

Cristian-Mihail TEODORESCU
Born in 1966, married, four children
Hirsch: 38 (Google Scholar), 34 (Web of Science)
Head of the Department of Surfaces and Interfaces
National Institute of Materials Physics,
Professor and PhD Advisor,
Faculty of Physics, University of Bucharest

Atomiștilor 405A,
077125 Măgurele–Ilfov
Romania
phone + 40-21-3690170; +40-724-291045
fax +40-21-3690177
e-mail teodorescu@infim.ro, cristian@cmteodorescu.ro
Google Scholar ID: teodorescucm, ResearcherID: N-3796-2017
ORCID: 0000-0003-1384-9049



EDUCATION :

1984: Baccalaureate, “Gheorghe Lazăr” High-school Bucharest, 10/10.
1990: M. Sc. (Engineer), University of Bucharest (Romania), Department of Applied Physics, 9.88/10.
Dissertation title: *Geometric effects and measurement methods of galvanomagnetic effects on circular samples*, advisor Dr. Bogdan Logofătu, presented also at the CAS’90 International Semiconductor Conference, Sinaia, 1990.
1995: Ph. D, Université Paris Sud Orsay (France), Chemical Physics, “très honorable”.
Thesis title: *Study of evolution of inner-shell excitations from free atoms to solids. X-ray photoabsorption of metal and insulating clusters*, advisor Dr. Jean-Marc Esteve, 6 papers resulting (J. Phys. B 1993 and 1997, Nucl. Instrum. Meth. Phys. Res. A 1994, J. Electr. Spectrosc. Relat. Phenom. 1999 and 2000, Phys. Rev. B 2001, main author for all these papers)
2015: Habilitation in Physics, University of Bucharest, Faculty of Physics.
Habilitation thesis title: *Ferromagnetic and ferroelectric surfaces and interfaces*.

POSITIONS:

1990–1991: Physicist, Institute of Physics and Technology of Materials, Bucharest-Măgurele PO Box MG7, 76900, Romania.
1991–1995: Ph.D student, Laboratoire de Spectroscopie Atomique et Ionique, Bât. 350, Université Paris Sud, 91405 Orsay, France.
1995–1996: post-doctoral fellowship, LURE, Bât. 209d, Centre Universitaire Paris Sud, BP 34, 91898 Orsay, France.
1996–1998: research scientist, Universität Osnabrück, Barbarastr. 7, 49069 Osnabrück, Germany.
1999–2001: beamline scientist (CNRS), LURE, Bât. 209d, Centre Universitaire Paris Sud, BP 34, 91898 Orsay, France.
2001–2005: senior scientist III, National Institute of Material Physics (NIMP), Atomiștilor 405A, 077125 Măgurele–Ilfov, Romania.
2001–2002 : post-doctoral fellowship, Daresbury Laboratory, Warrington Cheshire, WA4 4AD, U.K.
2005–2009: senior scientist II, NIMP.
2009– to date: senior scientist I, NIMP.
2010–2011: Department head, Nanoscale Condensed Matter Physics, NIMP Bucharest (35–40 people).
2011–2021: Group leader, Surfaces and Interfaces, NIMP Bucharest (29 people).
2021– to date: Department head, Surfaces and Interfaces, NIMP Bucharest (24 people).
2015– to date: Professor, PhD Advisor, University of Bucharest, Faculty of Physics, Atomiștilor 405, 077125 Măgurele–Ilfov, Romania (10 PhD students, 5 graduated).
2018 – 2026: President of the Scientific Council of NIMP.

LANGUAGES : Romanian (native), French (fluent), English (fluent), German (fair).

PROGRAMMING : Igor, Basic, Pascal, Fortran, Mathematica, IEEE-488 interfaces; MS Office, CorelDraw

AWARDS :

- Third prize, International Physics Olympiad, Sigtuna, Sweden, 1984.
- “Radu Grigorovici” Prize of the Romanian Academy, awarded in 2015 for results obtained in 2013.

OTHER:

- Leader of R&D projects of about 10 M€, including a PCCE project (2010–2013) of about 1.6 M€, a PCCDI project (2018–2020) of about 1.1 M€ and team leader in a Center of Excellence (2026–2030), 2.5 M€.
- Director of an infrastructure project (POS-CCE SMIS 2665, 2009–2011) of about 10.5 M€. Setup of four surface science laboratories. Depute Director of a second infrastructure project (2014–2015) of similar worth.
- Author and co-author of 170 papers in journals indexed by Web of Science, about 50 papers published in journals with high impact factor (over 5), about 4400 citations, h-index 34 (Web of Science) or 38 (Google Scholar), 7 book chapters.
- Editorial Boards: Physics (MDPI), Journal of Optoelectronics and Advanced Materials, Optoelectronics and Advanced Materials – Rapid Communications, Digest Journal of Nanomaterials and Biostructures.
- 3 national (RO) patents awarded, 2 patent applications in evaluation.

RESEARCH SKILLS:

Keywords : synchrotron radiation, surface science, clusters and nanoparticles, reactivity, structure, ferroelectrics, magnetism, photocatalysis, catalysis, graphene.

Techniques:

- Photoelectron spectroscopy (PES): X-ray photoelectron spectroscopy (XPS) or electronic structure for chemical analysis (ESCA), core-level and valence-band PES, photoelectron diffraction (PED), Fermi surface mapping, angle-resolved PES, angle-resolved ultraviolet photoelectron spectroscopy (ARUPS), spin-resolved PES.
- Surface science techniques: low energy electron diffraction (LEED), reflection high energy electron diffraction (RHEED), Auger electron spectroscopy, secondary ion mass spectroscopy (SIMS), sample preparations in UHV, molecular beam epitaxy (MBE), positron annihilation-induced Auger electron spectroscopy (PAES).
- Photoelectron spectromicroscopy, low energy electron microscopy (LEEM), photoelectron microscopy (PEEM), NanoESCA.
- X-ray absorption: extended X-ray absorption fine structure (EXAFS), X-ray absorption near-edge structure (XANES), near-edge absorption fine structure (NEXAFS), X-ray absorption spectroscopy (XAS), X-ray fluorescence.
- Scanning tunneling microscopy / spectroscopy (STM/STS).
- Coincidence spectroscopy: photoelectron-photoion-photoion coincidences (PEPIPICO), zero electron kinetic energy (ZEKE) spectroscopy, threshold electron spectroscopy.
- Magnetism: magneto-optical Kerr effect (MOKE), vibrating sample magnetometry (VSM), superconducting quantum interference device (SQUID), X-ray magnetic (circular, linear) dichroism (XMCD, XMLD).
- X-ray diffraction.
- Development of various devices apparatuses for UHV, surface science, low temperatures, cluster production and analysis.

Current fields of interest :

- Ferroelectric thin films; molecular reactions on ferroelectric surfaces; catalytic and photocatalytic properties of ferroelectric surfaces.
- Band bending at free ferroelectric surfaces and at Schottky contacts.
- Diluted magnetic semiconductors.
- Magnetic metal / semiconductor heterostructures.

- Multiferroic heterostructures.
- Interfaces between graphene and insulators or ferroelectrics.
- Photocatalysts for air and water decontamination.
- Nanoparticles with biological applications (core-shell systems, iron oxide nanoparticles).
- Positron annihilation-induced Auger electron spectroscopy (PAES).
- Theoretical aspects of ferroic (ferroelectric, ferromagnetic, multiferroic) ordering.

MISCELLANEOUS:

Science fiction writer, 4 books published (2008, 2010, 2014 and 2025), several national literary awards, founder and President of the Romanian Society for Science Fiction and Fantasy (SRSFF).

PUBLICATIONS:

Papers:

(* = corresponding author)

