

Lista lucrărilor publicate
Conf. Dr. Mihail Lungu

Titlul tezei de doctorat:

Contribuții privind recuperarea unor materiale utile din deseuri industriale solide

I. Articole in reviste cotate ISI

1. M. Lungu, Z. Schlett: *Vertical drum eddy-current separator with permanent magnets*, International Journal of Mineral Processing, Vol. 63, Issue 4, 207-216 (2001).

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DOI: 10.1016/S0892-6875(01)00215-1

3. R. Meier-Staude, Z. Schlett, M. Lungu, D. Baltateanu: *A new possibility in Eddy-Current separation*, Minerals Engineering Vol. 15, Issue 4, 287-291 (2002).

DOI: 10.1016/S0892-6875(02)00007-9

4. Z. Schlett, M. Lungu: *Eddy-current separator with inclined magnetic disc*, Minerals Engineering, Vol. 15, Issue 5, 365-367 (2002).

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5. R. Koenlechner, Z. Schlett, M. Lungu, C. Caizer: *A new wet Eddy-current separator*, Resources, Conservation and Recycling, Vol. 37, Issue 1, 55-60 (2002).

DOI: 10.1016/S0921-3449(02)00057-5

6. M. Lungu, P. Rem: *Separation of small non-ferrous particles using an inclined drum eddy-current separator with permanent magnets*, IEEE Transaction on Magnetics. Vol.38, Issue 3, 1534-1538 (2002).

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7. M.Lungu, P.Rem: *Eddy-Current Separation of Small Nonferrous Particles By a Single Disk Separator With Permanent Magnets*, IEEE Transaction on Magnetics. Vol.39, Issue 4, 2062-2067 (2003).

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9. M.Lungu: *Separation of small nonferrous particles using an angular rotary drum eddy-current separator with permanent magnets*, International Journal of Mineral Processing, Vol. 78, Issue 1, 22-30 (2005).

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10. M.Lungu: *Separation of small metallic nonferrous particles in low concentration from mineral wastes using dielectrophoresis*, International Journal of Mineral Processing, Vol. 78, Issue 4, 215-219 (2006).

DOI: 10.1016/j.minpro.2005.10.007

11. M. Lungu: *Separation of small nonferrous particles using a two successive steps eddy-current separator with permanent magnets*, International Journal of Mineral Processing, Vol. 93, Issue 2, 172-178, (2009).

DOI: 10.1016/j.minpro.2009.07.012

12. M. Lungu, A. Neculae, M. Bunoiiu: *Some considerations on the dielectrophoretic manipulation of nanoparticles in fluid media*, *Journal of optoelectronics and advanced materials*, Vol. 12, Issue 12, 2423-2426 (2010).

13. M. Lungu, A. Neculae, M. Bunoiiu, N. Strambeanu: *Some Considerations on the Nanoparticles Manipulation in Fluid Media Using Dielectrophoresis*, *Romanian Journal of Physics*, Volume: 56, Issue: 5-6, 749-756 (2011).

14. A. Neculae, **M. Lungu**, C.G. Biris, M. Bunoiu: Numerical analysis of nanoparticles behavior in a microfluidic channel under dielectrophoresis, *Journal of Nanoparticle Research*, Volume: 14, Issue: 1154, 1-12 (2012).
DOI: 10.1007/s11051-012-1154-4
15. A. Neculae, R. Giugiulan, M. Bunoiu and **M. Lungu**: Effects of flow velocity upon nanoparticle distribution in microfluidic devices under dielectrophoresis, *Romanian Reports in Physics*, Vol. 66, No. 3, P. 754–764, 2014.
16. I. Malaescu, **M. Lungu**, R. Giugiulan and N. Strambeanu: The Clausius-Mossotti factor in low frequency field of the powders resulted from waste combustion, *Rom. Jour. Phys*, Vol. 59, No. 7–8, P. 862–872, 2014.
17. **M. Lungu**, A. Neculae and A. Lungu: Positive dielectrophoresis used for selective trapping of nanoparticles from flue gas in a gradient field electrodes device, *Journal of Nanoparticle Research*, Vol. 17 (12), 1-14, 2015.
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19. A. Neculae, M. Bunoiu, A. Lungu and **M. Lungu**: Filtration of flue gas in microfluidic devices using dielectrophoresis, *Romanian Journal of Physics*, Vol. 61, No. 5–6, 2016.
20. **M. Lungu** and N. Stefu: Study on particulate matter dispersion by correlating direct measurements with numerical simulations. Case study: Timisoara urban area, *International Journal of Environmental Science and Technology*, In press 2017,
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II. Article in reviste indexate ISI

