Universitatea Tehnică din Cluj-Napoca
Facultatea de Ingineria Materialelor si a Mediului
Departamentul de Fizica si Chimie
Prof.dr. Ioan Ardelean

LISTA
lucrărilor ştiinţifice în domeniul disciplinelor din postul didactic

A – Teza de doctorat

Metode moderne de rezonanta magnetica nucleara cu aplicatii in obtinerea de informatii structurale si dinamice asupra unor compusi moleculari
Conducător ştiinţific: Prof.dr.fiz. Dan Eugen Demco; Universitatea Babes-Bolyai din Cluj Napoca; Susţinere publică: 15 mai 1997

B – Cărţi şi capitole în cărţi publicate în ultimii 10 ani

B1. CĂRŢI

1. I. Ardelean, *Introducere in mecanica cuantica*, Editura U.T.Press, Cluj-Napoca, 2002, ISBN 973-8335-24-8(199 p)
2. I. Ardelean, *Fizica pentru ingineri*, Editura U.T.Press, Cluj-Napoca, 2005 (222 p)
3. I. Ardelean, *Rezonanta magnetica nucleara pentru ingineri*, Editura U.T. Press, Cluj-Napoca, 2013, ISBN: 978-973-662-905-1

B2. CAPITOLE DE CARTE

1. I. Ardelean, R. Kimmich, "Beyond the Limits of Conventional Pulsed Gradient Spin Echo (PGSE) Diffusometry: Generalization of the Magnetization-grating Principle", in "Diffusion NMR of Confined Systems: Fluid Transport in Porous Solids and Heterogeneous Materials"; Edited by Royal Society of Chemistry 2016; pag. 260-293; DOI:10.1039/9781782623779
2. I. Ardelean and R. Kimmich "Principles and unconventional aspects of NMR diffusometry", in "Annual Reports on NMR Spectroscopy", vol. 49, pag. 43 (Ed. G.A.Webb), Academic Press, 2003
3. I. Ardelean, "Applications of Field-cycling NMR Relaxometry to Cement Materials", in "Field-Cycling NMR Relaxometry: Instrumentation, Model Theories and Applications", Edited by Royal Society of Chemistry 2018; pag. 462 – 489; http://dx.doi.org/10.1039/9781788012966

C – Lucrări indexate ISI/BDI publicate în ultimii 10 ani

C1.Lucrari ISI

1. C. Badea, A. Pop, C. Mattea, S. Stapf, I. Ardelean, The effect of curing temperature on early hydration of gray cement via Fast Field Cycling-NMR relaxometry, Appl. Magn. Reson. 45, 1299–1309 (2014). doi:10.1007/s00723-014-0565-z.

