

IOSIN Sistem de instalații complexe de tip XPS/ESCA și cercetare folosind radiația sincrotron

INCD Fizica Materialelor Măgurele

A. Articole publicate / trimise în anul 2023

1. *Multicationic LDH-derived CoxCeMgAlO mixed oxide catalysts for the total oxidation of methane*, M.C. Stoian, C. Romanitan, G. Craciun, D.C. Culita, F. Papa, M. Badea, C. Negrila, I. Popescu, I.C. Marcu, **Applied Catalysis A-General** **650**, 119001:1-119001:12 (2023). **JIF = 5.5, AIS = 0.859.**

2. *Experimental band structure of PbZrTiO<sub>3</sub>: Mechanism of ferroelectric stabilization*, D.G. Popescu, M.A. Husanu, P.C. Constantinou, L.D. Filip, L. Trupina, C.I. Bucur, I. Pasuk, C. Chirila, V. Stancu, L.M. Hrib, L. Pintilie, T. Schmitt, C.M. Teodorescu, V.N. Strocov, **Advanced Science** **10**(6), 2205476:1-2205476:12 (2023). **JIF = 15.1, AIS = 3.548.**

3. *Kittel's model for ferromagnetic domains, revised and completed, including the derivation of the magnetic hysteresis*, C.M. Teodorescu, **Results in Physics** **46**, 106287:1-106287:17 (2023). **JIF = 5.3, AIS = 0.654.**

4. *Surface charge dynamics on air-exposed ferroelectric Pb(Zr,Ti)O<sub>3</sub>(001) thin films*, L.E. Abramiuc, L.C. Tanase, M.J. Prieto, L. de Souza Caldas, A. Tiwari, N.G. Apostol, M.A. Husanu, C.F. Chirila, T. Schmidt, L. Pintilie, C.M. Teodorescu, **Nanoscale** **15**(31), 13062–13075 (2023). **JIF = 6.7, AIS = 1.258.**

5. *Two dimensional landscape of ferromagnetic domains and the resulting magnetization curves*, C.M. Teodorescu, **Results in Physics** **54**, 107109:1-107109:19 (2023). **JIF = 5.3, AIS = 0.654.**

6. *Straightforward FeOOH nanografting of Al-based SrTiO<sub>3</sub> perovskite material as core-shell nanoflower-like heteronanostructure with enhanced solar light-driven photodegradation capability*, A.I. Borhan, D.D. Herea, M.A. Husanu, D.G. Popescu, C.N. Borca, T. Huthwelker, G. Bulai, I. Radu, A. Constantin Dirtu, D. Dirtu, C. Mita, G. Stoian, G. Ababei, N. Lupu, A. Pui, D. Gherca, **Applied Surface Science** **614**, 156247:1-156247:12 (2023). **JIF = 6.7, AIS = 0.867.**

7. *WO<sub>3</sub> layer sensitized with BiVO<sub>4</sub> and MIL-101(Fe) as photoanode for photoelectrochemical water oxidation*, M. Sima, E. Vasile, N. Preda, E. Matei, A. Sima, C. Negrila, **Journal of Physics and Chemistry of Solids** **181**, 111472:1-111472:10 (2023). **JIF = 4.0, AIS = 0.508.**

8. *Nanostructured Al<sub>2</sub>O<sub>3</sub>/graphene additive in bio-based lubricant: A novel approach to improve engine performance*, S.J. Hettiarachchi, J. Bowen, M. Kershaw, I.A. Baragau, A. Nicolaev, S. Kellici, **Tribology International** **186**, 108619:1-108619:13 (2023). **JIF = 6.2, AIS = 0.865.**

9. *Copper-/zinc-doped TiO<sub>2</sub> nanopowders synthesized by microwave-assisted sol-gel method*, L. Predoana, G. Petcu, S. Preda, J. Pandelescu, S.V. Petrescu, A. Baran, N.G. Apostol, R.M. Costescu, V.-A. Surdu, B.S. Vasile, A.C. Ianculescu, **Gels** **9**(4), 267:1-267:25 (2023). **JIF = 4.6, AIS = 0.626.**

