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Conductive Directly Fused Poly(Porphyrin) Coatings by an Oxidative Chemical Vapour Deposition Approach

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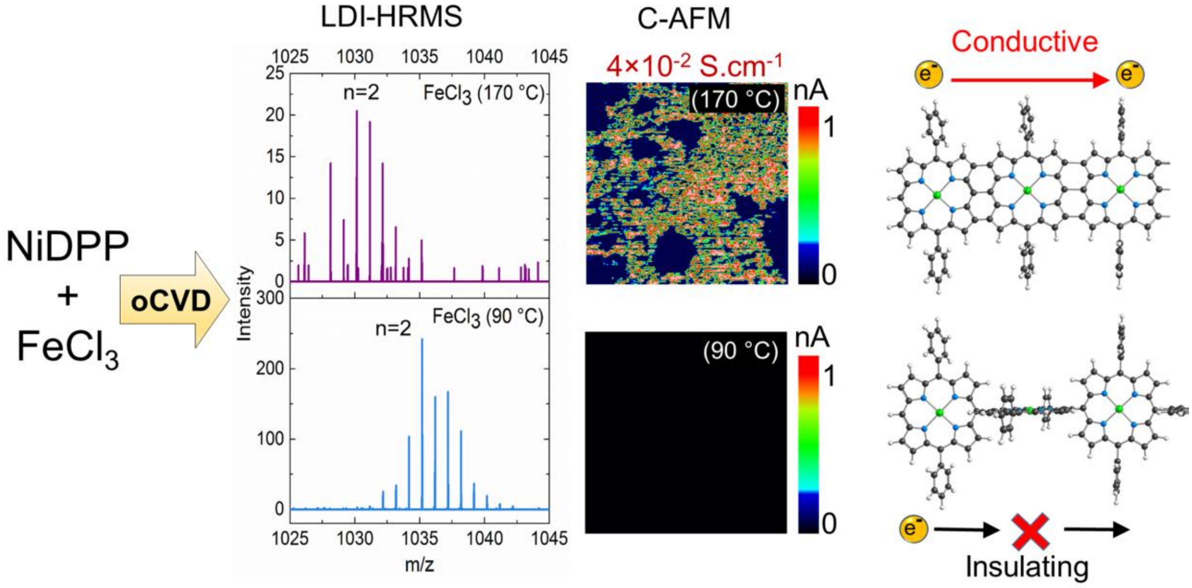

Figure 1. Dimer region of the LDI-HRMS spectra in the mass range m/z 1020 to 1050 of the NiDPP-based thin films obtained using $FeCl_3$ sublimed at different temperatures. C-AFM electron-current images (2×2 μm^2) of the NiDPP-based thin films elaborated from $FeCl_3$ and showing a conductivity up to 4×10^{-2} S cm^{-1}. Schematics of a flat and tape-shaped conductive triply-fused poly(NiDPP) (up right) and a singly-fused insulating poly(NiDPP), which arranged with an orthogonal conformation between the neighbouring NiDPP unit (down right).

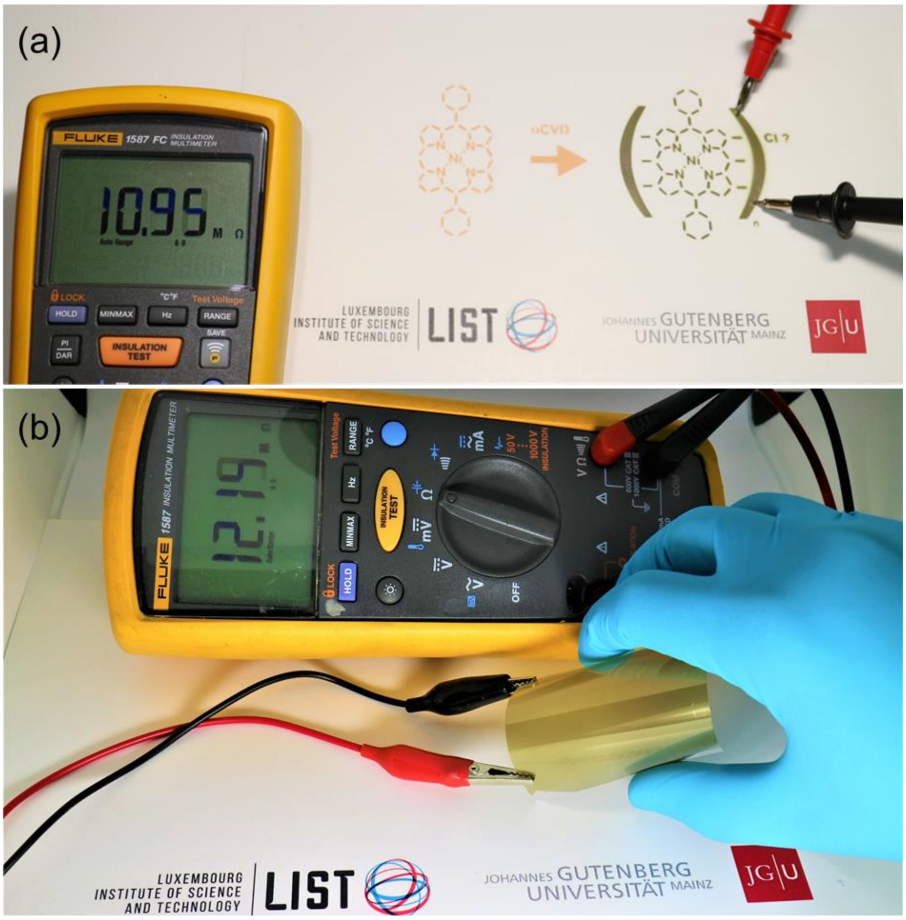

Figure 2. Optical images of (a) patterned simply evaporated porphyrin (left, orange) and polymeric fused porphyrin film (right, green) deposited onto printing paper, (b) polymeric fused porphyrin film deposited onto PEN substrate. The oCVD of NiDPP yields a homogeneous and conductive coating also on sensitive and bendable substrates which evidences the suitability for modern optoelectronic devices.