2. S. Boboia, M. Moldovan, C. Prejmerean, C. Sarosi, A. Roman, I. Ardelean, Influence of Initiation System and Filler Ratio on the Properties of New Flowable Dental Composites, Materiale Plastice 52, 104-108 (2015).
3. A. Pop and I. Ardelean, Monitoring the size evolution of capillary pores in cement paste during the early hydration via diffusion in internal gradients, Cem. Conc. Res. 77, 76-81 (2015) (can be downloaded here)
4. A. Pop, A. Bede, M.C. Dudescu, F. Popa, I. Ardelean, Monitoring the Influence of Aminosilane on Cement Hydration Via Low-field NMR Relaxometry, Appl. Magn. Reson. 47, 191–199 (2015), doi: 10.1007/s00723-015-0743-7 (can be downloaded here).
5. A. Bede, A. Scurtu, I. Ardelean, NMR relaxation of molecules confined inside the cement paste pores under partially saturated conditions, Cem. Conc. Res. 89, 56-62 (2016), doi: 10.1016/j.cemconres.2016.07.012 (can be downloaded here).
6. J. Stepišnik, I. Ardelean, Usage of internal magnetic fields to study the early hydration process of cement paste by MGSE method, J. Magn. Reson. 272, 100-107, (2016). doi: 10.1016/j.jmr.2016.09.013 (can be downloaded here).
7. C. Cadar, C. Cotet, L. Baia, L. Barbu-Tudoran, I. Ardelean, Probing into the mesoporous structure of carbon xerogels via the low-field NMR relaxometry of water and cyclohexane molecules, Microporous Mesoporous Mater., 251, 19-25(2017).
8. A. Cretu, C. Mattea, S. Stapf, I. Ardelean, The effect of silica nanoparticles on the pore structure of hydrating cement paste: a spatially resolved low-field NMR study, Molecular Physics 117, 1006-1014 (2019) ttps://doi.org/10.1080/00268976.2018.1513581
9. A. Crețu (Bede), C. Mattea, S. Stapf, I. Ardelean, The effect of silica fume and organosilane addition on the porosity of cement paste, Molecules 25 (8), 1762 (2020) https://doi.org/10.3390/molecules25081762
10. C. Cadar, A. Cretu, M. Moldovan, C. Mattea, S. Stapf, I. Ardelean, NMR T1–T2 correlation analysis of molecular absorption inside a hardened cement paste containing silanized silica fume, Molecular Physics 117, 1000-1005 (2019), https://doi.org/10.1080/00268976.2018.1513582
11. C. Cadar, I. Ardelean, Surface influence on the rotational and translational dynamics of molecules confined inside a mesoporous carbon xerogel, Magnetic Resonance in Chemistry 57 (10), 829-835 (2019) https://doi.org/10.1002/mrc.4819
12. F Gallego-Gómez, C Cadar, C Lopez, I Ardelean, Microporosity Quantification via NMR Relaxometry, The Journal of Physical Chemistry C 123 (50), 30486-30491(2019) https://doi.org/10.1021/acs.jpcc.9b10398
13. F Gallego-Gómez, C Cadar, C López, I Ardelean, Imbibition and dewetting of silica colloidal crystals: An NMR relaxometry study, Journal of colloid and interface science 561, 741-748(2020)https://doi.org/10.1016/j.jcis.2019.11.050
14. V. Kushwah, D. Gomes Lopes, I. Koutsamanis, H. Plank, I. Ardelean, A. Sarkar, A. Prpich, M.T. Am Ende, H.T. Schmidt, P. Doshi, S.L. Shamblin, P. Laggner, A. Paudel, Evolution of the microstructure and the drug release upon annealing the drug-loaded lipid-surfactant microspheres, European Journal of Pharmaceutical Sciences 147, 105278 (2020) https://doi.org/10.1016/j.ejps.2020.105278
15. D.D.B Nergis, P. Vizureanu, I. Ardelean, A.V. Sandu, O.C. Corbu, E. Matei, Revealing the Influence of Microparticles on Geopolymers' Synthesis and Porosity, Materials 13 (14), 3211 (2020) https://doi.org/10.3390/ma13143211
16. A. Nan, M. Suciu, I. Ardelean, M. Senila, R. Turcu, Characterization of the Nuclear Magnetic Resonance Relaxivity of Gadolinium Functionalized Magnetic Nanoparticles, Analytical Letters 54, 124-139 (2021) https://doi.org/10.1080/00032719.2020.1731522
17. V. Kushwah, I. Saraf, T. Yeoh, I. Ardelean, H. Weber, A. Sarkar, R. Chen, T.Vogel, D, Modhave, P. Laggner, A. Paudel, Interplay of Aging and Lot-to-Lot Variability on the Physical and Chemical Properties of Excipients: A Case Study of Mono-and Diglycerides, Mol. Pharmaceutics 2021; https://doi.org/10.1021/acs.molpharmaceut.0c00847