1. **M. Lungu**, A. Neculae, M. Bunoiu: *Some considerations on the dynamics of nanometric suspensions in fluid media*, PROCEEDINGS OF THE PHYSICS CONFERENCE: TIM-08. AIP Conference Proceedings, Volume 1131, Issue 1, pp. 164-168 (2009).
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2. A. Neculae, M. Bunoiu, **M. Lungu**: *Numerical simulation of bioparticle manipulation using dielectrophoresis*, Proceedings of the Physics Conference TIM-09. AIP Conference Proceedings, Volume 1262, Issue 1, pp. 144-149 (2010).
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ISBN 978-0-7354-0951-4
4. A. Neculae, **M. Lungu**, M. Bunoiu, R. Giugiulan: *Electrohydro-dynamic modeling for manipulation of micro/nano particles in microfluidic systems*; AIP Conference Proceedings 1472, Proceedings of the physics conference TIM-11, Melville, New York, p. 155-161 (2012).
5. **M. Lungu**, R. Giugiulan, M. Bunoiu, N. Strambeanu, and A. Neculae: *Submicron particle trapping using traveling wave dielectrophoresis*; AIP Conference Proceedings 1564, 111 Melville, New York, 2013; p. 111-116, (2013) doi: 10.1063/1.4832804
6. **M. Lungu**, S. Balasoiu, M. O. Bunoiu and A. Neculae: *Study of a 3D DEP-based microfluidic system for selective nanoparticle manipulation*, AIP Conference Proceedings 1634, Melville, New York, p. 89-94, (2014) doi: 10.1063/1.4903019.
7. A. Neculae, N. Strambeanu, A. Lungu, M. Bunoiu and **M. Lungu**: *Nanoparticle trapping from flue gas using dielectrophoresis*, AIP Conference Proceedings, Vol. 1694, Melville, New York, pp. 040004-1 - 040004-6, (2015), ISBN 978-0-7354-1341-2, ISSN 0094-243X.

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8. M. Lungu, A. Lungu, N. Stefu, A. Neculae and N. Strambeanu : *Analysis of airborne particulate matter pollution in Timisoara city urban area and correlations between measurements and meteorological data*, AIP Conference Proceedings, Vol. 1796, Melville, New York, pp. 040011-1- 040011-6, doi: 10.1063/1.4972389

III. Articole necotate ISI (Anale)

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2. M. Lungu, L. Dascalescu: *Electrohydrodynamic filtration and separation of nanoparticles using dielectrophoresis, Part I: Theoretical considerations review*. Analele Universitatii de Vest din Timisoara, vol. 51/2007, 72-76.

3. M. Lungu, A. Lungu: *Electrohydrodynamic filtration and separation of nanoparticles using dielectrophoresis, Part II: Experimental review*. Analele Universitatii de Vest din Timisoara, vol. 51/2007, 76-80.

4. M. Lungu, A. Neculae, M. Bunoiu: *Numerical study on nanoparticle manipulation in fluid media using dielectrophoresis*, Analele Universitatii de Vest din Timisoara, vol. 54/2010, 94-100.

5. M. Lungu, R. Giugiulan, A. Lungu, M. Bunoiu and A. Neculae: *Flue gas filtration by entrapment of nanoparticles in a microfluidic device using dielectrophoresis*, Annals of the West University of Timisoara, Physics Series; 2013, Vol. 57, p1, accesion 99950414.

IV. Conferinte

1. M. Lungu, Z. Schlett: *Elektrosortierung von Leiterplattenschrott*, Tagungsband Kolloquium 8: Sortierung von Abfällen und mineralischen Rohstoffen, XLVI. Berg-und Hüttenmännischer Tag, TU Bergakademie Freiberg/Sachsen, Germania, June 1995, P4 1/5.

2. M. Lungu, Z. Schlett: *Separarea electrica a metalelor neferomagnetice din sterile minerale*. Conferinta interdisciplinara zonala Romania-Yugoslavia-Ungaria, ICMC Timisoara, Dec. 1996, 238-245.

