



Catalin Croitoru

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Gender: Male

CONTACT

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WORK EXPERIENCE

01/10/2022 – CURRENT Brasov, Romania

Professor Transilvania University of Brasov

Teaching activities (courses and laboratories), research activities and PhD students coordination in the field of materials engineering

27/02/2017 – 30/09/2022 Brasov, Romania

Associate Professor Transilvania University of Brasov

Teaching activities (courses and laboratories)
Research activities in the field of materials engineering and industrial engineering

22/02/2015 – 27/02/2017 Brasov, Romania

Lecturer Transilvania University of Brasov

Teaching activities (courses and laboratories)
Research activities in the field of materials engineering

EDUCATION AND TRAINING

30/09/2015 – 24/06/2017 Brasov, Romania

Master's degree Transilvania University of Brasov

Level in EQF EQF level 7

31/05/2010 – 30/05/2013 Brasov, Romania

Postdoctoral researcher Transilvania University of Brasov

Level in EQF EQF level 8

30/09/2006 – 21/11/2009 Brasov, Romania

PhD in Materials Engineering Transilvania University of Brasov

Level in EQF EQF level 8

30/09/2002 – 29/06/2006 Brasov, Romania

Licensed in Physics and Chemistry Transilvania University of Brasov

Level in EQF EQF level 6

LANGUAGE SKILLS

MOTHER TONGUE(S): Romanian

Other language(s):

English

Listening C2

Reading C2

Writing C2

Spoken production C2

Spoken interaction C2

German

Listening A2

Reading A2

Writing A2

Spoken production A2

Spoken interaction A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Microsoft Office

ADDITIONAL INFORMATION

Professional skills

Job-related skills

- Obtaining and characterizing polymeric and composite materials;
- Obtaining and characterizing organic, metallic and hybrid coatings and films;
- Characterization of advanced oxidation processes (photocatalysis);
- Techniques for materials characterization;
- Determining and quantifying the health hazards resulting from industrial processes;
- Coordination of three national and international research grants;
- Expert evaluator of the Executive Unit for the Financing of Higher Education, Research, Development and Innovation (UEFISCDI);
- Permanent Editor of the Journal of Materials Science (Springer) and guest editor of the Journal Materials Today: Proceedings (Elsevier);
- WoS ID: B-6384-2011; Scopus ID: 26532430900
- h-index: 18 (ISI WoS); 20 (Scopus); 23 (Google Scholar)

WoS-indexed papers

1. **Croitoru C**, Patachia S, Doroftei F, Paparita E, Vasile C. Ionic liquids influence on the surface properties of electron beam irradiated wood. *Applied Surface Science* (2014), Vol. 314, pag. 956–966 **WOS: 000341464100130** [link](#) FI 6,707
2. Patachia S, Croitoru C, Friedrich C. Effect of UV exposure on the surface chemistry of wood veneers treated with ionic liquids. *Applied Surface Science* (2012) Vol. 258, Nr. 18, pag. 6723–6729. **WOS: 000304004100002** [link](#) FI 6,707
3. Traistaru A-AT, Timar MC, Campean M, **Croitoru C**, Sandu I. Paraloid B72 versus paraloid B72 with Nano-ZnO additive as consolidants for wooden artefacts. *Materiale Plastice* (2012) Vol. 49, Nr.4, pag. 293–300. **WOS: 000313149100014** [link](#) FI 0,593
4. **Croitoru C**, Patachia S, Porzsolt A, Friedrich C. Effect of alkylimidazolium based ionic liquids on the structure of UV-irradiated cellulose. *Cellulose*. (2011), Vol.18, Nr.6, pag. 1469–79. **WOS: 000298994200009** [link](#) FI 5,044
5. **Croitoru C**, Patachia S, Cretu N, Boer A, Friedrich C. Influence of ionic liquids on the surface properties of poplar veneers. *Applied Surface Science* (2011), Vol.257, Nr.14, pag. 6220–25. **WOS: 000288646900050** [link](#) FI 6,707
6. Patachia S, **Croitoru C**. Imprinted poly (vinyl alcohol) as a promising tool for xanthine derivatives separation. *Journal of Applied Polymer Science* (2011), Vol. 122, Nr. 3, pag. 2081–9. **WOS: 000293849200072** [link](#) FI 3,125
7. Patachia S, Friedrich C, Florea C, Croitoru C. Study of the PVA hydrogel behaviour in 1-butyl-3-methylimidazolium tetrafluoroborate ionic liquid. *Express Polymer Letters* (2011), Vol.5, Nr.2, pag. 197–207. **WOS: 000285847000009** [link](#) FI 4,161
8. Patachia S, **Croitoru C**. Increasing the adsorption capacity and selectivity of poly(vinyl alcohol) hydrogels by an alternative imprinting technique. *Journal of Applied Polymer Science* (2015), Vol. 132, Nr. 23, pag. 42024–42033. **WOS: 000351392700008** [link](#) FI 3,125
9. **Croitoru C**, Patachia S, Lunguleasa A. A mild method of wood impregnation with biopolymers and resins using 1-ethyl-3-methylimidazolium chloride as carrier. *Chemical Engineering Research and Design* (2015), Vol. 93, pag. 257–268. **WOS: 000348878600024** [link](#) FI 3,739
10. **Croitoru C**, Patachia S, Lunguleasa A. New method of wood impregnation with inorganic compounds using ethyl methylimidazolium chloride as carrier. *Journal of Wood Chemistry and Technology* (2015), Vol. 35, Nr.2, pag. 35: 113–128. **WOS: 000345585100003** [link](#) FI 2,63

