

GALVO-SCANNER LASER PULSE DELIVERY TECHNIQUES FOR ELECTROLESS COPPER DEPOSITION ON PC-ABS.

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Advanced process for electric circuit traces formation on flexible and 3D shaped dielectrics is presented. The Selective Surface Activation Induced by a Laser (SSAIL) method is a promising technology [1], consists of 3 main steps: 1. Laser modification of the surface. 2. Chemical activation of modified area. 3. Electroless copper deposition on activated area. The process can be exceptionally applied on standard commercial dielectric materials such as various plastics, ceramics, glasses, and polymeric films.

The aim of research was to try different laser writing techniques and find best parameters for rapid and high quality electric circuit traces formation. Sheet resistance, optical, and scanning electron microscopy measurements were applied for investigate the optimal processing parameters. In the experiment an ultrashort pulsed laser and a galvanometric scanner for fast and precise pulse delivery on surface were used. Laser writing technique by skipping pulses is presented.

[1] K. Ratautas, et al, *Laser-assisted selective copper deposition on commercial PA6 by catalytic electroless plating – process and activation mechanism* (Appl Surf Sci, 470 (2019), pp. 405-410).