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SCIENTIFIC PUBLICATION

PhD Thesis

Research on the corrosion behavior of stainless steels subjected to plastic deformation and plasma nitriding.

Habilitation Thesis

Sustainable technologies with low impact on the environment for extending the lifetime of metal or metal-based products.

Published Books and Book Chapters

1. **Vermeşan H.**, *Coroziune și Protecție Anticorozivă*, Editura Risoprint, Cluj-Napoca, 2017, ISBN 978-973-751-690-9, 271p.
 2. **Vermesan H.**, Tiuc A. E., *Fenomene de Transfer al Poluanților*, Editura Risoprint, Cluj-Napoca, 2015, ISBN 978-973-53-1252-7, 130p
 3. Hegyi A., **Vermeşan H.**, Rus V., *The Corrosion of Hot Dip Galvanized Rebars in Concrete*, Ed. LAP Lambert Academic Publishing, Saarbrücken, Germania, 2011, ISBN 978-3-8465-1473-3.
 4. **Vermeşan H.**, *Coroziune și Protecție Anticorozivă – Lucrări de laborator*, Editura Risoprint, Cluj-Napoca, 2010, ISBN 978-973-53-0313-6.
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1. M CHIRA, **H. VERMEŞAN**, V. RUS, E. GRUNWALD, Jahrbuch Oberflächentechnik, Band 69, Leuze Verlag, 2013, pag. 235 – 259, ISBN 978-3-87480-280-2.
 2. A HEGYI, **H. VERMEŞAN**, V. RUS, E. GRUNWALD, G. VERMEŞAN, Jahrbuch Oberflächentechnik, Band 68, Leuze Verlag, 2012, pag. 174 – 183, ISBN 978-3-87480-274-1.
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 5. L. M. MUREŞAN, C. BULEA, A. POP, **H. VERMEŞAN**, V. RUS, E. GRUNWALD, Jahrbuch Oberflächentechnik, Band 66, Leuze Verlag, 2010, pag. 211 - 220, ISBN 978-3-87480-259-8

6. **H. VERMEŞAN**, N. HIRAI, Jahrbuch Oberflächentechnik, Band 65, Leuze Verlag, 2009, pag. 76 - 88, ISBN 978-3-87480-253-6.
7. **H. VERMEŞAN**, E. GRUNWALD, , G. VERMEŞAN, V. RUS, Jahrbuch Oberflächentechnik, Band 65, Leuze Verlag, 2009, pag. 242 - 258, ISBN 978-3-87480-253-6.

Research articles

1. Tiuc, AE; Borlea, SI; Nemes, O; **Vermesan, H**; Vasile, O; Popa, F; Pinto, R, New Composite Materials Made from Rigid/Flexible Polyurethane Foams with Fir Sawdust: Acoustic and Thermal Behavior, POLYMERS, Volume: 14, Issue: 17, Article Number: 3643, DOI: 10.3390/polym14173643, 2022
2. Uriciuc, W.A.; **Vermesan, H.**; Tiuc, A.E.; Ilea, A.; Bosca, A.B.; Popa, C.O. Casting over Metal Method Used in Manufacturing Hybrid Cobalt-Chromium Dental Prosthetic Frameworks Assemblies, MATERIALS, Volume: 14, Issue: 3, 539, DOI:10.3390/ma14030539, Published: 2021
3. **Vermeşan H.**, Mangău A., Tiuc AE, Perspectives of Circular Economy in Romanian Space, Sustainability 2020, 12(17), 6819; <https://doi.org/10.3390/su12176819>
4. Borlea (Mureşan), S.I., Tiuc, A.-E., Nemeş, O., **Vermeşan, H.**, Vasile, O. Innovative Use of Sheep Wool for Obtaining Materials with Improved Sound-Absorbing Properties. Materials 2020, 13, 694. <https://doi.org/10.3390/ma13030694>
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7. Tiuc A.E., Nemeş O., **Vermesan H.**, Toma A.C., New sound absorbent composite materials based on sawdust and polyurethane foam, Composites Part B: Engineering, vol. 65, 2019, 120-130. <https://doi.org/10.1016/j.compositesb.2018.11.103>
8. Tiuc A.E., Vasile O., **Vermesan H.**, Platon M.A., Sound Absorbing Insulating Composites Based On Polyurethane Foam And Waste Materials, Materiale Plastice, vol.55, No.3, 2018.
9. Tiuc AE, Vasile O, **Vermesan H.**, Nemes O, The Use of Mathematical Models in Determining Acoustic Absorption Coefficient of New Composite Porous Materials, RJAV vol XIV issue 2/2017, pp. 97-101.
10. Rada, S., Unguresan, M. L., Bolundut L., Rada M., **Vermesan H.**, Pica M., Culea E., Structural and electrochemical investigations of the electrodes obtained by recycling of lead acid batteries, Journal of Electroanalytical Chemistry, 2016.
11. Tiuc, A. E., Dan, V., **Vermesan, H.**, Gabor, T., Proorocu, M., Recovery Of Sawdust And Recycled Rubber Granules As Sound Absorbing Materials, Environmental Engineering And Management Journal, vol. 15, iss. 5, pp. 1093-1101, 2016.
12. Rus V., **Vermesan H.**, Hegyi A., Tiuc A. E., Electrochemical Impedance Spectroscopy Study-Evolution Modeling Of Corrosion Products Layer Formed At Hot Dip Galvanized Rebar-Fresh Concrete Interface, Romanian Journal Of Materials, vol. 46, iss. 2, pp. 196-203, 2016.
13. Rus V., Hegyi A., **Vermeşan H.**, Tiuc A. E., Steel reinforcement in fresh concrete, Studia Universitatis Babeş-Bolyai Seria Chemia, vol. LX(60), issue 2, Tom II, pp. 409-419, 2015.

