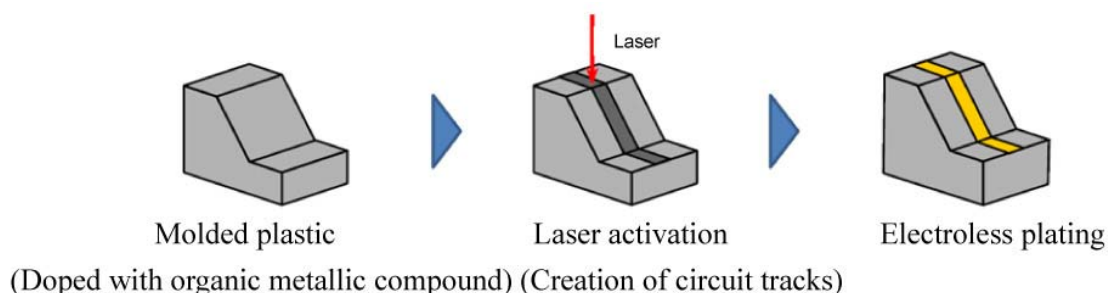
October 13, 2016

## DIC Corporation

### DIC Develops World's First PPS Compound (LP-150-LDS) Suitable for 3D LDS

**Tokyo, Japan**—DIC announced that it has developed LP-150-LDS, an innovative polyphenylene sulfide (PPS) compound suitable for use with laser direct structuring (LDS), a leading molded interconnect device (MID) process used for forming circuits on 3D molded components. DIC has also commenced sample shipments of the new product. LDS is a proprietary technology owned by LPKF Laser & Electronics AG, a manufacturer of printed circuit board (PCB) production equipment based in Germany. Accordingly, materials produced for LDS must be approved by LPKF. In July 2016, LP-150-LDS became the first PPS compound to gain approval and be registered on LPKF's materials list.

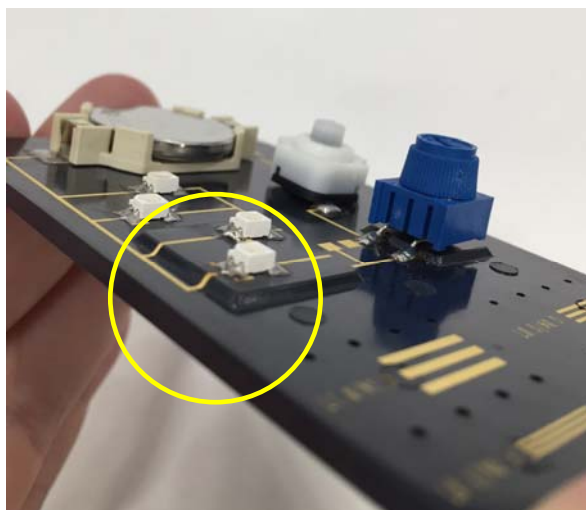
LDS involves applying a laser to the surface of a molded plastic component made from an LPKF-approved resin doped with an organic metallic additive. The laser selectively activates the metallic additive, creating tracks in which circuits are then formed using electroless plating. This eliminates the need for resist etching and makes it possible to create circuit tracks on 3D molded component surfaces. In addition to improving design flexibility, LDS thus makes it possible to integrate multiple components, as well as to reduce component size. These benefits have encouraged the expanded use of LDS by manufacturers of components for automobiles and medical devices, among others, in Europe.



LDS makes it possible to create circuit tracks on 3D molded components in a three-step process

Materials that have been approved for use in LDS include engineering plastics such as polyamide, liquid crystal polymer (LCPs) and polyether ether ketone (PEEK). PPS' superb resistance to heat and chemicals has prompted materials manufacturers worldwide to develop PPS compounds for LDS, but until now none has realized a product that LPKF's stringent standards for approval.

DIC's success in developing an LDS-grade PPS compound reflects the wealth of polymer design, compounding and mixing technologies the Company has built up over many years through the integrated manufacturing of PPS polymers and compounds. Because it preserves PPS' renowned heat- and chemical-resistance, LP-150-LDS facilitates the use of LDS for automotive and other components for which existing approved materials are not suited. Expectations are thus high that use of the compound and LDS technology will help further reduce the number and weight of automotive components.



Circuits are drawn in the tracks

Under its current medium-term management plan, DIC108, launched in January 2016, DIC has positioned PPS compounds as a business that it expects to drive growth in the years ahead. DIC recently established technical and technical service centers in the People's Republic of China (PRC) (2015) and Europe (2016)—which join existing facilities in the Asia-Pacific region—and built a new PPS compounding plant in the PRC, enhancing its global technical service and supply configuration. The Company is also promoting efforts to develop distinctive products such as LP-150-LDS with the aim of reinforcing its leading global market share.

With the aim of cultivating new markets for its PPS products, DIC Group company DIC Europe GmbH, based in Germany, will exhibit LP-150-LDS at K 2016, the 2016 edition of world's preeminent trade fair for rubber and plastics, which will be held in Dusseldorf from October 19–26, 2016.

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