1. *Possible multiple scattering effects on the EXAFS phase shifts in metallic manganese*, D. Macovei, C.M. Teodorescu, **Rev. Roum. Physique** **36**, 945–951 (1991).
2. *Unresolvable Rydberg lines in x-ray absorption spectra of free atoms*, C.M. Teodorescu, R.C. Karnatak, J.M. Esteve, A. El Afif, J.P. Connerade, **J. Phys. B: At. Mol. Opt. Phys.** **26**, 4019–4039 (1993).
3. *EXAFS characterization of Dy and Pd-Dy on alumina catalysts*, D. Macovei, V. Pârvulescu, C.M. Teodorescu, **React. Kin. Catal. Lett.** **52**, 81–86 (1993).
4. *An approximation of the Voigt I profile for the fitting of experimental x-ray absorption data*, C.M. Teodorescu, J.M. Esteve, R.C. Karnatak, A. El Afif, **Nucl. Instrum. Meth. Phys. Res. A** **345**, 141–147 (1994).
5. *K edge absorption spectra of sodium clusters: theory and experiment*, C.M. Teodorescu*, **Rom. Rep. Phys.** **46**, 835–859 (1994).
6. *X-ray absorption and Mössbauer spectroscopy of antimony compounds. Experimental and theoretical aspects*, P.E. Lippens, J.M. Durand, J. Olivier-Fourcade, J.C. Jumas, I. Lefebvre, M. Lanoo, A. El Afif, C.M. Teodorescu, J.M. Esteve, R.C. Karnatak, M. Womes, **Rom. Rep. Phys.** **46**, 823–833 (1994).
7. *Thermal induced evolution of chlorine-containing precursors in impregnated Pd / Al₂O₃ catalysts*, C. Contescu, D. Macovei, C. Craiu, C.M. Teodorescu, J.A. Schwarz, **Langmuir** **11**, 2031–2040 (1995).
8. *K edge photoabsorption spectra in gas phase alkali halides*, A. El Afif, R.C. Karnatak, J.M. Esteve, C.M. Teodorescu, M. Womes, E. Bouisset, **Physica B** **208&209**, 115–116 (1995).
9. *Polarized XAS experiments on magnetic rare earth clusters*, A.M. Flank, P. Lagarde, R. Delaunay, M. Pompa, C.M. Teodorescu, **Physica B** **208&209**, 773–774 (1995).
10. *K edge absorption spectra of sulphur in vapour, molecular and polymerized solid phases*, J.M. Durand, J. Olivier-Fourcade, J.C. Jumas, M. Womes, C.M. Teodorescu, A. El Afif, J.M. Esteve, R.C. Karnatak, **J. Phys. B: At. Mol. Opt. Phys.** **29**, 5773–5784 (1996).
11. *Atomic structure of the reactive Fe /Si (111) 7 x 7 interface*, A. Mascaraque, J. Avila, C.M. Teodorescu, M.C. Asensio, E.G. Michel, **Phys. Rev. B** **55**, R7315–R7318 (1997).
12. *Quantitative analysis of sodium 1s single and double excitation spectrum by using atomic profiles convolved by the instrumental function*, C.M. Teodorescu*, J.M. Esteve, R.C. Karnatak, A. El Afif, M. Womes, **J. Phys. B: At. Mol. Opt. Phys.** **30**, 4293–4313 (1997).
13. *Fe / Si (111) interface formation studied by photoelectron diffraction*, J. Avila, A. Mascaraque, C. Teodorescu, E.G. Michel, M.C. Asensio, **Surf. Sci.** **377-379**, 856–860 (1997).
14. *Retractable miniature cylindrical mirror analyzers*, C.M. Teodorescu, D. Gravel, E. Rühl, T.J. McAvoy, J. Choi, D. Pugmire, P. Pribil, J. Loos, P.A. Dowben, **Rev. Sci. Instrum.** **69**, 3805–3808 (1998).
15. *Sulfur 2p excitations and fragmentation of free sulfur aggregates*, C.M. Teodorescu, D. Gravel, E. Rühl, **J. Chem. Phys.** **109**, 9280–9287 (1998).
16. *Growth of epitaxial Co layers on Sb-passivated GaAs (110) substrates*, C.M. Teodorescu, J. Chrost, H. Ascolani, J. Avila, F. Soria, M.C. Asensio, **Surf. Rev. Lett.** **5**, 279–283 (1998).
17. *Initial stage of the growth of Fe on Si(111) (1 x 1) – H*, M.G. Martin, J. Avila, M. Gruyters, C. Teodorescu, P. Dumas, Y.J. Chabal, M.C. Asensio, **Appl. Surf. Sci.** **123-124**, 156–160 (1998).
18. *Effects of cluster size on inner valence-shell excitations in free atomic clusters*, A.A. Pavlychev, N.G. Fominykh, I.T. Steinberger, S. Rabe, B. Wassermann, D. Gravel, C.M. Teodorescu, E. Rühl, **J. Russ. Acad. Sci.** **8-9**, 97–102 (1998).

19. *Reducibility of ruthenium in relation with zeolite structure*, V.I. Pârvulescu, S. Coman, P. Palade, D. Macovei, C.M. Teodorescu, G. Filoti, R. Molina, G. Poncelet, F.E. Wagner, **Appl. Surf. Sci.** **141**, 164–176 (1999).
20. *Resonant excitation series at the Kr 3p and Xe 4p thresholds*, I.T. Steinberger, C.M. Teodorescu, D. Gravel, R. Flesch, B. Wassermann, G. Reichardt, C.W. Hutchings, A.P. Hitchcock, E. Rühl, **Phys. Rev. B** **60**, 3995–4004 (1999).
21. *Inner-shell excitation and fragmentation of sulfur aggregates*, C.M. Teodorescu*, D. Gravel, J. Choi, D. Pugmire, P.A. Dowben, N. Fominykh, A.A. Pavlychev, E. Rühl, **J. El. Spectrosc. Relat. Phenom.** **101–103**, 193–198 (1999).
22. *Inner-shell absorption spectra of potassium fluoride clusters*, C.M. Teodorescu*, M. Womes, J.M. Esteva, A. El Afif, R.C. Karnatak, A.M. Flank, P. Lagarde, **J. El. Spectrosc. Relat. Phenom.** **101–103**, 205–210 (1999).
23. *Epitaxial growth of bcc Co films on Sb-passivated GaAs(110) substrates*, C.M. Teodorescu*, M.G. Martin, N. Franco, H. Ascolani, J. Chrost, J. Avila, M.C. Asensio, **J. El. Spectrosc. Relat. Phenom.** **101–103**, 493–499 (1999).
24. *Sodium 1s photoabsorption spectra of Na and NaF clusters deposited in rare gas matrices*, C.M. Teodorescu*, J.M. Esteva, M. Womes, A. El Afif, R.C. Karnatak, A.M. Flank, P. Lagarde, **J. El. Spectrosc. Relat. Phenom.** **106**, 233–245 (2000).
25. *Evidence of bcc Mn epitaxial growth in Mn/M_xV_{1-x}(001) (M = Fe, Nb) superlattices*, P.Y. Friot, P. Turban, S. Andrieu, M. Piecuch, E. Snoeck, A. Traverse, E. Foy, C. Teodorescu, **Eur. Phys. J. B** **15**, 41–50 (2000).
26. *Crystal momentum dependence of the correlation satellite intensity in the 3p → 3d resonant photoemission of Bi₂Sr₂CaCu₂O_{2+δ}*, A. Goldoni, V. Corradini, U. del Pennino, P. Sangalli, F. Parmigiani, J. Avila, C. Teodorescu, **Europhys. Lett.** **50**, 347–353 (2000).
27. *Ferromagnetic hcp chromium in Cr/Ru(0001) superlattices*, M. Albrecht, M. Maret, J. Köhler, B. Gilles, R. Poinot, J.L. Hazemann, J.M. Tonnerre, C. Teodorescu, E. Bucher, **Phys. Rev. Lett.** **85**, 5344–5347 (2000).
28. *Structure of Fe layers grown on InAs(100)*, C. Teodorescu, F. Chevrier, V. Ilakovac, O. Heckmann, L. Lechevalier, R. Brochier, R.L. Johnson, K. Hricovini, **Appl. Surf. Sci.** **166**, 137–142 (2000).
29. *Na 1s excitations in vapor and solid sodium halides*, C.M. Teodorescu*, A. El Afif, J.M. Esteva, R.C. Karnatak, **Phys. Rev. B** **63**, 233106(1–4) (2001).
30. *Experimental evidence of long range magnetic order in the c(2x2) MnCu(100) surface alloy*, Y. Huttel, C.M. Teodorescu, F. Bertran, G. Krill, **Phys. Rev. B** **64**, 094405(1–4) (2001).
31. *Reduced magnetic moment per atom in small Ni and Co clusters embeded in AlN*, D. Zanghi, C.M. Teodorescu, F. Petroff, H. Fischer, C. Bellouard, C. Clerc, C. Pélissier, A. Traverse, **J. Appl. Phys.** **90**, 6367–6373 (2001).
32. *Electron accumulation layer on clean In-terminated InAs(001) (4x2) – c(8x2) surface*, P. De Padova, C. Quaresima, P. Perfetti, R. Larciprete, R. Brochier, C. Richter, V. Ilakovac, P. Bencok, C. Teodorescu, V.Y. Aristov, R.L. Johnson, K. Hricovini, **Surf. Sci.** **482–485**, 587–592 (2001).
33. *X-ray magnetic circular dichroism, photoemission and RHEED studies of Fe/InAs(100) interfaces*, C.M. Teodorescu*, F. Chevrier, R. Brochier, C. Richter, O. Heckmann, V. Ilakovac, P. De Padova, K. Hricovini, **Surf. Sci.** **482–485**, 1004–1009 (2001).
34. *NiMnSb/MgO/NiMnSb heterostructures grown by MBE*, P. Turban, S. Andrieu, E. Snoeck, B. Kierren, C. Teodorescu, **J. Magn. Magn. Mater.** **240**, 427–429 (2002).
35. *Reactivity and magnetism of Fe/InAs(100) interfaces*, C.M. Teodorescu*, F. Chevrier, R. Brochier, V. Ilakovac, O. Heckmann, L. Lechevalier, K. Hricovini, **Eur. Phys. J. B** **28**, 305–313 (2002).
36. *Growth and characterization of single crystalline NiMnSb thin films and epitaxial NiMnSb/MgO/NiMnSb(001) trilayers*, P. Turban, S. Andrieu, B. Kierren, E. Snoeck, C. Teodorescu, A. Traverse, **Phys. Rev. B** **65**, 134417(1–13) (2002).
37. *Structural and magnetic properties of Cr in Cr/Ru(0001) multilayers*, M. Albrecht, M. Maret, J. Köhler, B. Gilles, R. Poinot, J.L. Hazemann, J.M. Tonnerre, C. Teodorescu, E. Bucher, **Phys. Rev. B** **66**, 205410(1–9) (2002).
38. *Magnetic V embedded in copper evidenced by x-ray magnetic circular dichroism*, Y. Huttel, G. van der Laan, C.M. Teodorescu, P. Bencok, S.S. Dhesi, **Phys. Rev. B** **67**, 052408(1–4) (2003).
39. *A gas microstrip detector for XAS studies in the photon energy region of 250-1000 eV*, J.D. Lipp, J.E. Bateman, G.E. Derbyshire, I.W. Kirkman, G. van der Laan, R. Stephenson, C.M. Teodorescu, **J. Synchr. Rad.** **10**, 455–460 (2003).
40. *Magnetic instabilities in fcc Fe_xNi_{1-x} thin films*, E. Foy, S. Andrieu, M. Finazzi, R. Poinot, C.M. Teodorescu, F. Chevrier, G. Krill, **Phys. Rev. B** **68**, 094414(1–7) (2003).

