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Hakim Sabzevari University



Contents

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Editorial 210149

Aims and scope of the journal, a brief submission guideline, and the list of the editorial board.

Ahmad Allahbakhsh

doi: 10.22034/jams.2025.210149

**Comparison of the Corrosion Inhibition Effect of *Portulaca oleracea* Extracts 210150
Prepared Using Ethanol and Water**

In this study, Shiri developed a new class of sustainable coating for mild steel using extracts from *Portulaca oleracea*, prepared with two solvents: ethanol and water. The results indicate that the choice of solvent significantly influences the corrosion inhibition efficiency of the resulting inhibitor, highlighting more effective methods for creating sustainable corrosion protection systems.

Sara Shiri

doi: 10.22034/jams.2025.210150



**Synthesis and Characterization of Polyethylene Glycol Coated Superparamagnetic 210151
Fe₃O₄ Nanoparticles**



Patil et al. reported that coating iron oxide (Fe₃O₄) nanoparticles with polyethylene glycol enhances the performance of these superparamagnetic nanoparticles. The synthesized magnetite Fe₃O₄ nanoparticles exhibited a cubic inverse spinel structure, had a roughly spherical shape, and were monodispersed. Additionally, Vibrating Sample Magnetometer results demonstrated excellent superparamagnetic behavior and high saturation magnetization at room temperature.

Priyanka A. Patil, Shanabhau D. Bagul, Nitesh S. Koche

doi: 10.22034/jams.2025.210151

Deep Eutectic Solvent-Water Solvated Synthesis of Tungsten Oxide Nanoparticles 210152 with Photochromic and Antimicrobial Properties

Ajayi et al. utilized deep eutectic solvents as a sustainable and adaptable medium for synthesizing tungsten oxide (WO_3) nanoparticles through an eco-friendly, low-temperature method. Optical analyses of the produced samples demonstrated strong UV absorption. Furthermore, antimicrobial tests indicated a dose-dependent bactericidal effect of the synthesized WO_3 nanoparticles against *Escherichia coli* and *Staphylococcus aureus*.

Adetola Abiola Ajayi, Olayinka Oderinde, Sodiq Olalekan Ogunbayo, Olubunmi Ayoni Ogundiran, Adeola Roseline Olawuyi, Adebobola Ololade Agbeja

doi: 10.22034/jams.2025.210152



Evaluation of *Phytolacca americana* L. extract as green corrosion inhibitor 210153 for mild steel: a study of the solution phase



Green corrosion inhibitors are gaining popularity, particularly those derived from plants, due to their non-toxic nature, affordability, and accessibility. Sheydaei conducted a study on the extract of *Phytolacca americana* L. (also known as American pokeweed), assessing its effectiveness in preventing mild steel corrosion. The findings indicated that the plant extract successfully inhibited corrosion, as it contains compounds such as betacyanins, flavonoids, and polyphenols.

Milad Sheydaei

doi: 10.22034/jams.2025.210153

Preparation and Characterization of a Ni-Co-Ce Coordination Framework Coated 210154 Nickel Foam Electrode for Supercapacitor Applications

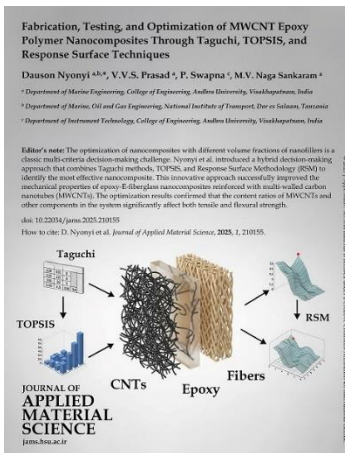
Borhani et al. reported the synthesis of a trimetallic Ni-Co-Ce coordination compound using a hydrothermal synthesis method, which serves as a coating for nickel foam-based electrodes in supercapacitors. This new coating demonstrated stable electrochemical performance, achieving an increase in specific capacitance from 0.74 F/g to 2.6 F/g over multiple cycles.

Yasin Borhani, Zeinab Jarrahi, Ashkan Abareshi

doi: 10.22034/jams.2025.210154



Fabrication, Testing, and Optimization of MWCNT Epoxy Polymer Nanocomposites 210155 Through Taguchi, TOPSIS, and Response Surface Techniques



Nyonyi et al. introduced a hybrid decision-making approach that combines Taguchi methods, TOPSIS, and Response Surface Methodology (RSM) to identify the most effective nanocomposite. This innovative approach successfully improved the mechanical properties of epoxy-E-fiberglass nanocomposites reinforced with multi-walled carbon nanotubes (MWCNTs). The optimization results confirmed that the content ratios of MWCNTs and other components in the system significantly affect both tensile and flexural strength

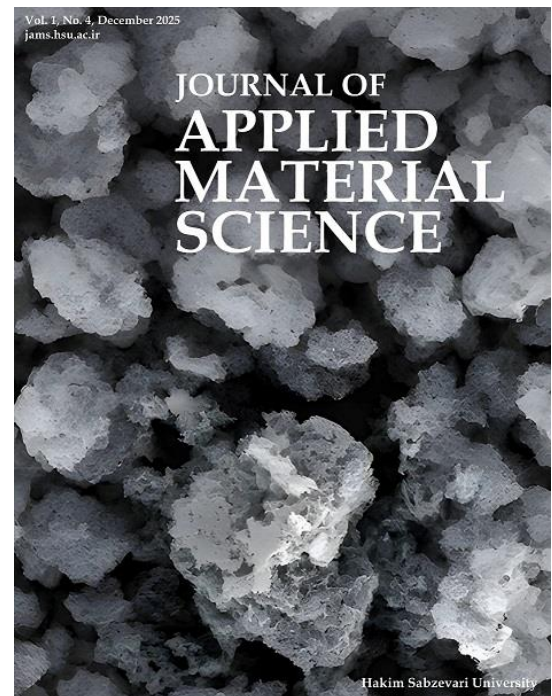
Dauson Nyonyi, V.V.S. Prasad, P. Swapna, M.V. Naga Sankaram

doi: 10.22034/jams.2025.210155

ABOUT COVER

Graphene quantum dots, much like the well-known reduced graphene oxide aerogels, can be transformed into hydrogels and aerogels using the hydrothermal reduction process. The cover showcases a regenerated image derived from a Scanning Electron Microscope image of highly porous aerogels created through the hydrothermal reduction of graphene quantum dots derived from citric acid.

(Note: The covers of this journal are created in part using artificial intelligence (AI) technologies, with direct human supervision. AI and AI-assisted technologies are permitted only for generating graphical abstract suggestions. If such technologies are used in the manuscript preparation, it must be clearly disclosed in the Acknowledgments section.)



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