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LIST OF PAPERS

➤ *PhD Thesis*

Title: COMPORTAREA MAGNETICĂ A SISTEMELOR DE NANOPARTICULE FERIMAGNETICE DISPERSE. APLICAȚII LA GENERAREA OSCILAȚIILOR DE RADIOFRECVENTĂ DE PUTERE (West University of Timisoara, 2003).

- with highest honour “**SUMMA CUM LAUDE**”;

➤ *Published books/chapters/courses*

(with referees, in recognized Publishing Houses)

1. Title: ***Nanoparticles size effect on some magnetic properties***,

Chapter in: ***Handbook of Nanoparticles***;

SPRINGER, 2015, 41 pages;

Author: **C. Caizer**

2. Title: ***Bioelectromagnetism. Lucrări de laborator***

EUROBIT, Timișoara, 2013, 168 pages; ISBN: 978-973-132-080-9

Author: **C. Caizer**

3. Title: ***Fizică experimentală***

EUROBIT, Timișoara, 2012, 262 pages; ISBN: 978-973-132-016-8

Author: **C. Caizer**

4. Title: ***Nano- biomagnetism***

WEST UNIVERSITY, Timișoara, 2010, 286 pages; ISBN: 978-973-125-337-4

Author: **C. Caizer**

5. Title: ***Impulsuri electrice. Aplicații în circuite electrice, dispozitive electronice și magnetism tehnic***

MIRTON, Timișoara, 2007, 268 pages; ISBN: 978-973-52-0064-0

Author: **C. Caizer**

6. Title: ***Sisteme de nanoparticule ferimagnetice disperse. Comportare magnetică***

WEST UNIVERSITY, Timișoara, 2004, 166 pages; ISBN: 973-8433-73-8

Author: **C. Caizer**

7. Title: ***Nano- fluide magnetice***

EUROBIT, Timișoara, 2004, 200 pages; ISBN: 973-620-186-4;

Author: **C. Caizer**

8. Title: ***Electricitate și magnetism. Lucrări experimentale***

EUROBIT, Timișoara, 2004, 212 pages; ISBN: 973-8181-38-0;

Authors: **C. Caizer, I. Hrianca**

➤ *Scientific papers published in extenso
in ISI-ranked magazines*

- [1] **C. Caizer**, *Computational study on superparamagnetic hyperthermia with biocompatible SPIONs to destroy the cancer cells*, **Journal of Physics** (IOP) (J. Phys.: conf. ser. 521 (2014) 012015).
- [2] M. Stoia, **C. Caizer**, M. Ștefănescu, P. Barvinschi, L. Barbu-Tudoran, *Structure, morphology and magnetic properties of Ni,Zn ferrite/ silica nanocomposites with different compositions*, **Journal of Sol-Gel Science and Technology** (J. Sol-Gel Sci. Techn., 58 (2011) 126); ISI: 1,632.
- [3] M. Ștefănescu, M. Stoia, **C. Caizer**, T. Dippong, P. Barvinschi, *Preparation of $\text{Co}_x\text{Fe}_{3-x}\text{O}_4$ nanoparticles by thermal decomposition of some organo-metallic precursors*, **Journal of Thermal Analysis and Calorimetry** (J. Therm. Anal. Calorim., 97 (2009) 245); ISI: 1,604.
- [4] M. Ștefănescu, M. Stoia, **C. Caizer**, O. Ștefănescu, *Preparation of $x(\text{Ni}_{0.65}\text{Zn}_{0.35}\text{Fe}_2\text{O}_4)/(1-x)\text{SiO}_2$ nanocomposite powders by a modified sol-gel method*, **Materials Chemistry and Physics** (Mater. Chem. Phys., 113 (2009) 342 – 348); ISI: 2,234.
- [5] **C. Caizer**, *Magnetic properties of the novel nanocomposite $(\text{Zn}_{0.15}\text{Ni}_{0.85}\text{Fe}_2\text{O}_4)_{0.15}/(\text{SiO}_2)_{0.85}$ at room temperature*, **Journal of Magnetism and Magnetic Materials** (J. Magn. Magn. Mater., 320 (2008) 1056 – 1062); ISI: 1,780.
- [6] M. Stoia, **C. Caizer**, M. Ștefănescu, P. Barvinschi, I. Julean, *Obtaining of $\text{Ni}_{0.65}\text{Zn}_{0.35}\text{Fe}_2\text{O}_4/\text{SiO}_2$ nanocomposites by thermal decomposition of complex compounds embedded in silica matrix*, **Journal of Thermal Analysis and Calorimetry** (J. Therm. Anal. Calorim., 88 (2007) 193 – 200); ISI: 1,604.
- [7] **C. Caizer**, V. Tura, *Magnetic relaxation/stability of Co ferrite nanoparticles embedded in amorphous silica particles*, **Journal of Magnetism and Magnetic Materials** (J. Magn. Magn. Mater., 301 (2006) 513 – 520); ISI: 1,780.
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synthesis method in the liquid phase, **Acta Materialia** (Acta Mater., 54 (2006) 1249 – 1256); ISI: 3,755.

