DEVELOPMENT

Anticorrosive Polymer with Metal Nanoparticles

POLYMERIC COATING WITH METAL NANOPARTICLES AGAINST BIOCORROSION

KEY WORDS

POLYMERS,
NANOPARTICLES,
ANTI-CORROSION

DESCRIPTION

Development of a hybrid coating based on a polymer matrix with metal nanoparticles aimed at preventing chemical and biological corrosion on metallic surfaces. The technology enhances adhesion to the substrate and exhibits biocidal properties that reduce biofilm formation, a key driver of biocorrosion processes.

POTENTIAL BENEFITS OR IMPACTS

The technology would extend the useful life of metal structures exposed to aggressive environments, reducing costs associated with maintenance, material replacement, and operational failures. By slowing corrosion kinetics and microbial growth, it improves operational efficiency and contributes to more sustainable materials management in industry.

TECHNOLOGY MATURITY LEVEL (TRL)

TRL 3: experimental proof of concept

AREA OF APPLICATION

Plastics
Chemistry

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