

NORCOP

SURFACES & INTERFACES TECHNOLOGY

In the field of surface customization for Printed Electronics, NORCOP is leading the way!

Our Glow-Discharge Plasma Nanocoating Technology, working at atmospheric pressure and high speed, is capable of fulfilling all your printing requirements and overcoming substrate-ink interfacial incompatibilities.

MOLECULAR COATING™

Plasma Induced Transparent Nanocoating of 2-D Substrates
Plastic - Paper - Textile

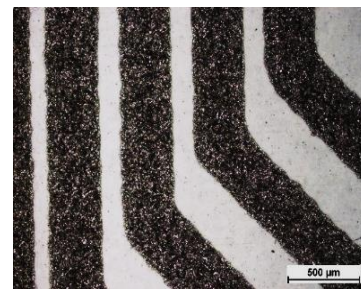
Advantages of MOLECULAR COATING™ Zero Pinholes - Surface roughness and chemistry control

Reduction in quantity of ink used
Fewer circuit failures due to increased print quality
Ease of prototyping

YOUR PRINTING PERFORMANCES IMPROVED

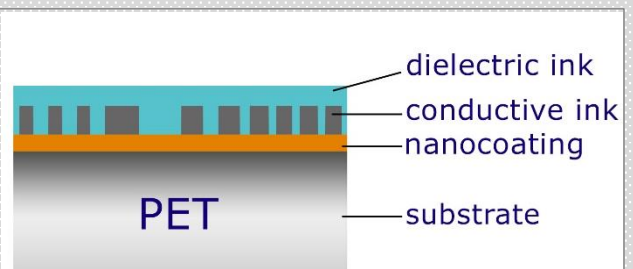
Surface customization with:

- Doubling of conductivity
- Absence of hot-spots
- Optimisation of ink adhesion by mechanical anchoring and chemical association between ink and substrate
- Narrow, straight tracks of reduced width
- Constant inter-track width
- Very low short-circuit risk
- Flexible coatings resistant to bending
- Transparent coatings
- Coatings with uniform structure and homogenous composition.



SE ≈ ST
Pinhole-free surface
Precise edge definition

Photomicrograph of screen-printed silver ink with surface tension approximately equal to the surface energy of the NORCOP Molecular Coated™ substrate. Stencil track thickness at 330µm.

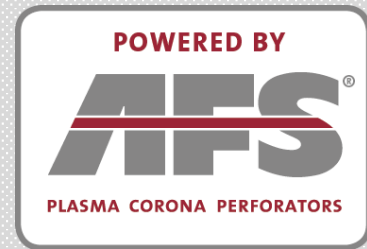


Schematic representation of a flexible printed circuit in cross section. NORCOP's plasma nano-coating is able to bind to both the conductive and dielectric ink.

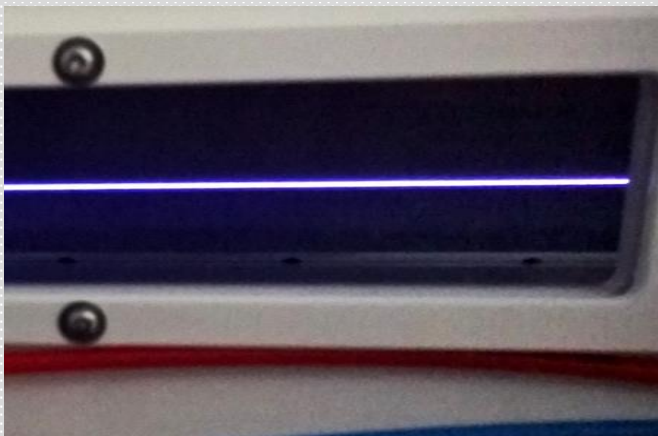
Homogeneous and reproducible coated surfaces, with controlled roughness and polarity

NORCOP's production-scale plasma reactor characteristics:

- Electrode width: **2 000 mm**
- Coating speed: **20-100 m/min***
- Production capacity: **2 000 to 10 000 m²/hour**
- 2D substrates: **PET, PI, PC, PP..., Paper, Textile**
- SE range: **10 to 72 dyn/cm**
- SE shelf-life: **6 to >12 months**



** speed depends on type of substrate, its thickness and the applied chemical formulation*



The glow discharge produced by NORCOP's R2R plasma reactor operating at atmospheric pressure and room temperature



NORCOP's Plasma Station operates at atmospheric pressure and is capable of coating films with width up to 2000mm at speeds up to 100m/min.

CIRCULAR ECONOMY

- Primerless gas-phase chemistry → No need for energy-demanding solvent elimination or recovery
 - Low resource requirement (mg/m² vs g/m²)
- Compact physical dimensions → Small spatial and surface footprint
- Working gas used: N₂ → Harmless upon atmospheric release
- Minimal by-products generated, recovered by filtration
- Overall, small carbon footprint