



Name of the Technology: **Smart Coatings of Conducting Polymers for Corrosion Protection**

Summary:

Our innovation relates to the preparation of smart coatings of conducting polymers which can be used for preventing corrosion of iron under hostile environmental conditions. The aim of the innovation was to design conducting polymer composites by incorporating filler materials and suitably selecting a medium for polymerization so that the resultant epoxy coatings can be used for prevention of corrosion of iron in saline water conditions.



Figure 1: Salt spray images of powder coated sample (a) Epoxy coated, (b) PANI coated and 6% loading, (c) and (d) HPSC coated at 1.5 and 6% loading level, (e) pilot plant set up for the synthesis, (f) powder coating unit used for coating.

Applications:

- Railway bridges, Sea-link Bridges, Ship Hulls, Undersea oil pipeline, TV & Microwave Transmission Towers, Electricity poles, Iron bars in concrete structures, Under surface of Railway coaches, wagons, car, scooter



Advantages:

How Our Innovation is different from conventional coatings?

- * We are designing conjugated polymers which have Smart action and have self healing ability: pin hole/scratch site passivation
- * Environmental friendly/based on green technology (free from heavy metal ions and hazardous chromates);
- * Long service life ; * Economic feasibility; * Additional antistatic property

Choose the Readiness level of the Technology:

Idea	Concept Definition	Proof of Concept	Prototype	Lab Validation	Technology Development	Technology Demonstration	Technology Integrated	Market Launch

Related Patents: Patent No: 3813 DEL 2013; December 30, 2013; Country: India, US; Publication Date: US 2015/0184304 A1, July 2, 2015; Grant Date: -; Year of Introduction: 2014

User Industries:

Paint Industries; AkzoNobel; DOW Chemicals; Autonomic Materials