

ITO FREE ELECTROCHROMIC DEVICE

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Electrochromic devices are dependant on indium-tin oxide (ITO). ITO is brittle, expensive and requires CVD to achieve thin films.

SSAIL is a technology for writing electronic circuits directly on by modifying its surface properties with a laser followed by an electroless copper plating. It is a three-step process: firstly, surface is modified with laser; second chemical activation of laser-modified areas; lastly, electroless plating. With this technology, circuits on glass can be achieved and used for electrochromic glass.

Electrochromic devices depends on three layers. First being conductive layer, which usually is ITO, second, electrolyte and third electrochromic material. For this work, electrolyte is polymer ion gel which is made of acrylamide, bisacrylamide copolymer. Polyacrylamide-bisacrylamide has very high transparency and ionic conductivity making it ideal choice for electrolyte layers.