41. *Atomic Structure and Magnetic Properties of Mn on InAs(100)*, K. Hricovini, P. De Padova, C. Quaresima, P. Perfetti, R. Brochier, C. Richter, V. Ilakovac, O. Heckmann, L. Lechevallier, P. Bencok, P. Le Fevre, C. Teodorescu, **Appl. Surf. Sci.** **212–213**, 17–25 (2003).
42. *Resonant photoemission and XMCD on Mn-based systems*, M.C. Richter, P. De Padova, C. Quaresima, P. Perfetti, R. Brochier, V. Ilakovac, O. Heckmann, L. Lechevallier, M. Zerrouki, C. Teodorescu, C.S. Fadley, N. Hamdan, K. Hricovini, **J. Alloys Compds.** **362**, 41–47 (2004).
43. *Structural and magnetic investigations of nickel clusters in C_{60} matrices*, C.M. Teodorescu*, D. Macovei, A. Lungu, **J. Optoelectr. Adv. Mater.** **6**, 1275–1285 (2004).
44. *Influence of the substrate surface termination on the properties of bcc-cobalt films: GaAs(110) versus Sb/GaAs(110)*, M. Izquierdo, M.E. Davila, C.M. Teodorescu, J. Chrost, H. Ascolani, J. Avila, M.C. Asensio, **Appl. Surf. Science** **234**, 468–474 (2004).
45. *Epitaxy and magnetic properties of surfactant-mediated growth of bcc cobalt*, M. Izquierdo, M. E. Dávila, J. Avila, H. Ascolani, C. M. Teodorescu, M. G. Martin, N. Franco, J. Chrost, A. Arranz, M. C. Asensio, **Phys. Rev. Lett.** **94**, 187601(1–4) (2005).
46. *Physical characterization of CdMnS nanocrystalline thin films grown by vacuum thermal evaporation*, F. Iacomi, I. Salaoru, N. Apetroaei, A. Vasile, C.M. Teodorescu, and D. Macovei, **J. Optoelectr. Adv. Mater.** **8**, 266–270 (2006).
47. *Ferromagnetic ordering of Mn diluted into InAs(100) probed by x-ray magnetic circular dichroism*, C. M. Teodorescu*, M. C. Richter, K. Hricovini, **J. Optoelectr. Adv. Mater.** **8**, 1200–1205 (2006).
48. *Increased surface hydrophilicity of titania thin films by doping*, D. Luca, D. Mardare, F. Iacomi, C. M. Teodorescu, **Appl. Surf. Sci.** **252**, 6122–6126 (2006).
49. *Thickness effect in $Pb(Zr_{0.2}Ti_{0.8})O_3$ ferroelectric thin films grown by pulsed laser deposition*, M. Lisca, L. Pintilie, M. Alexe, C.M. Teodorescu, **Appl. Surf. Sci.** **252**, 4549–4552 (2006).
50. *Comparative study of magnetism and interface composition in Fe/GaAs(100) and Fe/InAs(100)*, C.M. Teodorescu, D. Luca, **Surf. Sci.** **600**, 4200–4204 (2006).
51. *Characterization of titania thin films prepared by reactive pulsed-laser ablation*, D. Luca, D. Macovei, C.M. Teodorescu, **Surf. Sci.** **600**, 4342–4346 (2006).
52. *Low temperature two-dimensional behaviour of spin and orbital moments in Ni monolayers grown on Cu(100)*, C.M. Teodorescu*, **Surf. Sci.** **601**, 4292–4296 (2007).
53. *Fe-doped TiO_2 Thin Films*, D. Mardare, V. Nica, C.M. Teodorescu, D. Macovei, **Surf. Sci.** **601**, 4479–4483 (2007).
54. *On the hydrophilicity of nitrogen-doped TiO_2 thin films*, D. Mardare, D. Luca, C.M. Teodorescu, D. Macovei, **Surf. Sci.** **601**, 4515–4520 (2007).
55. *Structure, morphology and magnetism of Fe-Au core-shell nanoparticles*, O. Pana, C.M. Teodorescu, O. Chauvet, C. Payen, D. Macovei, R. Turcu, M.L. Soran, N. Aldea, L. Barbu, **Surf. Sci.** **601**, 4352–4357 (2007).
56. *Preparation and characterization of increased-efficiency photocatalytic $TiO_{2-2x}N_x$ thin films*, D. Luca, C.M. Teodorescu, R. Apetrei, D. Macovei, D. Mardare, **Thin Solid Films** **515**, 8605–8610 (2007).
57. *Photocatalytic and structural properties of mixed titania and zirconia aerogels*, V. Danciu, L. Baia, V. Cosoveanu, M. Baia, F. Vasiliu, L. Diamandescu, C.M. Teodorescu, M. Feder, J. Popp, **Optoelectr. Adv. Mater. – Rapid Commun.** **2**, 76–80 (2008).
58. *Structural and photocatalytic properties of iron and europium doped TiO_2 nanoparticles obtained under hydrothermal conditions*, L. Diamandescu, F. Vasiliu, D. Tarabasanu-Mihaila, M. Feder, A. M. Vlaicu, C.M. Teodorescu, D. Macovei, I. Enculescu, V. Parvulescu, E. Vasile, **Mater. Chem. Phys.** **112**, 146–153 (2008).
59. *Band ferromagnetism in systems of variable dimensionality*, C.M. Teodorescu*, G.A. Lungu, **J. Optoelectr. Adv. Mater.** **10**, 3058–3068 (2008).
60. *EXAFS investigation of iron local environment in metal-doped titania photocatalysts prepared by hydrothermal and high-energy ball milling routes*, F. Vasiliu, L. Diamandescu, D. Macovei, C.M. Teodorescu, R. Nicula, **J. Mater. Sci.: Mater. Electron.** **20S1**, S211–S215 (2009).
61. *Fe- and Eu-doped TiO_2 photocatalytical materials prepared by high-energy ball milling*, F. Vasiliu, L. Diamandescu, D. Macovei, C.M. Teodorescu, D. Tarabasanu-Mihaila, A.M. Vlaicu, V. Parvulescu, **Top. Catal.** **52**, 544–556 (2009).
62. *Photonic molecular effects associated to the sputtering process in a glow discharge optical emission spectrometer*, A. Surmeian, A. Groza, C. Diplasu, M. Ganciu, C.M. Teodorescu, A. Tempez, and P. Chapon, **Optoelectr. Adv. Mater. – Rapid Commun.** **3**, 40–43 (2009).
63. *Synthesis, structural characterization, and photocatalytic properties of iron-doped TiO_2 aerogels*, M. Popa, L. Diamandescu, F. Vasiliu, C.M. Teodorescu, V. Cosoveanu, M. Baia, M. Feder, L. Baia, V. Danciu, **J. Mater. Sci.** **44**, 358–364 (2009).

