

**Autorul tezei de abilitare: Conf.dr. ing. Motoc Luca Dana**

**Titlul tezei de abilitare: Analiza comparativă teoretico-experimentală a materialelor compozite hibride polimerice**

**Domeniul: Inginerie Mecanică**

## LISTA DE LUCRĂRI

### LUCRĂRI RELEVANTE

1. Oltean, D.I., et al., *Electrical properties of metallic iron particle reinforced polymeric composite materials*. Journal of Optoelectronics and Advanced Materials, 2008. **10**(12): p. 3328-3331.
2. Curtu, I. and Motoc Luca D., *Theoretical - experimental comparisons of multi-phase composite materials elastic coefficients retrieved from tensile, compressive and bending tests. Influencing factors*. Materiale Plastice, 2008. **45**(4): p. 366-371.
3. Motoc Luca D. and I. Curtu, *Dynamic mechanical analysis of multiphase polymeric composite materials*. Materiale Plastice, 2009. **46**(4): p. 462-466.
4. Motoc Luca D., et al., *Multiphase polymeric composite materials CTE variation with extreme environmental conditions*. Materiale Plastice, 2010. **47**(2): p. 236-239.
5. Motoc Luca D., I. Oltean, and V. Luca, *Tailoring the multiphase composite materials' electrical properties*. Journal of Optoelectronics and Advanced Materials, 2010. **12**(8): p. 1795-1798.
6. Ferrandiz Bou, S., Pop, A. P., Lopez Martinez, J., Motoc Luca, D.- *Adapting to the new ECTS programme. Comparison of the evolution of the materials course in Romania and Spain*. INTEND 2011: 5th International Technology, Education and Development Conference, 2011: p. 4027-4033.
7. Motoc Luca D., *Dynamic mechanical characterization of CF/GF hybrid reinforced polymeric composite structures*. Proceedings of the ASME 11th Biennial Conference on Engineering Systems Design and Analysis ESDA, 2012, Vol 3. p. 27-32.
8. Motoc Luca D. and S. Vlase, *Micromechanical based simulation and experimental approaches in the thermal conductivities assessment of hybrid polymeric composite materials*. Proceedings of the ASME 11th Biennial Conference on Engineering Systems Design and Analysis, 2012, **3**: p.21-26
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10. Motoc Luca D., S. Ferrandiz Bou, and R. Balart Gimeno, *Effects of fibre orientation and content on the mechanical, dynamic mechanical and thermal expansion properties of multi-layered glass/carbon fibre-reinforced polymer composites*. Journal of Composite Materials, 2014. **49**(10): p. 1211-1221.

### TEZA DE DOCTORAT

*Contribuții la studiul corelațiilor dintre gradul de tensionare și proprietățile fizice ale unor materiale utilizând metode nedistructive (sonore, vizuale)*

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**BREVETE**

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*Rezistor reglabil prin modificarea presiunii aplicate asupra elementului rezistiv*, Brevet nr. RO 123411, eliberat la data 28/02/2012.

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**CĂRȚI / CAPITOLE DE CĂRȚI**