3. M. Lungu, Z. Schlett: *Vertical Eddy-Currents Separator for Electronic Wastes*. Forschungshefte Kolloquium 2: Sortierung von Abfällen und mineralischen Rohstoffen 50. Berg-und Hüttenmännischer Tag, TU Bergakademie Freiberg/Sachsen, Germania, June 1999, 395-400.

4. M. Lungu, L. Dascalescu: *Electrohydrodynamic filtration and separation of nanoparticles using dielectrophoresis*, Physics Conference TIM-07, Timisoara, November 2007.

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6. A. Neculae, M. Bunoiu, **M. Lungu**: *Numerical simulation of bioparticle manipulation using dielectrophoresis*, Physics Conference TIM-09, Timisoara, November 2009.

7. M. Lungu, A. Neculae, M. Bunoiu: *Some considerations on the dielectrophoretic manipulation of nanoparticles in fluid media*, Conferinta Nationala de Fizica, Iasi, Septembrie 2010,

8. A. Neculae, **M. Lungu**, T. Nicolici-Schultz and M. Bunoiu: *Numerical study regarding the influence of electrodes' geometry on the dielectrophoretic forces*, Physics Conference TIM-10, Timisoara, November 2010.

9. M. Lungu, A. Lungu: *Dusty pasmas: elementary processes and possible applications*, Physics Conference TIM-10, Timisoara, November 2010.

10. A. Neculae, **M. Lungu**, M. Bunoiu, R. Giugiulan (Poenaru): *Electrohydrodynamic modeling for manipulation of micro/nano particles in microfluidic systems*; TIM-11 Physics Conference, U.V. Timisoara, Fac. Fizica, November 2011.
11. **M. Lungu**, A. Neculae, M. Bunoiu, N. Strambeanu, R. Giugiulan: *Reduction of nanoparticle emission by electrohydrodynamic filtering of residual combustion gases*; International Conference ANMBES 2012. Transilvania University of Brasov, Romania, May 24th-27th, 2012, Abstract Book p.107.
12. **M. Lungu**, I. Malaescu, R. Giugiulan, M. Bunoiu and N. Strambeanu: *Experimental investigations on the frequency dependence of the Clausius-Mossotti factor for nano/microparticles contained in the exhausted flue gases of incinerators*, the 8th General Conference of Balkan Physical Union, Constanta, Romania, July 5-7, 2012, Abstract Book p.155.
13. **M. Lungu**, A. Neculae, R. Giugiulan, M. Bunoiu and A. Lungu: *Effects of flow velocity upon nanoparticle distribution in microfluidic devices under dielectrophoresis*; ICPAM-9, 9th International Conference on Physics of Advanced Materials, Iasi, Romania, 20-23 September 2012, Abstract Book p.105.
14. A. Neculae, R. Giugiulan and **M. Lungu**: *Nanoparticle manipulation by dielectrophoresis*, IX Conference of the Society of Physicists of Macedonia, Ohrid, Republic of Macedonia, 20-23 September 2012.
15. **M. Lungu**, A. Neculae, M. Bunoiu, R. Giugiulan: *Separation of submicron particles suspended in fluid wastes using dielectrophoresis*; The Proceedings of XIII-th International Mineral Processing Symposium, Bodrum, Turkey, October 10 - 12, 2012, p.865-870.
16. A. Neculae, R. Giugiulan, M. Bunoiu **M. Lungu**: *Submicron particle trapping using traveling wave dielectrophoresis*; TIM-12 Physics Conference, Timisoara, Romania, November 27-30, 2012.
17. I. Malaescu, C.N. Marin, S. Satulu: *The temperature and particle concentration influence on the complex dielectric permittivity of magnetic fluids*; TIM-12 Physics Conference, Timisoara, November 27-30, 2012, Abstract Book p.118.
18. A. Neculae, R. Giugiulan, **M. Lungu** and N. Strambeanu: *Separation of nanoparticles from combustion gases wastes of incinerators*; IMCET 2013, The 23-rd International Mining Congress and Exhibition of Turkey, Kemer-Antalya, Turcia, 16-19 April 2013.
19. A. Neculae, M. Bunoiu, T. Marian and **M. Lungu**: *3D Numerical analysis of nanoparticle suspension distribution in a microfluidic device under dielectrophoresis*; The 13th International Balkan Workshop on Applied Physics, Constanta, July 4-6, 2013.
20. I. Malaescu, R. Giugiulan, **M. Lungu** and N. Strambeanu: *The Clausius-Mossotti factor in low frequency field of the powders resulted from waste combustion*; The 13th International Balkan Workshop on Applied Physics, Constanta, July 4-6, 2013.
21. **M. Lungu**, R. Giugiulan, M. Bunoiu and A. Neculae: *Simulation study of a 3D DEP-based microfluidic system*; TIM-13 Physics Conference, Timisoara, Romania, November 21-24, 2013.
22. A. Neculae, M. Bunoiu, A. Lungu and **M. Lungu**: *Flue gas filtration prediction in microfluidic devices using dielectrophoresis*, The 14-th International Balkan Workshop on Applied Physics, Constanta, July 2-4-, 2014.
23. A. Neculae, M. Bunoiu, A. Lungu and **M. Lungu**: *Electrohydrodynamic filtration of flue gas by nanoparticle trapping in microfluidic devices*, ICPAM-10, 10th International Conference on Physics of Advanced Materials, Iasi, Romania, 21-26 September 2014, Iasi, Romania.

