YAZAKI HIGHLY CONDUCTIVE, BINDER-FREE YTC America Inc. INKS FOR PRINTED ELECTRONICS

Development of Highly Stretchable and Conductive Ink

In-mold electronics provide functionality to interior surfaces, such as touch and lightning, enable appealing free form designs, and a reduction of weight and cost through reduction of parts and complexity. Conductive inks are required to print interconnects, high stretchability is required to form curved parts with high aspect ratios.



HIGHLIGHTS

■ Best commercial ink for inmold electronics from DuPont has only ≈ 1 % of Silver conductivity due to use of polymeric binder



Steering Wheel with Integrated Controls and Sensors

In-Mold Electronics Process Steps



Print Frontside Graphics



Print Backside Electronic Circuit



Roof-Panel with Integrated Lightning and Capacitive Touch Sensors

Commercial stretchable inks contain a high amount of non-conductive polymeric binder limiting conductivity

YTCA Ink No Binder

The P.



Silver Nanoparticles Carbon Nanotubes





YTCA ink uses Silver nanoparticles and Carbon nanotues in lieu of insulating polymeric binder

 Screen printable with excellent adhesion on variety of substrates including Polycarbonate and PET

Ink curable at 130 °C

14% of Silver conductivity

18% stretchability

Patent applied for



Surface-Mount Electronic Components



Thermoform into 3D shape



Injection Mold Backside Mount







Provided ink to Holst Centre in the Netherlands for independent evaluation



Explore licensing opportunities

Design functional demonstrator

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