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2. D. Luca Motoc – *Materiale compozite cu pulberi: analiză, modelare, fabricare și testare ultrasonice nedistructivă*, Ed. Universității Transilvania din Brașov, ISBN 973-635-527-6, 2005.
3. I. Szava, V. Ciofoaia, D. Luca Motoc, I. Curtu - *Metode experimentale în dinamica structurilor mecanice*, Ed. Universității Transilvania din Brașov, ISBN 973-9474-40-3, 2000.
4. D. Luca Motoc – *Echipamente de prelucrare optică a informațiilor*, Ed. Universității Transilvania din Brașov, ISBN , 2003.
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6. D. Luca Motoc – *Programarea în C++*. *Aplicații*, Ed. Universității Transilvania din Brașov, ISBN 978-973-598-183-9, 2007.
7. S. Zamfira, D. Luca (Motoc), M. Baritz, A. Cornea, M. Ulea – *Îndrumar de optică tehnică*, Ed. Universității Transilvania din Brașov, 1998.
8. Motoc Luca D., Oltean I. D. - *Conductive polymeric composite material's behaviour under various loading conditions*, DAAAM International Scientific Book 2008, ISBN 3-901509-69-0, ISSN 1726-9687, Ed. B. Katalinic, Publisher DAAAM International Viena.
9. Șoica A., Motoc Luca D., Lache S., Țârulescu S. - *Aspects concerning of the automotive-pedestrian collision*, DAAAM International Scientific Book 2008, ISBN 3-901509-69-0, ISSN 1726-9687, Ed. B. Katalinic, Publisher DAAAM International Viena.
10. Curtu I., Motoc Luca D. – *Theoretical and experimental approach of multi-phase composite materials*, DAAAM International Scientific Book 2009, ISBN 978-3-901509-71-1, ISSN 1726-9687, Ed. B. Katalinic, Publisher DAAAM International Viena.
11. Motoc Luca D., Ciofoaia V. – *Predicting, measuring and tailoring thermal properties of morphological and structural modified polymeric composite materials*, Engineering the future, Ed. L. Dudas, ISBN 978-953-307-210-4, Sciyo, 2010.

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**ARTICOLE ÎN REVISTE**

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1. Oltean, D.I., et al., *Electrical properties of metallic iron particle reinforced polymeric composite materials*. Journal of Optoelectronics and Advanced Materials, 2008. **10**(12): p. 3328-3331.
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7. Motoc Luca D., A.P. Pop, and G.B. Mihoc, *A perspective in sizing the main influencing factors on the thermal properties of different metal/non-metal powders*. Metalurgia International, 2011. **16**(4): p. 97-100.
8. Novac, G., M.D. Luca, and M.G. Bejinaru, *Tailoring thermal regimes to size the overall CTE of SiC particle reinforced polymeric composites*. Metalurgia International, 2011. **16**(3): p. 19-21.
9. Motoc Luca D., G. Novac, and R.M. Popescu, *Measuring and characterizing CTE variations for multiphase polymeric composites subjected to extreme environmental conditions*. Metalurgia International, 2011. **16**(3): p. 22-25.
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15. Motoc Luca D., S. Ferrandiz Bou, and R. Balart Gimeno, *Effects of fibre orientation and content on the mechanical, dynamic mechanical and thermal expansion properties of multi-layered glass/carbon fibre-reinforced polymer composites*. Journal of Composite Materials, 2014. **49**(10): p. 1211-1221.
16. Motoc Luca, D., *Hybrid particle/fiber polymer based composites analysis based on DMA data vs. material property predictions*. Applied Mechanics and Materials 2014: p. 101-106.
17. Motoc Luca D., Bedo, T., *An estimate of thermo-physical changes in hybrid basalt/glass fibres reinforced polymer composites*, Advanced Engineering Forum, **13**, 2015: p. 23-28.

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**ARTICOLE PUBLICATE IN VOLUME ALE CONFERINTELOR INTERNAȚIONALE**

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1. Motoc Luca, D. and A. Soica. *Mechanical behaviour of 3-phase polymeric composites subjected to static loading conditions*. in *Proceedings of the International Conference of DAAAM Baltic "Industrial Engineering"*. 2008.
2. Teodorescu-Draghicescu, H., et al., *On the elastic properties of some advanced composite laminates subjected to off-axis loading systems*. Proceedings of the 1st WSEAS International Conference on Materials Science, ed. D.K. Yfantis, et al. 2008. 40-43.

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4. Luca, V., Motoc Luca, D., Olteanu, I. D. *Multiphase composite materials elastic modulus non-destructive assesment* in *Proceedings of the 2nd WSEAS International Conference on Engineering mechanics, Structures and Engineering geology*. 2009. Rhodos.
5. Motoc Luca, D. *Effects of particle content and post-curing thermal treatment on the effective modulus of multi-phase composite materials*. in *Annals of DAAAM and Proceedings of the International DAAAM Symposium*. 2009.
6. Motoc Luca, D., *A micromechanical based bounding and elastic properties estimation of multiphase polymeric composite materials*, in *The 3<sup>rd</sup> International Conference on Computational Mechanics and Virtual Engineering COMEC 2009*. 2009: Brasov. p. 399-402.
7. Cerbu C., Motoc Luca D., Ciofoaia V. - *Advantages of the using of the poliester resin to manufacturing of the composite materials based on wood flour*, Proceedings to the 20th International DAAAM Symposium "Intelligent Manufacturing & Automation: Theory, Practice & Education", 25-28 noiembrie 2009, Viena, Austria, ISSN 1726-9679, ISBN 978-3-901509-70-4, p. 1417-1418.
8. Motoc Luca, D., C. Cerbu, and A. Soica. *Static versus dynamic elastic moduli of multiphase polymeric composite materials*. in *Annals of DAAAM and Proceedings of the International DAAAM Symposium*. 2009
9. Motoc Luca, D., I. Oltean, and V. Luca, *Tailoring the mltiphase materials' electrical properties* in *The 6th International Romanian Conference on Advanced Materials:ROCAM 2009*. 2009, Ed. Universitatii din Bucuresti: Brasov.
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13. Motoc Luca, D., Curtu, I., Campean, M *Environmental effects on multiphase polymeric composite materials' thermal properties*. in *14th European Conference on Composite Materials ECCM14*. 2010. Budapest: Budapest University of Technology and Economics, Department of Polymer Engineering.
14. Motoc Luca, D., Pop, I. O., Luca, M., *Size and morphology related dependencies in CTE of multiphase particle reinforced polymeric composite materials*, in *ICRACM 2010, 3<sup>rd</sup> International Conference on Recent Advances in Composite Materials, December 13-15, 2010* F.C. A. Pizzi, F. Hugot et al., Editor. 2010: Universite de Limoges, Limoges, France.
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23. Olteanu, I.D. and D. Motoc Luca. *Conductive polymeric composites behaviour under various loading conditions*. in *Proceedings of the International Conference of DAAAM Baltic "Industrial Engineering"*. 2008.
24. Pirna, I., et al., *Flexural rigidity evaluation of a new sandwich structure with nonwoven polyester mat*. Proceedings of the 11th Wseas International Conference on Automatic Control, Modelling and Simulation, ed. M. Demiralp, N.A. Baykara, and N.E. Mastorakis. 2009. 234-239.
25. Teodorescu, H., et al., *Some averaging methods in the micromechanics of composite materials with periodic structure*. ACMOS '08: Proceedings of the 10th Wseas International Conference on Automatic Control, Modelling and Simulation, ed. M. Demiralp, et al. 2008. 210-214.
26. Teodorescu, H., et al., *Mechanical behavior of an advanced sandwich composite structure*. *New Aspects of Engineering Mechanics, Structures, Engineering Geology*, ed. M.K. Nikolinakou, et al. 2008. 280-285.
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31. Motoc Luca D. – *FEM based simulation of injected bone shaped PP based composite materials,* The 4<sup>th</sup> International Conference on Advanced Composite Materials Engineering, COMAT 2012, 18<sup>th</sup>-20<sup>th</sup> October 2012, Braşov, vol. 3, p. 764-768, ISBN 978-973-131-162-3.
32. Oltean, I.D. and D.L. Motoc, *About electromagnetic behaviour of composite materials with iron powder.* 2013 8th International Symposium on Advanced Topics in Electrical Engineering. 2013.

#### **ALTE LUCRĂRI / REALIZARI RELEVANTE**

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Prezentări în cadrul Academiei Române, Comisia de Analiză Termică și Calorimetrie

1. *Dynamic mechanical properties of basalt/flax and carbon/flax hybrid polymer composites* (2015)
2. *Towards "all green" hybrid polymer composites tailored by the aid of DMA investigations* (2014).

Prelegere

Locul: 30 Sept. 2013 - PYCO Fraunhofer Research Institution for Polymeric Materials and Composites and Brandenburg Technical University at Cottbus

Titlul prezentării: *Polymer reinforced composites: an engineering perspective*

Data

1 Iulie 2015

Conf. dr. ing. Motoc Luca Dana