64. *Band ferromagnetism in systems of variable dimensionality II: the two-dimensional finite-temperature case*, G.A. Lungu and C.M. Teodorescu*, **J. Optoelectr. Adv. Mater.** **11**, 369–379 (2009).
65. *Photo-degradation activity of sputter-deposited nitrogen-doped titania thin films*, R. Apetrei, C. Catrinescu, D. Mardare, C.M. Teodorescu, D. Luca, **Thin Solid Films** **518**, 1040–1043 (2009).
66. *Preparation and characterization of iron oxides embedded in fullerite matrices*, G.A. Lungu, D. Macovei, C.M. Teodorescu*, **Digest J. Nanomater. Biostr.** **5**, 85–95 (2010).
67. *Mesoporous tin-triflate based catalysts for transesterification of sunflower oil*, M. Verziu, J. El Haskouri, D. Beltran, P. Amoros, D. Macovei, N.G. Gheorghe, C.M. Teodorescu, S.M. Coman, V. I. Parvulescu, **Top. Catal.** **53**, 763–772 (2010).
68. *Nanostructured thin layers of vanadium oxides doped with cobalt, prepared by pulsed laser ablation: chemistry, local atomic structure, morphology, and magnetism*, C.M. Teodorescu*, G. Socol, C. Negrila, D. Luca, D. Macovei, **J. Exper. Nanosci.** **5**, 509–526 (2010).
69. *Cobalt doped ZnO prepared by electrochemistry: chemistry, morphology, and magnetism*, I. Enculescu, E. Matei, V. Vasilache, C.M. Teodorescu*, **Phys. Stat. Solidi A** **207**, 2517–2522 (2010).
70. *Analysis of electron traps at the 4H-SiC/SiO₂ interface; influence by nitrogen implantation prior to wet oxidation*, I. Pintilie, C. M. Teodorescu, F. Moscatelli, R. Nipoti, A. Poggi, S. Solmi, L. S. Løvlie B. G. Svensson, **J. Appl. Phys.** **108**, 024503(1–9) (2010).
71. *Chemical Imaging of Catalyst Deactivation during Biomass Conversion Processes: The Etherification of Biomass-based Alcohols with Alkenes over H-Beta Zeolites*, A.N. Parvulescu, D. Mores, E. Stavitski, C.M. Teodorescu, P.C.A. Bruijninx, R.J.M. Klein Gebbink and B.M. Weckhuysen, **J. Amer. Chem. Soc.** **132**, 10429–10439 (2010).
72. *New analytical approximation of diffraction size broadened peak profile for spherical crystallites with lognormal distribution*, N.C. Popa, C.M. Teodorescu, S. Frunza, **J. Appl. Cryst.** **43**, 1027–1030 (2010).
73. *One-Pot Synthesis of Menthol Catalyzed by a Highly Diastereoselective Ionic Gold/MgF₂ Catalyst*, A. Negoi, S. Wuttke, E. Kemnitz, D. Macovei, C. M. Teodorescu, V.I. Parvulescu, S.M. Coman, **Angew. Chem. Intl. Ed.** **49**, 8134–8138 (2010).
74. *Novel Pd heterogeneous catalysts for cycloisomerisation of acetylenic carboxylic acids*, F. Neatu, L. Protesescu, M. Florea, V.I. Parvulescu, C.M. Teodorescu, N. Apostol, P.Y. Toullec, V. Michelet, **Green Chemistry** **12**, 2145–2149 (2010).
75. *Atomic structure and magnetic properties of cobalt doped ZnO thin films prepared by sol-gel method*, J. Neamtu, G. Georgescu, T. Malaeru, N.G. Gheorghe, R.M. Costescu, I. Jitaru, J. Ferré, D. Macovei, C.M. Teodorescu*, **Digest J. Nanomater. Biostr.** **5**, 873–885 (2010).
76. *Structural investigations of Ge nanoparticles embedded in an amorphous SiO₂ matrix*, I. Stavarache, A.M. Lepadatu, N.G. Gheorghe, R.M. Costescu, G. Stan, D. Marcov, A. Slav, G. Iordache, T.F. Stoica, V. Iancu, V.S. Teodorescu, C.M. Teodorescu, M.L. Ciurea, **J. Nanopart. Res.** **13**, 221–232 (2011).
77. *Biocatalytic microreactor incorporating HRP anchored on micro-/nano-lithographic patterns for flow oxidation of phenols*, M. Tudorache, D. Mahalu, C. Teodorescu, R. Stan, C. Bala, V.I. Parvulescu, **J. Molec. Catal. B: Enzymatic** **69**, 133–139 (2011).
78. *Enhanced contamination of Si(001) when analyzed with AES with respect to XPS*, N.G. Gheorghe, G.A. Lungu, R.M. Costescu, D.G. Popescu, C.M. Teodorescu*, **Optoelectr. Adv. Mater. – Rapid Commun.** **5**, 499–504 (2011).
79. *Telomerization of 1,3-Butadiene with Biomass-Derived Alcohols over a Heterogeneous Pd/TPPTS Catalyst Based on Layered Double Hydroxides*, A.N. Parvulescu, P.J.C. Hausoul, P.C.A. Bruijninx, S.T. Korhonen, C. Teodorescu, R.J.M.K. Gebbink, B.M. Weckhuysen, **ACS Catalysis** **1**, 526–536 (2011).
80. *Significantly different contamination of atomically clean Si(001) when investigated by XPS and AES*, N.G. Gheorghe, G.A. Lungu, R.M. Costescu, C.M. Teodorescu*, **Phys. Stat. Solidi B** **248**, 1919–1924 (2011).
81. *X-ray Absorption Fine Structure Investigations on Heat-Treated Cr-doped Titania Thin Films*, D. Mardare, V. Nica, V. Pohoata, D. Macovei, N. Gheorghe, D. Luca, C.M. Teodorescu, **Thin Solid Films** **520**, 1348–1352 (2011).
82. *Surface versus volume effects in luminescent ceria nanocrystals synthesized by oil – in- water microemulsion method*, C. Tiseanu, V.I. Parvulescu, M. Boutonnet, B. Cojocaru, P.A. Primus, C.M. Teodorescu, C. Solans, M. Sanchez Dominguez, **Phys. Chem. Chem. Phys.** **13**, 17135–17145 (2011).
83. *Atomic structure and reactivity of ferromagnetic Fe deposited on Si(001)*, N.G. Gheorghe, M.A. Husanu, G.A. Lungu, R.M. Costescu, D. Macovei, C.M. Teodorescu*, **J. Mater. Sci.** **47**, 1614–1620 (2012).
84. *Interface characterization and atomic intermixing processes in Be/W bilayers deposited on Si(001) substrates with Fe buffer layers*, V. Kuncser, P. Palade, G. Schinteie, S.G. Sandu, L. Trupina, G.A. Lungu,

- N.G. Gheorghe, C.M. Teodorescu, C. Porosnicu, I. Jepu, C.P. Lungu, G. Filoti, **J. Alloys Compds.** **512**, 199–206 (2012).
85. *Atomic structure and magnetism of PLD deposited $\text{TiO}_2\text{:Fe}$* , R.M. Costescu, G.A. Lungu, G. Socol, N.G. Gheorghe, D. Macovei, C.C. Negrilă, C. Logofatu, M.A. Husanu, D.G. Popescu, C.A. Tache, C.M. Teodorescu*, **Dig. J. Nanomater. Biostr.** **7**, 73–78 (2012).
86. *X-ray photoelectron spectroscopy of pulsed laser deposited $\text{Pb}(\text{Zr,Ti})\text{O}_{3-\delta}$* , C. Dragoi, N.G. Gheorghe, G.A. Lungu, L. Trupina, A.G. Ibanescu, C.M. Teodorescu*, **Phys. Stat. Solidi A** **209**, 1049–1052 (2012).
87. *Interface charge transfer in polypyrrole coated perovskite manganite magnetic nanoparticles*, O. Pana, M.L. Soran, C. Leostean, S. Macavei, E. Gautron, C.M. Teodorescu, N.G. Gheorghe, O. Chauvet, **J. Appl. Phys.** **111**, 044309(1–8) (2012).
88. *Reactivity, magnetism and local atomic structure in ferromagnetic Fe layers deposited on Si(001)*, N.G. Gheorghe, M.A. Husanu, G.A. Lungu, R.M. Costescu, D. Macovei, D.G. Popescu, C.M. Teodorescu*, **Digest J. Nanomater. Biostruct.** **7**, 373–384 (2012).
89. *Matrix assisted pulsed laser evaporation of $\text{Mn}_{12}(\text{Propionate})$ thin films*, M. Pervolaraki, F. Sima, G. Socol, C.M. Teodorescu, N.G. Gheorghe, M. Socol, I.N. Mihailescu, E.E. Moushi, A.J. Tasiopoulos, G.I. Athanasopoulos, Z. Viskadourakis, J. Giapintzakis, **Appl. Surf. Sci.** **258**, 9471–9474 (2012).
90. *Epitaxial ferromagnetic samarium and samarium silicide synthesized on Si(001)*, R.M. Costescu, N.G. Gheorghe, M.A. Husanu, G.A. Lungu, D. Macovei, I. Pintilie, D.G. Popescu, C.M. Teodorescu*, **J. Mater. Sci.** **47**, 7225–7234 (2012).
91. *The Meyer-Neldel rule in Fe-doped TiO_2 amorphous films*, D. Mardare, A. Yildiz, R. Apetrei, P. Rambu, D. Florea, N.G. Gheorghe, D. Macovei, C.M. Teodorescu, D. Luca, **J. Mater. Res.** **27**, 2271–2277 (2012).
92. *Heterogeneous amination of bromobenzene over titania-supported gold catalysts*, M. Ciobanu, B. Cojocaru, C. Teodorescu, F. Vasiliu, S.M. Coman, W. Leitner, V.I. Parvulescu, **J. Catal.** **296**, 43–54 (2012).
93. *Band ferromagnetism in systems with linear density of states*, G.A. Lungu, N.G. Apostol, M. Morariu, C.M. Teodorescu*, **Digest J. Nanomater. Biostruct.** **7**, 1615–1626 (2012).
94. *Manganese-based room temperature ferromagnetism in gallium arsenide*, V. Vasilache, N.G. Apostol, G.A. Lungu, D. Macovei, C.M. Teodorescu*, **Optoelect. Adv. Mater. – Rapid Commun.** **6**, 1054–1060 (2012).
95. *Structure, reactivity, electronic configuration and magnetism of samarium atomic layers deposited on Si(001) by molecular beam epitaxy*, N.G. Gheorghe, G.A. Lungu, M.A. Husanu, R.M. Costescu, D. Macovei, C.M. Teodorescu*, **Appl. Surf. Sci.** **267**, 106–111 (2013).
96. *Ferromagnetism and reactivity of Fe deposited on GaAs(001) by magnetron sputtering*, V. Vasilache, G.A. Lungu, C. Logofatu, R.V. Medianu, C.M. Teodorescu*, **Digest J. Nanomater. Biostruct.** **8**, 255–261 (2013).
97. *Room temperature ferromagnetic, anisotropic, germanium rich $\text{FeGe}(001)$ alloys*, G.A. Lungu, N.G. Apostol, L.E. Stoflea, R.M. Costescu, D.G. Popescu, C.M. Teodorescu*, **Materials** **6**, 612–625 (2013).
98. *Enhancing Oxidative Dehydrogenation Selectivity of Ceria-Based Catalysts with Phosphorus as Additive*, I.T. Trotus, C.M. Teodorescu, V.I. Parvulescu, I.C. Marcu, **ChemCatChem** **5**, 757–765 (2013).
99. *Charge transfer and band bending at $\text{Au/Pb}(\text{Zr,Ti})\text{O}_3$ interfaces investigated by photoelectron spectroscopy*, N.G. Apostol, L.E. Stoflea, G.A. Lungu, C. Chirila, L. Trupina, R.F. Negrea, C. Ghica, L. Pintilie, C.M. Teodorescu*, **Appl. Surf. Sci.** **273**, 415–425 (2013).
100. *Band bending in $\text{Au/Pb}(\text{Zr,Ti})\text{O}_3$ investigated by X-ray photoelectron spectroscopy: dependence on the initial state of the film*, N.G. Apostol, L.E. Stoflea, G.A. Lungu, L.C. Tanase, C. Chirila, L. Frunza, L. Pintilie, C.M. Teodorescu*, **Thin Solid Films** **545**, 13–21 (2013).
101. *A new green, ascorbic acid-assisted method for versatile synthesis of Au-graphene hybrids as efficient surface-enhanced Raman scattering platforms*, M. Iliut, C. Leordean, V. Canpean, C.M. Teodorescu, S. Astilean, **J. Mater. Chem. C** **1**, 4094–4104 (2013).
102. *X-ray photoelectron diffraction study of relaxation and rumpling of ferroelectric domains in $\text{BaTiO}_3(001)$* , A. Pancotti, J. Wang, P. Chen, L. Torteck, C.M. Teodorescu, E. Frantzeskakis, N. Barrett, **Phys. Rev. B** **87**, 184116(1–10) (2013).
103. *Band bending at free $\text{Pb}(\text{Zr,Ti})\text{O}_3$ surfaces analyzed by X-ray photoelectron spectroscopy*, N.G. Apostol, L.E. Stoflea, G.A. Lungu, C.A. Tache, D.G. Popescu, L. Pintilie, C.M. Teodorescu*, **Mater. Sci. Eng. B** **178**, 1317–1322 (2013).
104. *Riboflavin enhanced fluorescence of highly reduced graphene oxide*, M. Iliut, A.-M. Gabudean, C. Leordean, T. Simon, C.M. Teodorescu, S. Astilean, **Chem. Phys. Lett.** **526**, 127–131 (2013).