14. Tiuc A. E., Nemeş O., Perhaiţa I., **Vermeşan H.**, Gabor T., Dan V., Thermal behaviour of polyurethane matrix composite materials, *Studia Universitatis Babeş-Bolyai Seria Chemia*, vol. LX, issue 2, Tom I, pp. 169-176, 2015.
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16. Chira M., **Vermeşan H.**, Rus V., Grunwald E., Corrosion behavior of Zn-Ni coatings electrodeposited in pulsed current and magnetic field on different substrates by electrochemical impedance spectroscopy techniques, *Studia Universitatis Babeş-Bolyai, Chemia*, vol. LIX, issue 1, pp.63-78, 2014.
17. Thalmaier G., Vida-Simiti I., **Vermeşan H.**, Codrean C., Chira M., Amorphous Ni₃₆Zr₃₅Ti₂₉ alloy as bipolar plates for polymer electrolyte membrane fuel cells, *Optoelectronics and Advanced Materials, Rapid Communications*, vol. 7, nr.7-8, pp. 573-576, 2013.
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23. Chira M., **Vermeşan H.**, Rus V., Gruwald E., Effect of the intermediate layer composition on tribocorrosion behavior of zinc-nickel alloy, *Korróziós Figyelő*, Vol. 52, Issue 4, 2012.
24. Bulea C.C., Grunwald E., Mate A., **Vermeşan H.**, Co-deposition of zinc-cobalt-chromium three-component alloy with nanoscale silicon dioxide II. Properties of the alloy layer, *Korróziós Figyelő*, Vol. 52, Issue 2, pp. 46-51, 2012.
25. Bumbuc C., Bulea C.C., Rus V., Gruenwald E., **Vermeşan H.**, Effect of brighteners used in weakly acidic zinc electrolytes on the structure and chemical composition of galvanized Zn-Ni alloy layers, *Korróziós Figyelő*, vol. 52, no. 1, pg. 4-7, 2012.
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23. Hegyi A., **Vermeşan H.**, Rus V., Grunwald E., Vermesan G., Corrosion of hot dip galvanized rebars in concrete under the attack of chlorides and freeze-thaw cycles, Galvanotechnik, Leuze Verlag, pag. 58-73, 2015.
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1. Tiuc AE, Vasile O., Vermesan H., Nemeş O., Borlea (Muresan) SI, New Multilayered Composite for Sound Absorbing Applications, Romanian Journal of Acoustics and Vibration, vol 15 issue 2/2018, pp. 115-121 [SCOPUS]
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Patents

1. Ciubotaru, Ghe. Nica, I. Sandu, **H. Vermeșan**, Binder composition for agglomeration of powdery products. Patent no. 117702, 2007.
2. **H. Vermeșan**, M. Chira, Stand for the study of tribocorrosion, Patent no. 130936, 2020
3. **H. Vermeșan**, M. Chira, Method of electrodeposition of Zinc-Nickel alloy on stainless steel substrate 2022

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