- [9] **C. Caizer**, *The effect of external magnetic field on the thermal relaxation of magnetization*, **Journal of Physics: Condensed Matter** (J. Phys.: Condens. Matter 17 (2005) 2019 – 2034); ISI: 2,546.
- [10] M. Ștefănescu, **C. Caizer**, M. Stoia, O. Ștefănescu, *Ni_xZn/SiO₂ ferrite nanocomposites prepared by an improved sol-gel method and their characterisation*, **Journal of Optoelectronics and Advanced Materials** (J. Optoelectron. Adv. M., 7 (2005) 607 – 614; ISI: 0,457.
- [11] **C. Caizer**, *Deviation from Bloch law in the case of surfacted nanoparticles*, **Applied Physics A** (Appl. Phys. A, Published first online: (2004)); ISI: 1,630.
- [12] **C. Caizer**, *T² law for magnetite-based ferrofluids*, **Journal of Physics: Condensed Matter** (J. Phys.: Condens. Matter 15 (2003) 765 – 776); ISI: 2,546.
- [13] **C. Caizer**, M. Popovici, C. Savii, *Spherical (Zn_δNi_{1-δ}Fe₂O₄)_γ nanoparticles in an amorphous (SiO₂)_{1-γ} matrix, prepared with the sol-gel method*, **Acta Materialia** (Acta. Mater., 51 (2003) 3607 – 3616); ISI: 3,755.
- [14] **C. Caizer**, *Saturation magnetization of γ-Fe₂O₃ nanoparticles dispersed in a silica matrix*, **Physica B** (Physica B, 327 (2003) 27 – 33); ISI : 1,063.
- [15] **C. Caizer**, *Structural and magnetic properties of nanocrystalline Zn_{0.65}Ni_{0.35}Fe₂O₄ powder obtained from heteropolymeric complex combination*, **Materials Science & Engineering B – Solid State Materials for Advanced Technology** (Mat. Sci. Eng. B, 100 (2003) 63; ISI: 1,518.
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- [19] **C. Caizer**, C. Savii, M. Popovici, *Magnetic behaviour of iron oxide nanoparticles dispersed in a silica matrix*, **Materials Science & Engineering B – Solid State Materials for Advanced Technology** (Mat. Sci. Eng. B: Solid, 97 (2003) 129 – 134); ISI: 1,518.
- [20] M. Popovici, C. Savii, D. Niznansky, J. Subrt, J. Bohacek, **C. Caizer**, C. Enache, C. Ionescu, *Nanocrystalline Ni-Zn ferrites prepared by sol-gel method*, **Journal of Optoelectronics and Advanced Materials** (J. Optoelectron. Adv. M., 5 (2003) 251 – 256); ISI: 0,457.
- [21] I. Hrianca, **C. Caizer**, Z. Schlett, *Dynamic magnetic behavior of Fe_3O_4 colloidal nanoparticles*, **Journal of Applied Physics** (J. Appl. Phys., 92 (2002) 2125 – 2132); ISI: 3,844.
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- [23] **C. Caizer**, *Thermal dependence of the saturation magnetisation of $Mn_{0.6}Fe_{0.4}Fe_2O_4$ nanoparticles in a ferrofluid*, **Solid State Communication** (Solid Satare Commun., 124 (2002) 52; ISI: 1,649.
- [24] C. Savii, M. Popovici, C. Enache, J. Subrt, D. Niznansky, S. Bakardzieva, **C. Caizer**, I. Hrianca, *$Fe_2O_3 - SiO_2$ composites obtained by sol-gel synthesis*, **Solid State Ionics** (Solid Sate Ionics, 151 (2002) 219 – 227); ISI: 2,646.
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- [30] I. Hrianca, **C. Caizer**, C. Savii, M. Popovici, *Magnetic and structural properties of $\gamma\text{-Fe}_2\text{O}_3$ nanoparticles dispersed in a silica matrix*, **Journal of Optoelectronics and Advanced Materials** (J. Optoelectron. Adv. M., 2 (2000) 634 – 638); ISI: 0,563.