10. *TiO<sub>2</sub>/ZIF-67 nanocomposites synthesized by the microwave-assisted solvothermal method: a correlation between the synthesis conditions and antimicrobial properties*, R.D. Campos, A.L. Menezes de Oliveira, A.M. Rostas, A.C. Kuncser, C.C. Negrila, A.C. Galca, C. Felix, L. Castellano, F.F. da Silva, I. M.G. dos Santos, **New Journal of Chemistry** **47**(5), 2177-2188 (2023). **JIF = 3.3, AIS = 0.444.**
11. *Iron oxide/hydroxide-nitrogen doped graphene-like visible-light active photocatalytic layers for antibiotics removal from wastewater*, R. Ivan, C. Popescu, V.A. Antohe, S. Antohe, C. Negrila, C. Logofatu, A. Perez del Pino, E. Gyorgy, **Scientific Reports** **13**(1), 2740:1-2740:18 (2023). **JIF = 4.6, AIS = 1.132.**
12. *Pulsed laser deposited V<sub>2</sub>O<sub>3</sub> thin-films on graphene/aluminum foil for micro-battery applications*, T. Tite, C. Ungureanu, M. Buga, I. Stavarache, E. Matei, C.C. Negrila, L. Trupina, A. Spinu-Zaulet, A.C. Galca, **Journal of Electroanalytical Chemistry** **933**, 117290:1-117290:16 (2023). **JIF = 4.5, AIS = 0.577.**
13. *Carbon-based heterostructure from multi-photo-active nanobuilding blocks SrTiO<sub>3</sub>@NiFe<sub>2</sub>O<sub>4</sub>@Fe<sub>0</sub>@Ni<sub>0</sub>@CNTs with derived nanoreaction metallic clusters for enhanced solar light-driven photo-degradation of harmful antibiotics*, A.I. Borhan, A.I. Ghemes, M.A. Husanu, D.G. Popescu, C.N. Borca, T. Huthwelker, I. Radu, A.C. Dirtu, D. Dirtu, G. Bulai, N. Lupu, M.N. Palamaru, A.R. Iordan, D. Gherca, **Applied Surface Science** **622**, 156987:1-156987:17 (2023). **JIF = 6.7, AIS = 0.867.**
14. *Control of spectral, topological and charge transport properties of graphene via circularly polarized light and magnetic field*, A. Pena, **Results in Physics** **46**, 106257:1-106257:15 (2023). **JIF = 5.3, AIS = 0.654.**
15. *Photocatalytic activity of the blends based on TiO<sub>2</sub> nanoparticles and reduced graphene oxide for degradation of acetaminophen*, M. Daescu, M. Chivu, E. Matei, C. Negrila, O. Cramariuc, M. Baibarac, **Molecules** **28**(11), 4546:1-4546:20 (2023). **JIF = 4.6, AIS = 0.660.**
16. *Boron and nitrogen co-doped carbon-based nanomaterials/nickel oxide/hydroxide hybrids for sunlight induced photocatalytic water cleaning*, P.G. Lebiere, R. Ivan, A.P. del Pino, C. Logofatu, C. Negrila, E. Gyorgy, **Colloids and Surfaces A-Physicochemical and Engineering Aspects** **676**(A), 132159:1-132159:14 (2023). **JIF = 5.2, AIS = 0.600.**
17. *Defect structures and (ferro)magnetism in Zn<sub>1-x</sub>Fe<sub>x</sub>O nanoparticles with the iron concentration level in the dilute regime (x=0.001-0.01) prepared from acetate precursors*, V. Mihalache, C. Negrila, M. Secu, I. Mercioniu, N. Iacob, V. Kuncser, **Results in Physics** **51**, 106644:1-106644:13 (2023). **JIF = 5.3, AIS = 0.654.**
18. *Antibacterial activity of PVA hydrogels embedding oxide nanostructures sensitized by noble metals and ruthenium dye*, D. Pelinescu, M. Anastasescu, V. Bratan, V.A. Maraloiu, C. Negrila, D. Mitrea, J. Calderon-Moreno, S. Preda, I.C. Gifu, A. Stan, R. Ionescu, I. Stoica, C. Anastasescu, M. Zaharescu, I. Balint, **Gels** **9**(8), 650:1-650:22 (2023). **JIF = 4.6, AIS = 0.626.**