24. A. Neculae, A. Lungu, M. Bunoiu and **M. Lungu**: *Nanoparticles trapping from flue gas using dielectrophoresis*, TIM-14 Physics Conference – Physics without frontieres, Timisoara, Romania, November 20-22, 2014.
 25. J.M. Patrascu, M. Bunoiu and **M. Lungu**: *The nanoparticle effect hypothesis in femoral head aseptic necrosis*, TIM-14 Physics Conference – Physics without frontieres, Timisoara, Romania, November 20-22, 2014.
 26. A. Neculae, A. Lungu, N. Strambeanu and **M. Lungu**: *Recovery of Nanoparticles from Flue Gas using Dielectrophoresis*, IMCET 2015, The 24th International Mining Congress and Exhibition of Turkey-IMCET'15 Antalya, Turkey, April 14-17, 2015.
 27. **M. Lungu**, A. Neculae, A. Lungu, M. Bunoiu, N. Strambeanu, D. Arghiriade, L. Demetrovici: *Prediction of the distribution of the pollutants emitted by a waste incinerator in an urban area using numerical simulations*, Conference Bucharest University Faculty of Physics 2015 Meeting, Section Atmosphere and Earth Science; Environment Protection, Bucharest, June 19-th, 2015.
 28. **M. Lungu**, A. Neculae, A. Lungu, M. Bunoiu, N. Strambeanu, D. Arghiriade, L. Demetrovici: *Evaluation of the dispersion of the pollutants released by a waste incinerator using numerical simulations*, The 15-th International Balkan Workshop on Applied Physics, Constanta, July 2-4, 2015.
 29. **M. Lungu**, D. Arghiriade, N. Strambeanu, A. Lungu, L. Demetrovici: *Numerical simulation of particulate matter emissions from the stack of a special waste incinerator as point source. Fractions of contained nanoparticles*, International Sipsosionum "The Environment and the Industry" SIMI 2015, Bucharest, October 29-30, 2015.
 30. **M. Lungu**, A. Neculae, A. Lungu, N. Stefu: *Air pollution with nanoparticles and its prevention by filtering the flue gases using dielectrophoresis*, International Engineering Symposium at Banki - Efficiency, Safety and Security, IESB 2015, Obuda University, Budapest, November 19, 2015.
 31. **M. Lungu**, A. Lungu, N. Stefu, A. Neculae, and N. Strambeanu: *Analysis of airborne particulate matter pollution in Timisoara city urban area and correlations between measurements and meteorological data*, TIM 15-16 International Physics Conference, Timisoara, Romania, May 26-28, 2016.
 32. J.M. Patrascu, B. Andor, I. Malaescu, A. Lungu, A. Zamfir, A. Robu and **M. Lungu**: *Study regarding possible correlations between synovial fluid properties and femoral head avascular necrosis*, TIM 15-16 International Physics Conference, Timisoara, Romania, May 26-28, 2016.
 33. **M. Lungu**, A. Neculae, A. Lungu and N. Strambeanu: *Investigations Regarding Possibility on Flue Gas Filtration by Selective Retaining of Nanoparticles using Positive Dielectrophoresis*, International Conference on Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences IC-ANMBES 2016. Transilvania University of Brasov, Romania, June 29th-July 1st, 2016.
 34. **M. Lungu**, N. Stefu, A. Lungu, and A. Neculae: *Study on the airborne particulate matter distribution in Timisoara city urban area*, The 16-th International Balkan Workshop on Applied Physics, Constanta, July 7-9, 2016.
- A. Lungu, I. Malaescu, CN. Marin, P. Vlazan, P. Sfarloaga: *The effect of the dopants on the structure, electric and magnetic properties of manganese ferrites*, The 16-th International Balkan Workshop on Applied Physics, Constanta, July 7-9, 2016.

