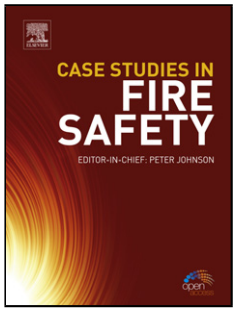

Title: Polyaniline-cerium oxide (PAni-CeO_2) coated graphene oxide for enhancement of epoxy coating corrosion protection performance on mild steel

Authors: Bahram Ramezanzadeh, Ghasem Bahlakeh, Mohammad Ramezanzadeh

PII: S0010-938X(18)30061-1
DOI: https://doi.org/10.1016/j.corsci.2018.03.038
Reference: CS 7454

To appear in:

Received date: 11-1-2018
Revised date: 15-3-2018
Accepted date: 19-3-2018

Please cite this article as: Ramezanzadeh B, Bahlakeh G, Ramezanzadeh M, Polyaniline-cerium oxide (PAni-CeO_2) coated graphene oxide for enhancement of epoxy coating corrosion protection performance on mild steel, *Corrosion Science* (2010), https://doi.org/10.1016/j.corsci.2018.03.038

Polyaniline-cerium oxide (PAni-CeO_2) coated graphene oxide for enhancement of epoxy coating corrosion protection performance on mild steel

Bahram Ramezanzadeh[a1], Ghasem Bahlakeh[b**], Mohammad Ramezanzadeh[a]

[a] *Surface Coating and Corrosion Department, Institute for Color Science and Technology, Tehran, Iran*

[b] *Department of Engineering and Technology, Golestan University, Aliabad Katool, Iran*

[1] Corresponding authors:
*B.Ramezanzadeh (Assistant Professor), ramezanzadeh@aut.ac.ir, ramezanzadeh-bh@icrc.ac.ir
**G. Bahlakeh (Assistant Professor), Gh.Bahlakeh@gu.ac.ir

Highlights

- A high performance anti-corrosion system based on epoxy coating was fabricated
- Polyaniline (PAni) nanofibers-CeO_2 grafted graphene oxide nanosheets were synthesized through a Layer-by-Layer (L-b-L) assembly approach
- Both barrier and active corrosion inhibition properties of GO nanosheets were enhanced by deposition of PAni and CeO_2 compounds
- The DFT results evidenced the cation-π and electrostatic interactions between the cerium-polyaniline

Abstract: In this study the polyaniline (PAni) nanofibers-CeO_2 grafted graphene oxide nanosheets were synthesized through a Layer-by-Layer (L-b-L) assembly approach and characterized by Fourier transform infrared spectroscopy (FT-IR), X-ray photoelectron

[1] Corresponding authors:
*B.Ramezanzadeh (Assistant Professor), ramezanzadeh@aut.ac.ir, ramezanzadeh-bh@icrc.ac.ir
**G. Bahlakeh (Assistant Professor), Gh.Bahlakeh@gu.ac.ir