105. *Phenylboronic Acid-Modified Nanoparticles: Potential Antiviral Therapeutics*, M. Khanal, T. Vausselin, A. Barras, O. Bande, K. Turcheniuk, M. Benazza, V. Zaitzev, C.M. Teodorescu, R. Boukherroub, A. Siriwardena, J. Dubuisson, S. Szunerits, **ACS Appl. Mater. Interf.** **5**, 12488–12498 (2013).
106. *Satellites in Ce 3d X-ray photoelectron spectroscopy of ceria*, N. Răduțoiu, C.M. Teodorescu*, **Dig. J. Nanomater. Biostr.** **8**, 1535–1549 (2013).
107. *Room temperature ferromagnetic Mn:Ge(001)*, G.A. Lungu, L.E. Ștoflea, L.C. Tănase, I.C. Bucur, N. Răduțoiu, F. Vasiliu, I. Mercioniu, V. Kuncser, C.M. Teodorescu*, **Materials** **7**, 106–129 (2014).
108. *Gold nano-island arrays on silicon as surface-enhanced Raman scattering active substrate for organic molecule detection*, T. Ignat, M.-A. Husanu, R. Munoz, M. Kusko, M. Danila, C.M. Teodorescu, **Thin Solid Films** **550**, 354–360 (2014).
109. *Schottky barrier versus surface ferroelectric depolarization at Cu/Pb(Zr,Ti)O₃ interfaces*, L.E. Ștoflea, N.G. Apostol, C. Chirila, L. Trupina, R. Negrea, L. Pintilie, C.M. Teodorescu, **J. Mater. Sci.** **49**, 3337–3351 (2014).
110. *Polarization-control of the potential barrier at the electrode interfaces in epitaxial ferroelectric thin films*, I. Pintilie, C.M. Teodorescu, C. Ghica, C. Chirila, A.G. Boni, L. Hrib, I. Pasuk, R. Negrea, N.G. Apostol, L. Pintilie, **ACS Appl. Mater. Interf.** **6**, 2929–2939 (2014).
111. *Spin waves in systems with variable size, dimensionality, and different crystal structures: effects in the magnetisation dependence on temperature*, N. Răduțoiu, C.M. Teodorescu*, **Dig. J. Nanomater. Biostr.** **9**, 721–737 (2014).
112. *Selective adsorption of contaminants on Pb(Zr,Ti)O₃ surfaces shown by X-ray photoelectron spectroscopy*, L.E. Ștoflea, N.G. Apostol, L. Trupină, C.M. Teodorescu*, **J. Mater. Chem. A** **2**, 14386–14392 (2014).
113. *Spectro-microscopic photoemission evidence of charge uncompensated areas in Pb(Zr,Ti)O₃(001) layers*, D.G. Popescu, M.A. Hușanu, L. Trupină, L. Hrib, L. Pintilie, A. Barinov, S. Lizzit, P. Lacovig, C.M. Teodorescu*, **Phys. Chem. Chem. Phys.** **17**, 509–520 (2015).
114. *Image molecular dipoles in Surface Enhanced Raman Scattering*, C.M. Teodorescu*, **Phys. Chem. Chem. Phys.** **17**, 21302–21314 (2015).
115. *NbF₅–AlF₃ catalysts: design, synthesis, and application in lactic acid synthesis from cellulose*, S.M. Coman, M. Verziu, A. Tarsoaga, B. Jurca, C. Teodorescu, V. Kuncser, V.I. Parvulescu, G. Scholz, E. Kemnitz, **ACS Catalysis** **5**, 3013–3026 (2015).
116. *Photoelectron spectroscopy and spectro-microscopy of Pb(Zr,Ti)O₃ (111) thin layers: imaging ferroelectric domains with binding energy contrast*, M.A. Hușanu, D.G. Popescu, C.A. Tache, N.G. Apostol, A. Barinov, S. Lizzit, P. Lacovig, C.M. Teodorescu*, **Appl. Surf. Sci.** **352**, 73–81 (2015).
117. *Band bending at copper and gold interfaces with ferroelectric Pb(Zr,Ti)O₃ investigated by photoelectron spectroscopy*, N.G. Apostol, L.E. Ștoflea, L.C. Tănase, I.C. Bucur, C. Chirilă, R.F. Negrea, C.M. Teodorescu*, **Appl. Surf. Sci.** **354**, 459–468 (2015).
118. *Polarization induced self-doping in epitaxial Pb(Zr_{0.20}Ti_{0.80})O₃ thin films*, L. Pintilie, C. Ghica, C.M. Teodorescu, I. Pintilie, C. Chirila, I. Pasuk, L. Trupina, L. Hrib, A.G. Boni, N.G. Apostol, L.E. Abramiuc, R. Negrea, M. Stefan, D. Ghica, **Sci. Rep.** **5**, 14974(1–14) (2015).
119. *Positron production by gamma beam at ELI-NP*, N. Djourellov, C. Hugenschmidt, S. Balascuta, V. Leca, A. Oprisa, C. Piochacz, C. Teodorescu, C. A. Ur, **Rom. Rep. Phys.** **68**, S735–S797 (2016).
120. *Growth mechanisms and band bending studies in Cu and Pt on Ge(001) investigated by LEED and photoelectron spectroscopy*, L.C. Tănase, A.E. Bocîrneă, A.B. Șerban, L.E. Abramiuc, I.C. Bucur, G.A. Lungu, R.M. Costescu, C.M. Teodorescu, **Surf. Sci.** **653**, 97–106 (2016).
121. *Non-interacting, sp² hybridized carbon layers on ferroelectric lead zirco-titanate*, N.G. Apostol, G.A. Lungu, I.C. Bucur, C.A. Tache, L. Hrib, L. Pintilie, D. Macovei, C.M. Teodorescu*, **RSC Adv.** **6**, 67883–67887 (2016).
122. *C-N cross-coupling on supported copper catalysts: the effect of the support, oxidation state, base and solvent*, A. Tirsoaga, B. Cojocaru, C. Teodorescu, F. Vasiliu, N. Grecu, D. Ghica, V.I. Parvulescu, H. Garcia, **J. Catal.** **341**, 205–220 (2016).
123. *Magnetic nanoparticles for hepatocellular carcinoma diagnosis and therapy*, B.S. Ungureanu, A. Săftoiu, C.M. Teodorescu, **J. Gastrointest Liver Dis.** **25**, 375–383 (2016).
124. *Ferroelectric triggering of carbon monoxide adsorption on lead zirco-titanate (001) surfaces*, L.C. Tănase, N.G. Apostol, L.E. Abramiuc, C.A. Tache, L. Hrib, L. Trupină, L. Pintilie, C.M. Teodorescu*, **Sci. Rep.** **6**, 35301(1–18) (2016).