18. J Stepišnik, I Ardelean, A Mohorič, Molecular self-diffusion in internal magnetic fields of porous medium investigated by NMR MGSE method, Journal of Magnetic Resonance 328, 106981 (2021) https://doi.org/10.1016/j.jmr.2021.106981
19. I. Ardelean, The Effect of an Accelerator on Cement Paste Capillary Pores: NMR Relaxometry Investigations, Molecules 26 (17), 5328 (2021) https://www.mdpi.com/1420-3049/26/17/5328
20. L.M. Nicula, O. Corbu, I. Ardelean, A.V. Sandu, M Iliescu, D. Simedru, Freeze–Thaw Effect on Road Concrete Containing Blast Furnace Slag: NMR Relaxometry Investigations, Materials 14 (12), 3288 (2021) https://doi.org/10.3390/ma14123288
21. M. Oztop Berkay Berk, C. Cavdaroglu, L. Grunin, I. Ardelean, D. Kruk, G. Mazi, Use of Magic Sandwich Echo and Fast Field Cycling NMR Relaxometry on Honey Adulteration with Corn Syrup, J. Science of Food and Agriculture, 2021, https://doi.org/10.1002/jsfa.11606
22. M.M. Rusu, C. Vilau, C. Dudescu, P. Pascuta, F. Popa, I. Ardelean, Characterization of the Influence of an Accelerator upon the Porosity and Strength of Cement Paste by Nuclear Magnetic Resonance (NMR) Relaxometry, Analytical Letters, 2022, https://doi.org/10.1080/00032719.2022.2072855
23. I. Lacan, M. Moldovan, C. Sarosi, I. Ardelean, Chitosan Effect on Hardening Dynamics of Calcium Phosphate Cement: Low-Field NMR Relaxometry Investigations. Polymers. 2022; 14(15):3042. https://doi.org/10.3390/polym14153042
24. Rusu, M.M.; Faux, D.; Ardelean, I. Monitoring the Effect of Calcium Nitrate on the Induction Period of Cement Hydration via Low-Field NMR Relaxometry. Molecules 2023, 28, 476. https://doi.org/10.3390/molecules28020476
25. Rusu, M.M.; Vulpoi, A.; Vilau, C.; Dudescu, C.M.; Păşcuţă, P.; Ardelean, I. Analyzing the Effects of Calcium Nitrate over White Portland Cement: A Multi-Scale Approach. *Materials* **2023**, *16*, 371. https://doi.org/10.3390/ma16010371

C2. Lucrari BDI

1. A Bede, A Pop, M Moldovan, I Ardelean, The influence of silanized nano-SiO2 on the hydration of cement paste: NMR investigations, AIP Conference Proceedings 1700, 060009 (2015)
2. C. Cadar, C. Cotet, L. Baia, I. Ardelean, Probing the connectivity and wettability of carbon aerogels and xerogels via low-field NMR, AIP Conference Proceedings 1917 (1), 040006 (2017)
3. C. Badea, A. Bede, I. Ardelean, The effect of silica fume on early hydration of white Portland cement via fast field cycling-NMR relaxometry, AIP Conference Proceedings 1917 (1), 040001 (2017)
4. A. Bede, I. Ardelean, Revealing the influence of water-cement ratio on the pore size distribution in hydrated cement paste by using cyclohexane, AIP Conference Proceedings 1917 (1), 040002 (2017)
5. I. Ardelean, S. Miclaus, I.I. Ardelean, C. Moisescu, Magnetotactic bacteria and biogenic magnetite nanocrystals as potential contrast agents in magnetic resonance imaging, IEEE Xplore, 2018, DOI:10.23919/EMF-MED.2018.8526044

E – Brevete obţinute pentru întreaga activitate

Nu e cazul

F – Contracte de cercetare (2020-2025)

1. Project PN-III-P4-ID-PCE-2020-0533 (4.01.2021-31.12.2023): Noi materiale nanocompozite pe bază de ciment pentru aplicații de imprimare 3D (Director: Prof.dr. Ioan Ardelean)

Data
21.01.2025

Semnătura