19. *Co- and Ni-doped TiO<sub>2</sub> nanoparticles supported on zeolite Y with photocatalytic properties*, G. Petcu, F. Papa, I. Atkinson, A. Baran, N.G. Apostol, S. Petrescu, L. Richaudeau, J.L. Blin, V. Parvulescu, **Nanomaterials** **13**(15), 2200:1-2200:19 (2023). **JIF = 5.3, AIS = 0.712.**
20. *Silver nanoparticles decorated ZnO-CuO core-shell nanowire arrays with low water adhesion and high antibacterial activity*, A. Costas, N. Preda, I. Zgura, A. Kuncser, N. Apostol, C. Curutiu, I. Enculescu, **Scientific Reports** **13**(1), 10698:1-10698:15 (2023). **JIF = 4.6, AIS = 1.132.**
21. *From non-stoichiometric CTSe to single phase and stoichiometric CZTSe films by annealing under Sn plus Se atmosphere*, M.Y. Zaki, F. Sava, I.D. Simandan, A.T. Buruiana, A.E. Bocirnea, I. Stavarache, A. Velea, A.C. Galca, L. Pintilie, **Ceramics International** **49**(21), 33692-33702 (2023). **JIF = 5.2, AIS = 0.590.**
22. *Structural and electrical properties of novel Cr/Fe mixed transition-metal phosphates*, Z. Mighri, K. Souiwa, A.M. Rostas, R.E. Patru, A.E. Bocirnea, N. Iacob, V. Kuncser, O. El Khouja, L.N. Leonat, M. Hidouri, H. Nasri, A.C. Galca, **Inorganic Chemistry** **62**(22), 8530-8542 (2023). **JIF = 4.6, AIS = 0.750.**
23. *Liquid phase oxidation of alkenes and glycerol with molecular oxygen over mixed-ligand copper(II) complexes grafted on GO as catalysts*, C. Rizescu, M. El Fergani, D.I. Eftemie, B. Cojocaru, D. Popescu, M. Andruh, V.I. Parvulescu, **Applied Catalysis A-General** **663**, 119302:1-119302:9 (2023). **JIF = 5.5, AIS = 0.859.**
24. *Floquet topological insulators with spin-orbit coupling*, A. Pena, C. Radu, **Physical Review B** (accepted, 2024). **JIF = 3.7, AIS = 0.971.**
25. *A.P. del Pino, P.G. Lebiere, A. Mestra, E. Gyorgy, C.G. Lopez, W. Bacsá, C. Logofatu, Functional enhancement of laser deposited carbon-based supercapacitor electrodes upon post-annealing treatment*, **Ceramics International** **49**(21), 33469-33479 (2023). **JIF = 5.2, AIS = 0.590.**
26. *Surface spin asymmetry in Pt(001)-hex induced by electron accumulation*, C. M. Teodorescu, L. E. Borcan, N. G. Apostol, A. Nicolaev, R. M. Costescu, M. A. Huşanu, D. G. Popescu, G. A. Lungu, A.-C. Iancu, in review at **Appl. Surf. Sci.** (2024). **JIF = 6.7, AIS = 0.867.**
27. *Spin asymmetry of O 2p -related states in SrTiO<sub>3</sub>(001)*, D. G. Popescu, A. Nicolaev, R. M. Costescu, L. E. Borcan, G. A. Lungu, C. A. Tache, M. A. Huşanu, C. M. Teodorescu, in review at **Phys. Rev. Research** (2024). **JIF = 4.2, AIS = 1.685.**
28. *Effects of low and high growth temperatures on the properties of ultrathin BN layers grown on sapphire by molecular beam epitaxy*, E.-M. Pavelescu, C. Romaniţan, I. Mihalache, R. Gavrilă, O. Ligor, M. Stoian, G. Crăciun, S. Vulpe, C. Obreja, A. C. Iancu, C. M. Teodorescu, M. de la Mata, M. Herrera, S. I. Molina, E. Luna, **Scr. Mater.**, submitted (2023). **JIF = 6.0, AIS = 1.255.**