125. *The combined action of methanolysis and heterogeneous photocatalysis in the decomposition of chemical warfare agents*, N. Petrea, R. Petre, G. Epure, V. Șomoghi, L.C. Tănase, C.M. Teodorescu, Ș. Neațu, **Chem. Commun.** **52**, 12956–12959 (2016).
126. *Adamantane-based covalent–organic framework: stability, adsorption capability, and behaviour as catalyst and support for Pd and Au for the hydrogenation of nitrostyrene*, M.M. Trandafir, L. Pop, N.D. Hădade, M. Florea, F. Neațu, C.M. Teodorescu, B. Duraki, J.A. van Bokhoven, I. Grosu, V.I. Pârvulescu, H. Garcia, **Catal. Sci. Technol.** **6**, 8344–8354 (2016).
127. *Long range magnetic interaction in Mn_xGe_{1-x} : structural, spectro-microscopic and magnetic investigations*, L.C. Tănase, G.A. Lungu, L.E. Abramiuc, I.C. Bucur, N.G. Apostol, R.M. Costescu, C.A. Tache, D. Macovei, A. Barinov, C.M. Teodorescu, **J. Mater. Sci.** **52**, 3309–3320 (2017).
128. *Oriented Au nanoplatelets on graphene promote Suzuki-Miyaura coupling with higher efficiency and different reactivity pattern than supported palladium*, N. Candu, A. Dhakshinamoorthy, N. Apostol, C. Teodorescu, A. Corma, H. Garcia, V.I. Parvulescu, **J. Catal.** **352**, 59–66 (2017).
129. *High hexitols selectivity in cellulose hydrolytic hydrogenation over platinum (Pt) vs. ruthenium (Ru) catalysts supported on micro/mesoporous carbon*, P. Lazaridis, S.A. Karakoulia, C. Teodorescu, N. Apostol, D. Macovei, A. Panteli, A. Delimitis, S.M. Coman, V.I. Parvulescu, K.S. Triantafyllidis, **Appl. Catal. B: Environ.** **214**, 1–14 (2017).
130. *Polarization landscape effects in soft X-ray-induced surface chemical decomposition of lead zirconate, evidenced by photoelectron spectromicroscopy*, L.E. Abramiuc, L.C. Tănase, A. Barinov, N.G. Apostol, C. Chirilă, L. Trupină, L. Pintilie, C.M. Teodorescu*, **Nanoscale** **9**, 11055–11067 (2017).
131. *Structural and magnetic properties of Ni nanofilms on Ge(001) by molecular beam epitaxy*, A.E. Bocîrne, R.M. Costescu, I. Pasuk, G.A. Lungu, C.M. Teodorescu, **Appl. Surf. Sci.** **424**, 337–344 (2017).
132. *Band bending at magnetic Ni/Ge(001) interface investigated by X-ray photoelectron spectroscopy*, A.E. Bocîrne, L.C. Tănase, R.M. Costescu, N.G. Apostol, C.M. Teodorescu, **Appl. Surf. Sci.** **424**, 269–274 (2017).
133. *Aging phenomena and wettability control of plasma deposited carbon nanowall layers*, S. Vizireanu, M.D. Ionita, R.E. Ionita, S.D. Stoica, C.M. Teodorescu, M.A. Husanu, N.G. Apostol, M. Baibarac, D. Panaitescu, G. Dinescu, **Plasma Proc. Polymers** **14**, 1700023(1–11) (2017).
134. *Sustainable metal-free carbogels as oxygen reduction electrocatalysts*, K. Preuss, L.C. Tănase, C.M. Teodorescu, I. Abrahams, M.-M. Titirici, **J. Mater. Chem. A** **5**, 16336–16343 (2017).
135. *Oxygenophilic ionic liquids promote the oxygen reduction reaction in Pt-free carbon electrocatalysts*, M. Qiao, C. Tang, L.C. Tanase, C.M. Teodorescu, C.-M. Chen, Q. Zhang, M.-M. Titirici, **Mater. Horizons** **4**, 895–899 (2017).
136. *Low energy electron diffraction from ferroelectric surfaces. Dead layers and surface dipoles in clean $Pb(Zr,Ti)O_3(001)$* , C.M. Teodorescu*, L. Pintilie, N.G. Apostol, R.M. Costescu, G.A. Lungu, L. Hrib, L. Trupină, L.C. Tănase, I.C. Bucur, A.E. Bocîrne, **Phys. Rev. B** **96**, 115438(1–15) (2017).
137. *Hydrothermal route to (Fe, N) codoped titania photocatalysts with increased visible light activity*, L. Diamandescu, M. Feder, F. Vasiliu, L. C. Tanase, A. Sobetskii, I. Dumitrescu, C. M. Teodorescu, T. Popescu, **Industria Textila** **68**, 303–308 (2017).
138. *Triggering surface ferroelectric order in $Pb(Zr,Ti)O_3(001)$ by deposition of platinum*, I.C. Bucur, L.C. Tănase, L.E. Abramiuc, G.A. Lungu, C. Chirilă, L. Trupină, N.G. Apostol, R.M. Costescu, R.F. Negrea, L. Pintilie, C.M. Teodorescu*, **Appl. Surf. Sci.** **432**, 27–33 (2018).
139. *Polarization orientation in lead zirconate titanate (001) thin films driven by the interface with the substrate*, L.C. Tănase, L.E. Abramiuc, D.G. Popescu, A.-M. Trandafir, N.G. Apostol, I.C. Bucur, L. Hrib, L. Pintilie, I. Pasuk, L. Trupină, C.M. Teodorescu*, **Phys. Rev. Applied** **10**, 034020(1–19) (2018).
140. *From glucose direct to succinic acid: an optimized recyclable bi-functional $Ru@MNP-MWCNT$ catalyst*, I. Podolean, B. Cojocaru, H. Garcia, C. Teodorescu, V.I. Parvulescu, S.M. Coman, **Top. Catal.** **61**, 1866–1876 (2018).
141. *Room temperature ferromagnetism and its correlation to ferroelectricity of manganese embedded in lead zirconate-titanate*, I.C. Bucur, N.G. Apostol, L.E. Abramiuc, L.C. Tănase, C.A. Tache, G.A. Lungu, R.M. Costescu, C.F. Chirilă, L. Trupină, L. Pintilie, C.M. Teodorescu*, **Thin Solid Films** **669**, 440–449 (2019).
142. *Spirobifluorene-based porous organic polymers as efficient porous support for Pd and Pt for the selective hydrogenations*, M. Trandafir, L. Pop, N. D. Hădade, I. Hristea, C.M. Teodorescu, F. Krumeich, J. A. van Bokhoven, I. Grosu, V.I. Parvulescu, **ChemCatChem** **11**, 538–549 (2019).
143. *Efficient glucose dehydration to HMF onto Nb-BEA catalysts*, N. Candu, M. El Fergani, M. Verziu, B. Cojocaru, B. Jurca, N. Apostol, C. Teodorescu, V.I. Parvulescu, S.M. Coman, **Catal. Today** **325**, 109–116 (2019).