V. Carti:

1. **M. Lungu**: *Metode de separare a materialelor reciclabile*, Editura Universitatii de Vest, Timisoara 2005, 312 pag., ISBN 973-8433-91-6.
2. **M. Lungu** : *Plasma Physics and Applications*, Editura Universitatii de Vest, Timisoara 2006, 260 pag., ISBN 973-7608-80-1.
3. **M. Lungu**, A. Neculae, M. Bunoiu and C.G. Biris (editors): *Nanoparticles' Promises and Risks; Characterization, Manipulation, and Potential Hazards to Humanity and*

Environment, Springer Science+Business Media, ISBN: 978-3-319-11727-0 (Print) 978-3-319-11728-7 (Online), 2014.

VI. Capitole carti:

1. N. Strambeanu, L. Demetrovici, D. Dragos and **M. Lungu**, Chapter I: *Nanoparticles: Definition, Classification and General Physical Properties*, Part I: Nano-particle Classification and Sources in Human Society, Book: **Nanoparticles' Promises and Risks**; Characterization, Manipulation, and Potential Hazards to Humanity and the Environment, Springer Science+Business Media, ISBN: 978-3-319-11727-0 (Print) 978-3-319-11728-7 (Online), 2014.
2. A. Lungu, **M. Lungu**, A. Neculae and R. Giugiulan, Chapter 13: *Nanoparticle Characterization Using Nanoparticle Tracking Analysis*, Part III: Characterization and Detection Methods for Nanoparticles, Book: **Nanoparticles' Promises and Risks**; Characterization, Manipulation, and Potential Hazards to Humanity and the Environment, Springer Science+Business Media, ISBN: 978-3-319-11727-0 (Print) 978-3-319-11728-7 (Online), 2014.
3. **M. Lungu**, M. Bunoiu and A. Neculae, Chapter 14: *Dielectrophoresis Used for Nanoparticle Manipulation in Microfluidic Devices*, Part IV: Methods for Sorting, Separating and Manipulating Nanoparticles, Book: **Nanoparticles' Promises and Risks**; Characterization, Manipulation, and Potential Hazards to Humanity and the Environment, Springer Science+Business Media, ISBN: 978-3-319-11727-0 (Print) 978-3-319-11728-7 (Online), 2014
4. I. Hrianca, **M. Lungu**, C. Sora, Cap. 2 : *Forte de gradient in camp electric*, Carte : **Forte de gradient si aplicatii**, Ed. Mirton Timisoara 1995, ISBN 973-576-026-7,
5. C. Sora, **M. Lungu**, et al, Cap. 3 : *Forte de gradient in camp magnetic*, Carte : **Forte de gradient si aplicatii**, Ed. Mirton Timisoara 1995, ISBN 973-576-026-7.

VII. Cursuri

2. Z. Schlett, M. Rasa, **M. Lungu**: *Plasma Physics, Course*, Tipografia Universitatii de Vest din Timisoara, 1994.
3. **M. Lungu**: *Metode fizice de separare, Curs*, Tipografia Universitatii de Vest din Timisoara 2000.

VIII. Indrumatoare de laborator

1. Z. Schlett, **M. Lungu**: *Materiale si dispozitive semiconductoare, Indrumator de laborator, partea a II-a*, Tipografia Universitatii de Vest din Timisoara, 1993.
2. Aplicatii in LabView, Lucrari de laborator (format electronic), Link: www.physics.uvt.ro/~lmihai/Aplicatii LabView.zip

IX. Brevete de inventie

1. Z. Schlett, **M. Lungu**: *Separator magnetic, pentru particule metalice, neferomagnetice, din amestecuri heterogene*, Brevet de inventie nr. 118701, OSIM 31.07.2003

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