

Selected publications



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- ◆ D.V. Cosma, M.C. Roșu*, C. Socaci, A.M. Rostas, A. Urda, T. Radu, A. Turza, M. Dan, R. Costescu, K.R. Gustavsen, O. Dobroliubov, K Wang*, **Adsorption-catalysis synergy in the visible-light-driven removal of 17β-estradiol by (Au)TiO₂ nanotubes-graphene composites**, *J. Environ. Chem. Eng.* 12 (2024) 112885, 12 pp. <https://doi.org/10.1016/j.jece.2024.112885>
- ◆ D.V. Cosma, C. Tudoran, M. Coroș, C. Socaci, A. Urda, A. Turza, M.C. Roșu*, L. Barbu-Tudoran, I. Stanculescu, **Modification of cotton and leather surfaces using cold atmospheric pressure plasma and TiO₂-SiO₂-reduced graphene oxide nanopowders**, *Materials* 16 (2023) 1397, 19 pp. <https://doi.org/10.3390/ma16041397>
- ◆ D. Bala, I. Matei, G. Ionita, D.V. Cosma, M.C. Rosu, M. Stanca, C. Gaidau, M. Baleanu, M. Virgolici, I. Stanculescu, **Luminescence, paramagnetic, and electrochemical properties of copper oxides-decorated TiO₂/graphene oxide nanocomposites**, *Int. J. Mol. Sci.* 23 (2022) 14703, 12 pp. <https://doi.org/10.3390/ijms232314703>
- ◆ D. Cosma, A. Urda, T. Radu, M.C. Rosu, M. Mihet, C. Socaci*, **Evaluation of the photocatalytic properties of copper oxides/graphene/TiO₂ nanoparticles composites**, *Molecules* 27 (2022) 5803, 15 pp. <https://doi.org/10.3390/molecules27185803>
- ◆ E. Indrea, M.C. Rosu*, R.C. Suciuc, T.D. Silipas, V. Danciu, **Microstructure of titania aerogels by reverse Monte Carlo simulations**, *J. Phys. Chem. Solids* 168 (2022) 110826, 5 pp. <https://doi.org/10.1016/j.jpcs.2022.110826>
- ◆ A. Urda, T. Radu, C. Socaci*, V. Floare-Avram, D. Cosma, M.C. Rosu, M. Coros, S. Pruneanu, F. Pogacean, **Evaluation of N-doped graphene role in the visible-light driven photodegradation of sulfamethoxazole by a TiO₂-silver-graphene composite**, *J. Photochem. Photobiol. A: Chem.* 425 (2022) 113701, 9 pp. <https://doi.org/10.1016/j.jphotochem.2021.113701>
- ◆ N. Ilie, C. Sarosi, M.C. Rosu, M. Moldovan, **Synthesis and characterization of graphene oxide-zirconia (GO-ZrO₂) and hydroxyapatite-zirconia (HA-ZrO₂) nano-fillers for resin-based composites for load-bearing applications**, *J. Dent.* 105 (2021) 103557, 9 pp. <https://doi.org/10.1016/j.jdent.2020.103557>

- ◆ C. Tudoran, M.C. Roșu, M. Coroș, **A concise overview on plasma treatment for application on textile and leather materials**, *Plasma Processes and Polymers*, 17(8) (2020) 2000046, 15 pp. <https://doi.org/10.1002/ppap.202000046>
- ◆ M. Coros, C. Socaci, S. Pruneanu, F. Pogacean, M.C. Rosu, A. Turza, L. Magerusan, **Thermally reduced graphene oxide as green and easily available adsorbent for Sunset yellow decontamination**, *Environ. Res.* 182 (2020) 109047, 9 pp. <https://doi.org/10.1016/j.envres.2019.109047>
- ◆ A.J.M. Al-Ogaidi, R.I. Stefan-van Staden, L.A. Gugoasa, M.C. Rosu, C. Socaci, **Electrochemical determination of the KRAS genetic marker for colon cancer with modified graphite and graphene paste electrodes**, *Anal. Lett.* 51(17) (2018) 2820-2832 <https://doi.org/10.1080/00032719.2018.1453516>
- ◆ M. Moldovan, D. Prodan, C. Sarosi, R. Carpa, C. Socaci, M.C. Rosu*, S. Pruneanu, **Synthesis, morpho-structural properties and antibacterial effect of silicate-based composites containing graphene oxide/hydroxyapatite**, *Mater. Chem. Phys.* 217 (2018) 48–53 <https://doi.org/10.1016/j.matchemphys.2018.06.055>
- ◆ R.I. Stefan-van Staden, L.R. Balahura, L.A. Gugoasa, J.F. van Staden, H.Y. Aboul-Enein, M.C. Rosu, S. Pruneanu, **Pattern recognition of 8-hydroxy-2'-deoxyguanosine in biological fluids**, *Anal. Bioanal. Chem.*, 410 (2018) 115–121 <https://doi.org/10.1007/s00216-017-0698-7>
- ◆ M.C. Rosu, C. Socaci, M. Coros, F. Pogacean, L. Magerusan, A. Turza, S. Pruneanu, **Azo dyes degradation using TiO₂-Pt/graphene oxide and TiO₂-Pt/reduced graphene oxide photocatalysts under UV and natural sunlight irradiation**, *Solid State Sci.* 70 (2017) 13-20 <https://doi.org/10.1016/j.solidstatesciences.2017.05.013>
- ◆ R.I. Stefan-van Staden, A.G. Diaconeasa, L.A. Gugoasa, M.C. Rosu, S. Pruneanu, **Molecular recognition of pyruvic acid and folic acid in whole blood**, *RSC Adv.*, 7 (2017) 50072-50078 <https://doi.org/10.1039/C7RA09260A>
- ◆ L.A. Gugoasa, R.I. Stefan-van Staden, A.J.M. AlOgaidi, C. Stanciu-Gavan, J.F. van Staden, M.C. Rosu, S. Pruneanu, **Molecular recognition of colon cancer biomarkers: P53, KRAS and CEA in whole blood samples**, *J. Electrochem. Soc.*, 164(9) (2017) B443-B447 <https://doi.org/10.1149/2.1191709jes>
- ◆ M.C. Rosu, C. Socaci, V. Floare-Avram, G. Borodi, F. Pogacean, M. Coros, L. Magerusan, **Photocatalytic performance of graphene/TiO₂-Ag composites on amaranth dye degradation**,

S. Pruneanu, *Mater. Chem. Phys.* 179 (2016) 232-241 <https://doi.org/10.1016/j.matchemphys.2016.05.035>

◆ M.C. Rosu, I. Bratu, **Promising psyllium-based composite containing TiO₂ nanoparticles as aspirin-carrier matrix**, *Prog. Nat. Sci.: Mater. Int.* 24(3) (2014) 205-209 <https://doi.org/10.1016/j.pnsc.2014.05.007>

◆ M.C. Rosu, R.C. Suciu, M. Mihet, I. Bratu, **Physical-chemical characterization of titanium dioxide layers sensitized with the natural dyes carmine and morin**, *Mater. Sci. Semicond. Process.* 16(6) (2013) 1551-1557 <https://doi.org/10.1016/j.mssp.2013.05.020>

◆ M.C. Rosu, R.C. Suciu, M.D. Lazar, I. Bratu, **The influence of alizarin and fluorescein on the photoactivity of Ni, Pt and Ru-doped TiO₂ layers**, *Materials Science and Engineering B* 178(7) (2013) 383-390 <https://doi.org/10.1016/j.mseb.2013.01.001>