144. *Growth of Ag(111) on Si(111) with nearly flat band and abrupt interface*, A.E. Bocîrneă, R.M. Costescu, N.G. Apostol, C.M. Teodorescu*, **Appl. Surf. Sci.** **473**, 433–441 (2019).
145. *Impact on ferroelectricity and band alignment of gradually grown Au on BaTiO₃*, D.G. Popescu, M.A. Husanu, C. Chirila, L. Pintilie, C.M. Teodorescu, **Phys. Stat. Solidi – Rapid Res. Lett.** 1900077(1–5) (2019).
146. *The interplay of work function and polarization state at the Schottky barriers height for Cu/BaTiO₃ interface*, D.G. Popescu, M.A. Husanu, C. Chirila, L. Pintilie, C.M. Teodorescu, **Appl. Surf. Sci.** **502**, 144101(1–7) (2020).
147. *Resistance hysteresis in atomic layers of carbon synthesized on ferroelectric (001) lead zirconate titanate in ultrahigh vacuum*, N.G. Apostol, D. Lizzit, G.A. Lungu, P. Lacovig, C.F. Chirilă, L. Pintilie, S. Lizzit, C.M. Teodorescu*, **RSC Adv.** **10**, 1522–1534 (2020).
148. *Degenerated TiO₂ semiconductor modified with Ni and Zn as efficient photocatalysts for photocatalytic water splitting reaction*, F. Neațu, L.E. Abramiuc, M.M. Trandafir, R.F. Negrea, M. Florea, C.M. Teodorescu, Ș. Neațu, **ChemCatChem** **12**, 4642–4651 (2020).
149. *CO adsorption and oxidation at room temperature on graphene synthesized on atomically clean Pt(001)*, N.G. Apostol, I.C. Bucur, G.A. Lungu, C.A. Tache, C.M. Teodorescu*, **Catal. Today** **366**, 155–163 (2021).
150. *CO adsorption, reduction and oxidation on Pb(Zr,Ti)O₃(001) surfaces associated with negatively charged gold nanoparticles*, N.G. Apostol, M.A. Hușanu, D. Lizzit, I.A. Hristea, C.F. Chirilă, L. Trupină, C.M. Teodorescu*, **Catal. Today** **366**, 141–154 (2021).
151. *Ferroelectricity in thin films driven by charges accumulated at interfaces*, C.M. Teodorescu*, **Phys. Chem. Chem. Phys.** **23**, 4085–4093 (2021).
152. *Spin asymmetry originating from densities of states: Criterion for ferromagnetism, structures and magnetic properties of 3d metals from crystal field based DOSs*, C.M. Teodorescu*, **Res. Phys.** **25**, 104241 (1–10) (2021).
153. *Catalytic transformation of the marine polysaccharide ulvan into rare sugars, tartaric and succinic acids*, I. Podolean, S. M. Coman, C. Bucur, C. Teodorescu, S. Kikionis, E. Ioannou, V. Roussis, A. Primo, H. Garcia, V.I. Parvulescu, **Catal. Today** **383**, 345–357 (2022).
154. *Self-consistently derived sample permittivity in stabilization of ferroelectricity due to charge accumulated at interfaces*, C.M. Teodorescu*, **Phys. Chem. Chem. Phys.** **24**, 5419–5430 (2022).
155. *Re-entrant ferromagnetism at ultrahigh temperatures in epsilon-iron as possible origin of the geomagnetic field*, C.M. Teodorescu*, M.A. Hușanu, **Phys. Earth Planet. Inter.** **326**, 106856(1–11) (2022).
156. *Nanoscope correlations from curve fitting of photoelectron spectroscopy data cubes of lead zirconate titanate films*, L.E. Abramiuc, L.C. Tănase, A. Barinov, C.F. Chirilă, C.M. Teodorescu*, **Res. Phys.** **36**, 105436 (1–9) (2022).
157. *Ferroelectricity modulates polaronic coupling at multiferroic interfaces*, M.A. Husanu, D.G. Popescu, F. Bisti, L. Hrib, L. Filip, L. Pintilie, I. Pasuk, R. Negrea, L. Lev, T. Schmitt, A.S. Mishchenko, C.M. Teodorescu, V.N. Strocov, **Commun. Phys.** **5**, 209 (1–9) (2022).
158. *Catalytic hydrotreatment of humins wastes over bifunctional Pd-based zeolite catalysts*, M. El Fergani, N. Candu, I. Podolean, B. Cojocaru, A. Nicolaev, C. M. Teodorescu, M. Tudorache, V. I. Parvulescu, S. M. Coman, **Catalysts** **12**, 1202 (1–18) (2022).
159. *Experimental band structure of Pb(Zr,Ti)O₃: 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, L.M. Hrib, V. Stancu, L. Pintilie, T. Schmitt, C.M. Teodorescu, V.N. Strocov, **Adv. Sci.** **10**, 2205476 (1–13) (2023).
160. *Kittel's model for ferromagnetic domains, revised and completed, including the derivation of the magnetic hysteresis*, C.M. Teodorescu*, **Res. Phys.** **46**, 106287 (1–17) (2023).
161. *Surface charge dynamics on air-exposed ferroelectric Pb(Zr,Ti)O₃(001) thin films*, L.E. Abramiuc, L.C. Tănase, M.J. Prieto, L. de Souza Caldas, A. Tiwari, N.G. Apostol, M.A. Hușanu, C.F. Chirilă, T. Schmidt, L. Pintilie, C.M. Teodorescu, **Nanoscale** **15**, 13062–13075 (2023).
162. *Two dimensional landscape of ferromagnetic domains and the resulting magnetization curves*, C.M. Teodorescu*, **Res. Phys.** **54**, 107109 (2023).
163. *Molecular adsorption–desorption of carbon monoxide on ferroelectric BaTiO₃(001)*, A.-C. Iancu, N.G. Apostol, A. Nicolaev, L.E. Abramiuc, C.F. Chirilă, D.G. Popescu, C.M. Teodorescu*, **Mater. Adv.** **5**, 5709–5723 (2024).
164. *Reversible oxidation of ethylene on ferroelectric BaTiO₃(001): an X-ray photoelectron spectroscopy study*, A.-C. Iancu, A. Nicolaev, N.G. Apostol, L.E. Abramiuc, C.M. Teodorescu*, **Heliyon** **10**, e35072(1–14) (2024).
165. *Spin asymmetry of O 2p –related states in SrTiO₃(001)*, D.G. Popescu, A. Nicolaev, R.M. Costescu, L.E. Borcan, G.A. Lungu, C.A. Tache, M.A. Hușanu, C.M. Teodorescu*, **Phys. Scr.** **99**, 105925(1–11) (2024).

166. *Ferroelectric-enabled significant carbon dioxide molecular adsorption on BaTiO₃(001)*, A.-C. Iancu, G.A. Lungu, C.A. Tache, C.M. Teodorescu*, **Mater. Adv.** **5**, 8798–8811 (2024).
167. *Considerable spin asymmetry of deep valence states induced by partial neutralization of charged SrTiO₃(011) surfaces*, L.E. Borcan, A.-C. Iancu, D.G. Popescu, C.M. Teodorescu*, **J. Chem. Phys.** **162**, 054707(1–13) (2025).
168. *Surface spin asymmetry in Pt(001)–hex induced by electron accumulation*, L.E. Borcan, C.M. Teodorescu*, A.-C. Iancu, N.G. Apostol, A. Nicolaev, R.M. Costescu, M.A. Huşanu, D.G. Popescu, G.A. Lungu, M. Bianchi, **J. Phys.: Mater.** **8**, 035010(1–35) (2025).
169. *Surface spin asymmetry of O 2p and Ba 5p states in BaTiO₃(001)*, L.E. Borcan, A.-C. Iancu, N.G. Apostol, A. Nicolaev, C.M. Teodorescu*, **Mater. Adv.** **6**, 8907–8920 (2025).
170. *Polarization switching in ferroelectric films triggered by charge injection/extraction at interfaces*, G.A. Boni, C.F. Chirila, L. Hrib, L. Trupina, C.M. Teodorescu, A. Dimoulas, L. Pintilie, **Mater. Sci. Eng. B** **325**, 119130(1–13) (2026).

Papers submitted / in review / in work:

171. *Carbon dioxide interaction with BaTiO₃(001) decorated with gold nanoparticles*, A.-C. Iancu, D. G. Popescu, L.E. Borcan, G.A. Lungu, C.A. Tache, C.F. Chirilă, and C.M. Teodorescu*, submitted to **Res. Surf. Interf.** (2026).
172. *Ultrathin BN layers grown on sapphire by molecular beam epitaxy at low and high temperature*, E.-M. Pavelescu, C. Romaniţan, I. Mihalache, R. Gavrilă, M. Stoian, C. Obreja, S. Vulpe, A.-C. Iancu, C.M. Teodorescu, M. de la Mata, M. Herrera, H. Tornatzky, I. Gherăsoiu, S.I. Molina, and E. Luna, submitted to **J. Phys.: Mater.** (2026).
173. *Low coercive fields in soft magnetic metals explained by a single domain wall formation induced by the exchange interaction*, C.M. Teodorescu*, **New J. Phys.**, in preparation (2025).
174. *A simple theory for the size and shape of ferroelectric domains*, C.M. Teodorescu*, **Phys. Chem. Chem. Phys.**, in preparation (2025).

Book chapters:

1. N.G. Gheorghe, M.A. Husanu, G.A. Lungu, D. Macovei, V. Kuncser, R.M. Costescu, D.G. Popescu, C.M. Teodorescu, *Growth and characterization of ultrathin Fe magnetic layers deposited on atomically clean Si(001) by molecular beam epitaxy*, **Nanomaterials and nanostructures for various applications**, G. Brezeanu, H. Iovu, C. Cobianu, D. Dascălu (Eds.), Ed. Academiei Române, Bucharest, pp. 225–244 (2012), ISBN: 978-973-27-2169-8.
2. N.G. Apostol, C.M. Teodorescu, *Reactivity and magnetism at metal-semiconductor interfaces*, **From size effects to specific applications of nanostructures**, V. Kuncser, L. Miu (Eds.), Springer, Berlin, pp. 239–291 (2014), ISBN 978-3-662-44478-8.
3. G.A. Lungu, N.G. Apostol, C.M. Teodorescu, *Basic concepts in ferromagnetism of diluted magnetic semiconductors. The case of manganese embedded in Ge(001)*, **Nanomagnetism**, J.M. Gonzalez Estevez (Ed.), OneCentralPress, Manchester, pp. 74–110 (2014), ISBN: 978-1-910086-05-6.
4. L. Pintilie, I. Pintilie, C.M. Teodorescu, C. Ghica, L.M. Hrib, C. Chirila, L. Trupina, A.G. Boni, A. Iuga, R. Negrea, I. Pasuk, M. Botea, L.D. Filip, V. Kuncser, G. Schinteie, *Interfaces in epitaxial structures based on oxide ferroelectrics*, **Composite, Ceramic, Quasi-Crystals, Nanomaterials, High Temperature Protection Coatings**, F. Kongoli (Ed.), FLOGEN, Quebec/Wilmington, pp. 187–214 (2014), ISBN: 978-1-987820-11-9.
5. N.G. Apostol, C.M. Teodorescu, *Band bending at metal-semiconductor interfaces, ferroelectric surfaces and metal-ferroelectric interfaces investigated by photoelectron spectroscopy*, **Surface Science Characterization Techniques for Nanomaterials**, C. Kumar (Ed.), Springer, Berlin, pp. 405–461 (2015), ISBN: 978-3-662-44550-1.
6. D. Macovei, V. Dăscăleanu, C.M. Teodorescu, D. Luca, *Local ordering at the interface of the TiO₂-WO₃ bi-Layers*, **Nanostructures and Thin Films for Multifunctional Applications**, I. Tiginyanu, P. Topala, V. Ursaki (Eds.), Springer, Berlin, pp. 317–331 (2016), ISBN: 978-3-319-30197-6.
7. L. Pintilie, A.G. Boni, C. Chirila, L.M. Hrib, A. Iuga, L. Trupina, I. Pintilie, I. Pasuk, R. Negrea, C. Ghica, M. Botea, N. Apostol, C.M. Teodorescu, *Interfaces in Epitaxial Ferroelectric Layers/Multilayers and Their Effect on the Macroscopic Electrical Properties*, **Nanoscale Ferroelectrics and Multiferroics: Key**