➤ *Other papers and scientific contributions*

▪ *Scientific papers published in the Proceedings and University Annals (excerpts)*

- [31] M. Stoia, M. Ștefănescu, **C. Caizer**, O. Ștefănescu, *Synthesis of magnetic nanocomposites $x\%(\text{Ni}0.75\text{Zn}0.25\text{Fe}2\text{O}4)/(100-x)\%\text{SiO}_2$ by a sol-gel method*, **Annals of West University of Timisoara, Series of Chemistry** (Ann. West Univ. Timișoara, Chem., 16(4) (2007) 87-94).
- [32] **C. Caizer**, M. Ștefănescu, M. Stoia, P. Barvinschi, O. Ștefănescu, *Ultrafine magnetic particles embedded in a silica matrix obtained by a new chemical route of synthesis*, **Analele Universității din Timișoara, Seria Fizică** (Anal. Univ. Timișoara, Fizică, 45 (2004) 135-138).
- [33] **C. Caizer**, M. Ștefănescu, P. Barvinschi, *Unusual magnetic behaviour of nickel-zinc ferrite nanoparticles in a silica matrix, obtained through the hybrid sol-gel method*, **Annals of University of Petroșani, Physics** (Ann. Univ. Petrosani, Phys.6 (2004) 111 – 118).
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- [35] **C. Caizer**, *PC Fourier analysis in order to establish the parameters of load adaptation to a RF impulse generator*, **Analele Universității din Timișoara, Seria Științe Fizice** (Anal. Univ. Timișoara, St. Fizice, 43 (2002) 12 - 19).

