Alexandra Maria Isabel Trefilov

Experience **11 years**

Email: **alexandra.trefilov@inflpr.ro**

Position: **Scientific Researcher**

Department/Service: **Lasers / TAF Group**

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EDUCATION

2016 – PhD in Physics, University of Bucharest, Doctoral Department: Atmospheric and Earth Physics - Renewable Energy Sources

2012 – Master of Science in Physics, University of Bucharest, Department: Renewable and Alternative Energy Sources

2009 – Bachelor of Science in Chemistry, University of Bucharest, Department: Radiochemistry

REVIEWER IN SCIENTIFIC JOURNALS

Reviewer for the journal Applied Surface Science Advances

DISTINCTIONS-AWARDS-HIGHLIGHT

Awards and medals: 9, 3 for patents, 4 for articles and 2 for posters

CURRENT RESEARCH INTERESTS

-Theoretical or/and experimental research in Materials engineering with applications in lasers, glasses, sensors, supercapacitors, and fuel cells.

- Preparation of graphene, reduced graphene, vertical graphene, and carbon gels by chemical methods or radio frequency plasma-assisted chemical vapor deposition for renewable and alternative energy sources.

- Magnetron sputtering thin film deposition.

- Electrochemical analysis.

PAST RESEARCH ACTIVITIES

- Experimental research in Materials engineering with applications in sensors, supercapacitors, and PEM fuel cells.

- Chemical synthesis and structural/electrochemical analysis of: graphene oxide, graphene, carbon based composites, composite polymeric materials, and metal catalysts (i.e. noble metals and non-noble metals – Ni, Co, Fe).

- Sol-gel synthesis of organic and carbon gels for supercapacitors and fuel cells.

FUNDED RESEARCH PROJECTS

National

PD 106/2020 – NanoFunCFC – Plasma Functionalized Carbon Nanowalls for Proton Exchange Membrane Fuel Cell Applications

73 PED/2017 – NITRO-NANOC-FC – Proton Exchange Membrane Fuel Cells Based On NitrogenDoped Nanocarbons

PUBLICATIONS-CITATIONS

- ResearcherID WOS: AAV-6643-2021
- Scopus Author ID: 36931242900
- ORCID: https://orcid.org/0000-0002-6215-1344
- Brainmap ID: U-1700-036L-6141
- No. of Citations: 50 without self-citations;
- No. of ISI published articles: 12
- No. of ISBN published works: 7
- No. of patents: 2
- Hirsch index: 4

SELECTED PUBLICATIONS

Selected ISI publications as first/corresponding author

1. Balan, A.E.; Bita, B.I.; Vizireanu, S.; Dinescu, G.; Stamatin, I.; **Trefilov, A.M.I.;** Carbon Nanowalls Microporous Layer for Proton Exchange Membrane Fuel Cell, MEMBRANES 12(11), 1064 (2022). **https://doi.org/10.3390/membranes12111064**

2. Trefilov, A.M.I., Balan, A., Stamatin, I., Hybrid proton-exchange membrane based on perfluorosulfonated polymers and resorcinol–formaldehyde hydrogel, Polymers 13(23), 4123 (2021). **https://doi.org/10.3390/polym13234123**

3. Ionescu, V.; Balan, A.E.; **Trefilov, A.M.I.;** Stamatin, I.; Exergetic Performance of a PEM Fuel Cell with Laser-Induced Graphene as the Microporous Layer, ENERGIES, 14(19), 6232; (2021); **https://doi.org/10.3390/en14196232**

4. Tiliakos, A.; **Trefilov, A.M.I.;** Tanasa, E.; Balan, A.E.; Stamatin, I.; Laser-induced graphene as the microporous layer in proton exchange membrane fuel cells, Applied Surface Science 504; 144096 (2020) . **https://doi.org/10.1016/j.apsusc.2019.144096**

5. Trefilov, A.M.I.; Tiliakos, A.; Serban, E.C.; Ceaus, C.; Iordache, S.M.; Voinea, S.; Balan, A.E.; Carbon Xerogel As Gas Diffusion Layer In PEM Fuel Cells; Int. J. of Hydrogen Energy 42 (15), 10448-10454 (2017). **https://Doi.Org/10.1016/J.Ijhydene.2017.03.016**