PROJECTS:

Project	Position, <i>amount</i> (RON)	Amount, EUR	Period:
Grant of the Romanian Academy No. 317 / 2001-2002: <i>Structure, electronic properties, reactivity and magnetism of thin films of transition metals deposited by epitaxy on semiconductor substrates</i>	Project Director, 60 mil. ROL	2 152	2001-2002
CNCSIS Grant No. 1493 / 2002-2003: <i>Metal-semiconductor interfaces and ferromagnetic semiconductors</i>	Project Director, 110 mil. ROL	3 150	2002-2004
Matnantech No. 262(409) / 2004: <i>Source of nanoparticles produced by adiabatic expansion, size selected by a Wien filter</i>	Project Director, 1 750 mil. ROL (NIMP: 1 249,5 mil ROL)	44 122 (31503)	2004-2006
CERES No. 4-40 / 2004: <i>Materials and structures for spintronics based on associating magnetic metals with semiconductors</i>	Project Director, 1 300 mil. ROL (NIMP: 1 014 mil. ROL)	32 776 (25565)	2004-2006
CERES No. 4-67 / 2004: <i>Studies of doping effects on photocatalytic properties of TiO₂</i>	Project Director, 1 100 mil. ROL (NIMP: 550 mil. ROL)	27 734 (13867)	2004-2006
CERES No. 4-100 / 2004: <i>Studies of cluster condensation dynamics in plasma environment by time-of-flight spectrometry</i>	Project Director, 1 400 mil. ROL (NIMP: 700 mil. ROL)	35 297 (17649)	2004-2006
Matnantech No. 263(409) / 2004: <i>Nanostructures of manganite perovskites for applications as microwave attenuators controlled by magnetic field</i> (Project Director Dr. Ovidiu Pana, INCDTIM Cluj-Napoca)	NIMP Principal Investigator, 350 mil. ROL	8 824	2004-2006
CERES No. 4-93 / 2004: <i>Magnetic micro and nanocomposites on the type Mn perovskite – diamagnetic materials</i> (Project Director Dr. Ovidiu Pana, INCDTIM Cluj-Napoca)	NIMP Principal Investigator, 240 mil. ROL	6 051	2004-2006
CEEX No. CEx05-D11-32/2005: <i>Magnetism of interacting clusters: fundamental processes and applications</i>	Project Director, 1 500 000 RON (NIMP: 600 000 RON)	407 930 (163 172)	2005-2008
CEEX-RELANSIN No. 69/2005: <i>Microsystems with nanometer sized magnetic multilayers with giant magnetoresistance (GMR) and spin-dependent tunneling (TMR) for spintronics</i> (Project Director Dr. Jenica Neamtu, INCDIE ICPE-CA Bucuresti)	NIMP Principal Investigator, 150 000 RON	40 793	2005-2008
CEEX No. CEx06-D11-9/2006: <i>Development and optimization of new plasma sources for surface diagnostics by ionic ablation: studies and applications</i> (Project Director Dr. Agavni Surmeian, INFLPR Magurele)	NIMP Principal Investigator, 90 000 RON	26 614	2006-2008
CEEX-RELANSIN No. 229/2006: <i>Development of new plasma sources for efficient processing of</i>	NIMP Principal Investigator,	15 377	2006-2008

surfaces of metallic materials (Project Director Dr. Constantin Diplasu, INFLPR Magurele)	52 000 RON		
CEEX-Matnantech No. 59/2006: <i>Magnetic nanoparticles with core-shell structure covered with noble metals and conducting polymers – synthesis, characterization and applications</i> (Project Director Dr. Ovidiu Pana, INCDTIM Cluj-Napoca)	NIMP Principal Investigator, 150 000 RON	44 356	2006-2008
PN2-Partnerships No. 71-063: <i>Materials with induced magnetization, controlled by external parameters</i> (MAMAINCOPAE)	Project Director, 2 000 000 RON (NIMP: 900 000 RON)	553 986 (249 294)	2007-2010
PN2- Partnerships No. 71-119: <i>Ordered configurations of ferromagnetic and superparamagnetic nanoparticles</i> (Project Director Dr. Ovidiu Pana, INCDTIM Cluj-Napoca)	NIMP Principal Investigator, 300 000 RON	83 098	2007-2010
PN2-Capacities No. 73 CP/I/2007: <i>Development of molecular beam epitaxy techniques and of in situ characterization of surfaces and interfaces in ultrahigh vacuum (UHV)</i>	Project Director. 2 000 000 RON	553 986	2007-2009
PN2- Partnerships No. 12-134/2008: <i>Semiconductor nanodevices for applications in nanoelectronics and nanomedicine</i> (Project Director Dr. Jenica Neamtu, INC DIE ICPE-CA Bucuresti)	NIMP Principal Investigator, 500 000 RON	12 546	2008-2011
Contract PN2-Parteneriate No. 72-165/2008: <i>Transparent oxide semiconductor nanostructures with properties controlled by doping for applications in optoelectronics, spintronics and piezotronics</i> (Project Director Dr. Jenica Neamtu, INC DIE ICPE-CA Bucuresti)	NIMP Principal Investigator, 500 000 RON	12 546	2008-2011
POS-CCE SMIS 2665/2009: Euro-Regional Center for Studies of Advanced Materials, Surfaces and Interfaces (CEUREMAVSU)	Project Director, 43 004 595 RON	10 170 898	2009-2011
PCCE ID_76/2010: Surface and interface science: physics, chemistry, biology, applications	Project Director, 7 000 000 RON (NIMP: 1 750 000 RON)	1 633 682 (408 420)	2010-2013
IFA-CEA cooperation project No. C1-08/2010: <i>Ferroelectric and diluted magnetic semiconductor based multiferroic heterostructures for energy applications</i> (MULTIFERRODMS)	Project Director, 600 000 RON	140 030	2010-2013
PCCE PN-II-ID-PCCE-2011-2-0006, <i>Interface effects in charge transport in ferroelectric / multiferroic heterostructures</i> (Project Director Dr. Lucian Pintilie, NIMP Măgurele)	NIMP – T2 team Principal Investigator 1 250 000 RON	282 250	2012-2015
PN2- Partnerships No. 152/2012: <i>Evaporation cells, operating at high temperatures, high stability and low cost, for molecular beam epitaxy</i> (HITEVACE)	Project Director, 3 000 000 RON (NIMP: 1 650 000 RON)	677 400 (372 570)	2012-2015
PN2- Partnerships No. 128/2012: <i>Hyperthermic magnetic nanoparticle ablation of liver and pancreatic tumors</i> (NANO-ABLATION)	NIMP Principal Investigator, 300 000 RON	67 740	2012-2015

ANR Blanc International (RO-F) 2013: <i>Chemical switching of surface ferroelectric topology</i> (CHEM-SWITCH)	Project Director, 250 000 EUR	250 000	2013-2015
R&D Project, <i>Positron related experiments. Experiments with spin-polarized positrons</i> , Contract no. 36/24.03.201 with ELI-NP – Institutul Național de Cercetare-Dezvoltare pentru Fizică și Inginerie Nucleară “Horia Hulubei”	Project Director, 64 200 EUR	64 200	2015
POS-CCE SMIS 49185 <i>Center for Research, Innovation and New Technologies</i> (RITecC)	Deputee Director, 42 984 228 RON	9 674 944	2014-2015
ELI-RO Project No. 18-ELI <i>Surface Science with Positrons: Optimization of solid Ne Moderators and First PAES Experiments</i> (SuSciPo)	Project Director, 1 200 400 RON	278 818	2016-2019
POC – G: <i>Smart multifunctional materials for high technology applications</i> (MATI2IT)	Deputee Director, 15 950 000 RON	3 544 444	2016-2021
POC – E: <i>Nanostructured electrochemical biosensors for medical diagnosis and screening of compounds with pharmaceutical properties: development, surface characterization and applications</i> (NANOBIOSURF)	Deputee Director, 9 000 000 RON	2 000 000	2016-2020
PCCDI PN-III-P1-1.2-PCCDI- 2017-0152 Technological paradigms in the synthesis and characterization of systems with variable dimensionality (VARDIMTECH)	Project Director, 5 287 500 RON (NIMP 2 463 500 RON)	1 134 657 (528 648)	2018-2020
PNIII-1.2PDI-PFC-C1-2018 ID_339: <i>Institutional Development for Excellence in Research in Advanced Materials</i> (EXMAV)	Deputee Director, 6 900 000 RON	1 483 871	2018-2020
PN-III-P4-ID-PCCF2016-0047: <i>Control of electronic properties in heterostructures based on ferroelectric perovskites: from theory to applications</i> (CEPROFER) (Project Director Dr. Lucian Pintilie, NIMP Măgurele)	Team 1 Principal Investigator, 2 000 000 RON	430 107	2018-2022
PN-IV-PRO-CoEx-2024-1, Contract No. 5CoEx/2026: <i>Chemo-catalytic paradigms in valorification of multiphase wastes – Center of Excellence for circular chemistry and economy</i> (ChemBioCatCirEcon) (Project Director Prof. Vasile Pârvulescu, University of Bucharest)	NIMP Team Leader, 12 885 000 RON	2 531 434	2026-2030

Signature: