Cristian-Mihail TEODORESCU
Born in 1966, married, four children
Hirsch: 35 (Google Scholar), 31 (Web of Science)
Head of the Surfaces and Interfaces Group
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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 atmoms to solids. X-ray photoabsorption of metal and insulating clusters*, advisor Dr. Jean-Marc Esteva, 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-Magurele 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 (8 PhD students, 3 graduated).
2018 – to date: 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 7.5 M€ (2004–2019), including a PCCE project (2010–2013) of about 1.6 M€ and a PCCDI project (2018–2020) of about 1.1 M€.
• Director of an infrastructure project (POS-CCE SMIS 2665, 2009–2011) of about 10.5 M€. Setup of four surface science laboratories. Deputee Director of a second infrastructure project (2014–2015) of similar worth.
• Author and co-author of 160 papers in ISI journals, about 40 papers published in journals with high impact factor (over 5), about 2900 citations, over 2100 citations without self-citations, h-index 31 (Web of Science) or 35 (Google Scholar), 7 book chapters.
• Editorial Boards: Open Physics (De Gruyter), Physics (MDPI), Journal of Optoelectronics and Advanced Materials, Optoelectronics and Advanced Materials – Rapid Communications, Digest Journal of Nanomaterials and Biostructures.
• 1 national (RO) patent awarded, 6 patent applications in various stages of 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 absrption 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.

OTHERS:

Science fiction writer, 3 books published (2008, 2010 and 2014), one book in press, 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. Esteva, 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. Esteva, R.C. Karnatak, A. El Afif, **Nucl. Instrum. Meth. Phys. Res. A 345**, 141–147 (1994).
5. *K edge absorption spectrs 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. Esteva, R.C. Karnatak, M. Womes, **Rom. Rep. Phys. 46**, 823–833 (1994).
7. *Thermal induced evolution of chlorine-containing precursors in impregnated Pd / Al_2O_3 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. Esteva, 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. Esteva, 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. Esteva, 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. Theodorescu, **Eur. Phys. J. B 15**, 41–50 (2000).
26. *Crystal momentum dependence of the correlation satellite intensity in the 3p → 3d resonant photoemission of $Bi_2Sr_2CaCu_2O_{2+\delta}$* , 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. Poinsot, 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. Poinsot, 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. Poinsot, 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/SiO_2 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. Bruijnincx, 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).
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161. *Surface charge dynamics on air-exposed ferroelectric Pb(Zr,Ti)O_3(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**, *revision in progress* (2022).
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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 TiO_2-WO_3 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 Processing and Characterization Issues, and Nanoscale Effects**, M. Algueró, J.M. Gregg, L. Mitoseriu (Eds.), John Wiley & Sons, Hoboken, pp. 645–676 (2016), ISBN: 978-1-118-93575-0.

PROJECTS:

Project	**Position, *amount* (RON)**	**Amount, EUR**	**Period:**
Grant of the Romanian Academy No. 317 / 2001-2002: *Structure, electronic properties, reactivity and magnetism of thin films of transition metals deposited by epitaxy on semiconductor substrates*	Project Director, *60 mil. ROL*	2 152	2001-2002
CNCSIS Grant No. 1493 / 2002-2003: *Metal-semiconductor interfaces and ferromagnetic semiconductors*	Project Director, *110 mil. ROL*	3 150	2002-2004
Matnantech No. 262(409) / 2004: *Source of nanoparticles produced by adiabatic expansion, size selected by a Wien filter*	Project Director, *1 750 mil. ROL (NIMP: 1 249,5 mil ROL)*	44 122 (31503)	2004-2006
CERES No. 4-40 / 2004: *Materials and structures for spintronics based on associating magnetic metals with semiconductors*	Project Director, *1 300 mil. ROL (NIMP: 1 014 mil. ROL)*	32 776 (25565)	2004-2006
CERES No. 4-67 / 2004: *Studies of doping effects on photocatalytic properties of TiO_2*	Project Director, *1 100 mil. ROL (NIMP: 550 mil. ROL)*	27 734 (13867)	2004-2006
CERES No. 4-100 / 2004: *Studies of cluster condensation dynamics in plasma environment by time-of-flight spectrometry*	Project Director, *1 400 mil. ROL (NIMP: 700 mil. ROL)*	35 297 (17649)	2004-2006
Matnantech No. 263(409) / 2004: *Nanostructures of manganite perovskites for applications as microwave attenuators controlled by magnetic field* (Project Director Dr. Ovidiu Pana, INCDTIM Cluj-Napoca)	NIMP Principal Investigator, *350 mil. ROL*	8 824	2004-2006
CERES No. 4-93 / 2004: *Magnetic micro and nanocomposites on the type Mn perovskite – diamagnetic materials* (Project Director Dr. Ovidiu Pana, INCDTIM Cluj-Napoca)	NIMP Principal Investigator, *240 mil. ROL*	6 051	2004-2006
CEEX No. CEx05-D11-32/2005: *Magnetism of interacting clusters: fundamental processes and applications*	Project Director, *1 500 000 RON (NIMP: 600 000 RON)*	407 930 (163 172)	2005-2008
CEEX-RELANSIN No. 69/2005*: Microsystems with nanometer sized magnetic multilayers with giant magnetoresistance (GMR) and spin-dependent tunneling (TMR) for spintronics* (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: *Development and optimization of new plasma sources for surface diagnostics by ionic ablation: studies and applications* (Project Director Dr. Agavni Surmeian, INFLPR Magurele)	NIMP Principal Investigator, *90 000 RON*	26 614	2006-2008
CEEX-RELANSIN No. 229/2006: *Development of new plasma sources for efficient processing of surfaces of metallic materials* (Project Director Dr. Constantin Diplasu, INFLPR Magurele)	NIMP Principal Investigator, *52 000 RON*	15 377	2006-2008
CEEX-Matnantech No. 59/2006: *Magnetic*	NIMP Principal	44 356	2006-