29. K. Nguyen, M. Hus, I.A. Baragau, J. Bowen, T. Heil, A. Nicolaev, L.E. Abramiuc, A. Sapelkin, T. Sajjad, S. Kellici, *Synergistic design of nitrogen-doped carbon quantum dots: unraveling the crucial role of nitrogen precursors in tailoring enhanced optical and chemical properties*, *Advanced Materials* (2023), *submitted*. **JIF = 29.4, AIS = 6.781.**
30. A. Pena, C. Radu, B. Ostahie, *Floquet topological transitions in 2D Su-Schrieffer-Heeger model*, *Physical Review B* (2023), *to be submitted*. **JIF = 3.7, AIS = 0.971.**
31. S.C. Ciobanu, S.L. Iconaru, D. Predoi, C.C. Negrila, S. Talu, R.S. Matos, H.D.F. Filho, *Physico-chemical, antifungal and fractal characteristics of silver-magnesium doped hydroxyapatite*, *Coatings* (2023), *submitted*. **JIF = 3.4, AIS = 0.439.**
32. I.V. Dinu, C.E. Simion, N.G. Apostol, O.G. Florea, C.G. Mihalcea, *Conduction mechanism of  $Gd_2O_3$  induced by  $CO_2$  under in-field conditions*, *Physica E - Low-Dimensional Systems & Nanostructures* (2023), *submitted*. **JIF = 3.3, AIS = 0.435.**
33. I. Radu, A.I. Borhan, D. Gherca, D.G. Popescu, C.N. Borca, T. Huthwelker, G. Bulai, M.A. Husanu, A. Pui, *In-operando XPS investigation on enhanced charge transfer and lattice oxygen oxidation in aliovalent doped and  $\delta$ -FeOOH surface decorated of  $Al_{0.03}:SrTiO_3$  perovskite photocatalyst*, *Journal of Materials Chemistry A* (2023), *submitted*. **JIF = 11.9, AIS = 2.112.**
34. N. Iacob, C. Chirila, M. Sangare, A. Kuncser, A. Stanciu, M. Socol, C. Negrila, M. Botea, C. Locovei, G. Schinteie, A. Galca, A. Stanculescu, L. Pintilie, V. Kuncser, B. Borca, *Spin rectification effect in a guanine-based spin valve*, *Journal of Alloys and Compounds* (2023), *submitted*. **JIF = 6.2, AIS = 0.738.**
35. A. Uddin Ammar, A. Popa, D. Toloman, S. Macavei, A. Ciorita, A.E. Bocirnea, M. Stan, E. Erdem, A.M. Rostas, *Nitrogen-doped  $WO_3$  nanoparticles as electrode materials in all-in-one supercapacitor devices*, *ACS Applied Engineering Materials* (2023), *submitted*. **JIF = 0.0 (new journal), AIS = 0.000.**
36. M. Oumezzine, A. M. Rostas, A. E. Bocirnea, El K. Hlil, A. C. Galca *A-site K-doped lanthanum manganite nanocrystalline  $La_{0.67}Ba_{0.33}MnO_3$  for room-temperature micro-scale magnetic cooling*, *Journal of Alloys and Compounds* (2023), *submitted*. **JIF = 6.2, AIS = 0.738.**
37. A.T. Buruiana, A.E. Bocirnea, F. Sava, E. Matei, T. Tite, M. Apostol, I. D. Simandan, A.C. Galca, A. Velea, *Two-step process for the fabrication of various thickness  $MoS_2$  thin films and direct FLG/ $MoS_2$  heterostructures*, *Materials Chemistry and Physics* (2023), *submitted*. **JIF = 4.6, AIS = 0.554.**

B. Cereri de brevete de invenție depuse în 2023:

1. Costel Cotirlan-Simioniuc, "Modulator electro-optic cu modificarea continuă a indicelui de refracție cu valori supraunitare", CBI a2023 00217.