- [36] C. Caizer, *Magnetic behavior of $(Ni_{1-x}Zn_xFe_2O_4)_y/(SiO_2)_{1-y}$* , **Proceedings 2002: Sesiunea Anuală de Comunicări Științifice a Facultății de Fizică**, 29-30 Noiembrie, Timișoara, 2002, pp. 43 - 48.
- [37] C. Caizer, M. Popovici, C. Savii, *Method for obtaining spherical nanoparticles of nickel-zinc ferrite in an silica matrix and their magnetic characterization*, **Proceedings 2002: Sesiunea Anuală de Comunicări Științifice a Facultății de Fizică**, 29-30 Noiembrie, Timișoara, 2002, pp. 36 – 42.
- [38] I. Hrianca, M. Cristea, M. Boldan, A. Zamfir, C. Caizer, *Some aspects of the magnetic behaviour of LiZn ferrite*, **Buletinul Științific al Universității “Politehnica” Timișoara (Bull. St. Univ. “Politehnica” Timișoara, Tom 47 (61), 2 (2002) 91).**
- [39] C. Caizer, I. Hrianca, M. Ștefănescu, D. Băltăteanu, *Magnetic properties of $Ni_{0.36}Zn_{0.64}Fe_2O_4$ ferrite nanoparticles*, **Analele Universității din Timișoara, Seria Științe Fizice (Anal. Univ. Timișoara, St. Fizice, XLII (2001) 19 – 25).**
- [40] M. Ștefănescu, C. Caizer, C. Muntean, M. Stoia, M. Bîrzescu, *Studies on the formation of the spinel phase $Ni_{(1-x)}Zn_xFe_2O_4$ and its magnetic properties*, **Chemical Bulletin of “Politehnica” University of Timișoara (Chem. Bull. "Politehnica" Univ. Timișoara, 45 (59) (2000) 30 – 36).**
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- [43] I. Hrianca, C. Caizer, C. Savii, M. Popovici, *Proprietăți magnetice ale nanoparticulelor de $(Zn_xNi_{1-x}Fe_2O_4)_y$ disperse în matrice amorfă de $(SiO_2)_{1-y}$* , **Analele Universității din Oradea, Fizica – B (Anal. Univ. Oradea, Fizica B, X (2000) 153 – 161).**
- [44] M. Ștefănescu, C. Caizer, C. Muntean, I. Hrianca, *Studiul prin analiză termică diferențială și difractometrie X al feritei de Ni-Zn obținută din complecși de tip glioxilat*, **Analele Universității din Oradea, Fizica – B (Anal. Univ. Oradea, Fizica B, X (2000) 71 – 80).**

- [45] M. Popovici, C. Savii, **C. Caizer**, C. Enache, I. Hrianca, *Synthesis and magnetic properties of ultrafine $Zn_xNi_{1-x}Fe_2O_4$ powder dispersed in silica matrix*, **Annals of West University of Timisoara, Series of Chemistry** (Ann. West Univ. Timișoara, Chemistry, 9 (2) (2000) 209 – 218).
- [46] **C. Caizer**, I. Hrianca, C. Savii. M. Popovici, *$Fe_2O_3 - SiO_2$ magnetic nanocomposites synthesized by sol-gel method*, **Proceedings: The 4th International Symposium Interdisciplinary Zonal Research**, 16-17 Nov., Timișoara, 2000. CD-ROM (ISBN: 99425-8-X), pp. 1225 - 1228.
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➤ *Scientific Conferences*

- *International Conferences (or with international participation)*
 - *excerpts* -

1. **C. Caizer**, *3D/2D computational study on magnetic relaxation/stability in linear magnetic field of aligned nanoparticles*, **20th International Conference on Magnetism (ICM2015)**, July 5-10, Barcelona, Spain, 2015. Contribution: Topic 4, Magnetism of nanoscale systems (Magnetic nanoparticles), accepted.

2. **C. Caizer**, *3D study on SAR in $Co_{\delta}Fe_{3-\delta}O_4$ ferrite nanoparticles*, **4th International Conference on Superconductivity and Magnetism (ICSM-2014)**, 27 April – 2 May, Antalya, 2014. Contribution: Magnetism of Nanoparticles, Nanowires and Nanostructures I, p. 940.
3. **C. Caizer**, *SPMHT with biocompatible SPIONs for destroy the cancer cells*, **The 8th International Conference on Fine Particle Magnetism (ICFPM-2013)**, June 24-27, 2013, Perpignan, France. Contribution: p. 129.
4. **C. Caizer**, C. Soica, C. Dehelean, A. Radu, I. S. Caizer, *Study on toxicity of the superparamagnetic nanoparticles on the cells in order to use them in cancer therapy*, **The 8th International Conference on Fine Particle Magnetism**, June 24-27, 2013, Perpignan, France. Contribution: p. 130.
5. **C. Caizer**, *Superparamagnetic hyperthermia with magnetoliposomes for the cancer therapy*, **12th National Conference on Biophysics (CNB 2013) – Biophysics for Health, with International Participation**, June 13-16, Iasi, Romania, 2013. Contribution: Health Physics, P42.
6. **C. Caizer**, *Magnetic anisotropy of $Co_{\delta}Fe_{3-\delta}O_4$ nanoparticles for applications in magnetic hyperthermia*, **The 19th International Conference on Magnetism (ICM 2012)**, July 8–13, 2012, Bexco, Busan. Contribution: PO-Interdisciplinary topics, PO07.
7. **C. Caizer**, N. Hadaruga, D. Hadaruga, G. Tanasie, P. Vlăzan, *The Co ferrite nanoparticles/liposomes: magnetic bionanocomposites for applications in malignant tumors therapy*, **7th International Conference on Inorganic Materials**, 12 – 14 September 2010, Biarritz, France. Contribution: Nanomaterials, P2.45.
8. **C. Caizer**, A. Stancu, P. Postolache, I. Dumitru, I. Bodale, P. Vlăzan, *The magnetic properties of the $Co_{\delta}Fe_{(3-\delta)}O_4$ surfacted nanoparticles, with potential applications in cancer therap*, **7th International Conference on Fine Particle Magnetism (ICFPM 2010)**, June 21 – 24, 2010, Uppsala, Sweden. Contribution: PI, p. 91.
9. **C. Caizer**, M. řtefanescu, M. Stoia, P. Barvinschi, A. Neculae, *The Fe^{2+},Fe^{3+} ions and annealing temperature influence on the structure and magnetization of the $Co_x(Fe^{2+},Fe^{3+})_{3-x}O_4$ nanoparticles, obtained through the co-precipitation method*, **7th International Conference**

on Fine Particle Magnetism (ICFPM 2010), June 21 – 24, 2010, Uppsala, Sweden.
Contribution: PI, p. 92.

10. **C. Caizer**, M. Ștefănescu, M. Stoia *The obtaining and the magnetic characterization of the cobalt ferrite nanocrystallites*, **Invited Speaker: IEEE Magnetics Society Chapter (IEEE ROMSC 2009)** -Romanian Section, June 6-9, 2009, Iași, România. Contribution: **Plenary Lecturer**.
11. **C. Caizer**, D.M. Băltăteanu, *Computational method for precise evaluation of the mean magnetic diameter of the SPM nanoparticles*, **IEEE Magnetics Society Chapter (IEEE ROMSC 2009)**, Romanian Section, June 6 - 9, 2009, Iași, România. Contribution: Section D, Computational Magnetics, P10.
12. **C. Caizer**, P. Vlăzan, P. Barvinschi, *The effect of Co^{2+} ions concentration on the magnetic behavior of the surfacted/ nonsurfacted $Co_{\delta}Fe_{(3-\delta)}O_4$ nanoparticles*, **IEEE Magnetics Society Chapter (IEEE ROMSC 2009)**, Romanian Section, June 6 - 9, 2009, Iasi, Romania. Contribution: Section A, Magnetic Materials and Advanced Characterization, P11.
13. M. Ștefănescu, M. Stoia, **C. Caizer**, T. Dippong, P. Barvinschi, *Preparation of $Co_xFe_{3-x}O_4$ nanoparticles by thermal decomposition of some organo-metallic precursors*, **14-th International Conference on Thermal Analysis and Calorimetry**, 14 – 18 September, 2008, São Pedro, Brazil. Contribution: H07, p. 71.
14. **C. Caizer**, M. Ștefănescu, M. Stoia, P. Barvinschi, I. Hrianca, *Advanced nanocomposites of Ni,Zn ferrite – amorphous silica, obtained by means of a new sol-gel method: magnetic behaviour*, **International Conference on Fine Particles Magnetism (ICFPM-07)**, October 9 – 12, 2007, Rome, Italy. Contribution: PA36, p. 128.
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16. M. Stoia, M. Ștefănescu, **C. Caizer**, O. Ștefănescu, *Synthesis of magnetic nanocomposites $x\%Ni0.75Zn0.25Fe2O4/(100-x)\%SiO_2$ by a sol-gel method*, **The IX International Symposium “Young People and Multidisciplinary Research” (ISYPMR 2007 ACM-V)**, 15-16 November, Timisoara, 2007.

17. M. Stoia, **C. Caizer**, M. Ștefănescu, P. Barvinschi, *Obtaining of $(Ni_{0.65}Zn_{0.35}Fe_2O_4)_{x-}(SiO_2)_{100-x}$* , **9th European Symposium on Thermal Analysis and Calorimetry (ESTAC 9)**, Krakow, Poland, 27 – 31 August, 2006.
18. M. Ștefănescu, **C. Caizer**, M. Stoia, O. Ștefănescu, *Studies on the synthesis of Ni_xZn ferrite/SiO₂ nanocomposites trough a modified sol-gel method*, **Romanian International Conference on Chemistry and Chemical Engineering (RICCCE XIV)**, 22-24 Sept., 2005, Bucharest. Contribution: O-S02, p. 48.
19. **C. Caizer**, N. Ștefu, D. Bălțăteanu, M. Ștefănescu, M. Stoia, P. Barvinschi, *Magnetic properties of the $Ni_{1-x}Zn_xFe_2O_4/SiO_2$ nanocomposites*, **Physics Conference (TIM-05) - with International Participation**, Timișoara, November 26th – 26th, 2005. Contribution: MMP-04.
20. **C. Caizer**, D. Bălțăteanu, *Precise method for evaluating the mean magnetic diameter of the superparamagnetic nanoparticles*, **Physics Conference (TIM-05) - with International Participation**, Timișoara, November 25th – 26th, 2005. Contribution: MMP-03.
21. **C. Caizer**, V. Tura, *Magnetic relaxation in Co ferrite nanoparticles covered with amorphous silica and dispersed in water*, **7th International Conference on Physics of Advanced Materials (ICPAM-7)**, June 10 - 12, 2004, Iași, Romania. Contribution: Section 3: Magnetic Properties, P-III.9, p. 28.
22. M. Ștefănescu, **C. Caizer**, M. Stoia, O. Ștefănescu, *Ni_xZn/SiO₂ ferrite nanocomposites prepared by an improved sol-gel method and their characterisation*, **7th International Conference on Physics of Advanced Materials (ICPAM 7)**, June 10 - 12, 2004, Iași, Romania. Contribution: Section 1: Processing and Characterization, O-I.3, p. 13.
23. **C. Caizer C.**, M. Ștefănescu, M. Stoia, P. Barvinschi, O. Ștefănescu, *Ultrafine magnetic particles embedded in a silica matrix obtained by a new chemical route of synthesis*, **Physics Conference (TIM-04) - with International Participation**, Timișoara, November 26th – 27th, 2004. Contribution: MMP-03, p. 76.
24. G. Istratucă, **C. Caizer**, *Spinelic Co substituted magnetite. Synthesis and properties*, **11th Physical Chemistry (ROMPHYSCHM 11) - with International Participation**, 2-5 Sept. 2003, Timișoara, Romania. Contribution: Section 8 (Physical chemistry of materials and chemical engineering), S8-P189.

25. M. Popovici, D. Niznansky, C. Savii, J. Subrt, J. Bohacek, **C. Caizer**, C. Enache, C. Ionescu, *Structural and magnetic studies concerning formation of nanoparticles in silica matrix*, **Third International Conference on Inorganic Materials**, 7-10 Sept. 2002, Konstanz, Germany. Contribution: Section B (Nanostructured Matter), P67.
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