nanoparticles with core-shell structure covered with noble metals and conducting polymers – synthesis, characterization and applications (Project Director Dr. Ovidiu Pana, INCDTIM Cluj-Napoca)	Investigator, *150 000 RON*		2008
PN2-Partnerships No. 71-063: *Materials with induced magnetization, controlled by external parameters* (MAMAINCOPAE)	Project Director, *2 000 000 RON (NIMP: 900 000 RON)*	553 986 (249 294)	2007-2010
PN2- Partnerships No. 71-119: *Ordered configurations of ferromagnetic and superparamagnetic nanoparticles* (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: *Development of molecular beam epitaxy techniques and of in situ characterization of surfaces and interfaces in ultrahigh vacuum* (UHV)	Project Director. *2 000 000 RON*	553 986	2007-2009
PN2- Partnerships No. 12-134/2008: *Semiconductor nanodevices for applications in nanoelectronics and nanomedicine* (Project Director Dr. Jenica Neamtu, INCDIE ICPE-CA Bucuresti)	NIMP Principal Investigator, *500 000 RON*	12 546	2008-2011
Contract PN2-Parteneriate No. 72-165/2008: *Transparent oxide semiconductor nanostructures with properties controlled by doping for applications in optoelectronics, spintronics and piezotronics* (Project Director Dr. Jenica Neamtu, INCDIE 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: *Ferroelectric and diluted magnetic semiconductor based multiferroic heterostructures for energy applications* (MULTIFERRODMS)	Project Director, *600 000 RON*	140 030	2010-2013
PCCE PN-II-ID-PCCE-2011-2-0006, *Interface effects in charge transport in ferroelectric / multiferroic heterostructures* (Project Director Dr. Lucian Pintilie, INCDFM)	NIMP – T2 team Principal Investigator *1 250 000 RON*	282 250	2012-2015
PN2- Partnerships No. 152/2012: *Evaporation cells, operating at high temperatures, high stability and low cost, for molecular beam epitaxy* (HITEVACE)	Project Director, *3 000 000 RON (NIMP: 1 650 000 RON)*	677 400 (372 570)	2012-2015
PN2- Partnerships No. 128/2012: *Hyperthermic magnetic nanoparticle ablation of liver and pancreatic tumors* (NANO-ABLATION)	NIMP Principal Investigator, *300 000 RON*	67 740	2012-2015
ANR Blanc International (RO-F) 2013: *Chemical switching of surface ferroelectric topology* (CHEM-SWITCH)	Project Director, *250 000 EUR*	250 000	2013-2015
R&D Project, *Positron related experiments.*	Project Director,	64 200	2015

Experiments with spin-polarized positrons, Contract no. 36/24.03.201 with ELI-NP – Institutul Naţional de Cercetare-Dezvoltare pentru Fizică şi Inginerie Nucleară "Horia Hulubei"	*64 200 EUR*		
POS-CCE SMIS 49185 *Center for Research, Innovation and New Technologies* (RITecC)	Deputee Director, *42 984 228 RON*	9 674 944	2014-2015
ELI-RO Project No. 18-ELI *Surface Science with Positrons: Optimization of solid Ne Moderators and First PAES Experiments* (SuSciPo)	Project Director, *1 200 400 RON*	278 818	2016-2019
POC - G: *Smart multifunctional materials for high technology applications* (MATI2IT)	Deputee Director, *15 950 000 RON*	3 544 444	2016-2021
POC - E: *Nanostructured electrochemical biosensors for medical diagnosis and screening of compounds with pharmaceutical properties: development, surface characterization and applications* (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: *Institutional Development for Excellence in Research in Advanced Materials* (EXMAV)	Deputee Director, *6 900 000 RON*	1 483 871	2018-2020
PN-III-P4-ID-PCCF2016-0047: *Control of electronic properties in heterostructures based on ferroelectric perovskites: from theory to applications* (CEPROFER)	Team 1 Principal Investigator, *2 000 000 RON*	430 107	2018-2022

Signature: