

## “Inhibitors dopped hybrid polymer coating on AA-2024: Corrosion behaviour in chloride solution”

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*In this work triethoxy(octyl)silane(TEOCS)-tetraethylorthosilicat (TEOS) and zirconia-polyester glycol hybrid polymers containing different organic inhibitors were studied as protective coatings for AA-2024. The organic compounds were incorporated either by mixing them directly with the hybrid material or, by incorporating zirconia nanoparticles previously doped with the inhibitor. The morphological features of the coated AA-2024 samples were evaluated by scanning electron microscopy (SEM) and atomic force microscopy (AFM). The anti-corrosion performance of the modified silane film applied on AA-2024 substrates was studied by electrochemical impedance spectroscopy (EIS) and polarization curves.*

*In agreement with investigations related to inorganic-organic hybrid materials systems, TEOCS-TEOS effectively reduces the corrosion current and increases the polarization resistance as revealed by EIS. However, the incorporation of the corrosion inhibitor into the hybrid system reduces further the corrosion activity, which maintains protection even after an immersion time of various days. The results are discussed according to the effect of nanoparticles size and inhibitors structure on the ageing polymerization process of the hybrid system, which was monitored by UV-visible and FTIR.*

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Sala Conferencias, Tercer Piso – Departamento de Física  
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