11. **Croitoru C**, Patachia S, Papancea A, Baltas L, Tierean M. Glass fibres reinforced polyester composites degradation monitoring by surface analysis. *Applied Surface Science* (2015), Vol. 358B, pag. 518-524. **WOS: 000366220500003** [link](#) FI 6,707
12. Stanciu EM, Pascu A, Tierean MH, Voiculescu I, Roată IC, **Croitoru C**, Hulka I. Dual Coating Laser Cladding of NiCrBSi and Inconel 718. *Materials and Manufacturing Processes* (2016), Vol. 31, Nr. 12, pag. 1556-1564. **WOS: 000381388400003** [link](#) FI 4,616
13. **Croitoru C**, Patachia S. Long-Chain Alkylimidazolium Ionic Liquid Functionalization of Cellulose Nanofibers and Their Embedding in HDPE Matrix. *International Journal of Polymer Science* (2016), Vol. 2016, pag. 1-9. **WOS: 000379547000001** [link](#) FI 2,642
14. Pascu A, Stanciu EM, Savastru D, Geanta V, **Croitoru C**. Optical and microstructure characterisation of ceramic – Hydroxyapatite coating fabricated by laser cladding. *J Optoelectron Adv Mater* (2017), Vol.19, Nr.1-2, pag. 66-72. **WOS: 000400880700010** [link](#) FI 0,587
15. **Croitoru C**, Spirchez C, Lunguleasa A, Cristea D, Roata IC, Pop MA, Bedo T, Stanciu EM, Pascu A. Surface properties of thermally treated composite wood panels. *Applied Surface Science* (2018), Vol. 438, pag.114-26. **WOS: 000425731200013** [link](#) FI 6,707
16. Stanciu EM, Pascu A, Roată IC, **Croitoru C**, Tierean M, Rosca JM, Hulka I. Solar radiation synthesis of functional carbonaceous materials using Al₂O₃/TiO₂-Cu-HA doped catalyst. *Applied Surface Science* (2018), Vol. 438, pag. 33-40. **WOS: 000425731200005** [link](#) FI 6,707
17. Ghiuță I, Cristea D, **Croitoru C**, Kost J, Wenkert R, Vyrides I, Anayiotos A, Munteanu D. Characterization and antimicrobial activity of silver nanoparticles, biosynthesized using *Bacillus* species. *Applied Surface Science* (2018), Vol. 438, pag. 66-73. **WOS: 000425731200005** [link](#) FI 6,707
18. Oláh A, **Croitoru C**, Tierean MH. Surface properties tuning of welding electrode-deposited hardfacings by laser heat treatment. *Applied Surface Science* (2018), Vol. 438, pag. 41-50. **WOS: 000425731200006** [link](#) FI 6,707
19. **C. Croitoru**. A durability assessment and structural characterization of biopolymer-impregnated wood. *Drewno* (2018), Vol. 61, Nr. 202, pag. 129-143. **WOS: 000454435100009** [link](#) FI 1,2
20. **Croitoru C**, Spirchez C, Cristea D, Lunguleasa A, Pop MA, Bedo T, Roata IC, Luca MA. Calcium carbonate and wood reinforced hybrid PVC composites. *Journal of Applied Polymer Science* (2018), Vol.135, Nr.22, Nr. articol. 46317. **WOS: 000426508700017** [link](#) FI 3,125
21. Roata IC, **Croitoru C**, Pascu A, Stanciu EM. Photocatalytic performance of copper-based coatings deposited by thermal spraying. *Journal of Materials Science: Materials in Electronics* (2018), Vol. 29, Nr. 13, pag. 11345-57. **WOS: 000435588600069** [link](#) FI 2,478

22. Roata IC, **Croitoru C**, Pascu A, Stanciu EM. Characterization of physically crosslinked ionic liquid-lignocellulose hydrogels. *BioResources*. (2018), Vol. 13, Nr. 3, pag. 6110-6121 . **WOS: 000440506300095** [link](#) FI 1,614
23. Croitoru C, Varodi AM, Timar MC, Roata IC, Stanciu EM, Pascu A. Wood-plastic composites based on HDPE and ionic liquid additives. *Journal of Materials Science* (2018), Vol. 53, Nr. 6, pag. 4132-43. **WOS: 000418294200017** [link](#) FI 4,22
24. Pascu A, Stanciu EM, **Croitoru C**, Roată IC, Tierean MH. Carbon Nanoparticle-Supported Pd Obtained by Solar Physical Vapor Deposition. *Adv Mater Sci Eng* (2018), Vol. 2018, Nr. articol 4730192. **WOS: 000426193300001** [link](#) FI 1,726
25. Stanciu EM, Pascu A, Tierean MH, Roata IC, Voiculescu I, Hulka I, **Croitoru C**. Dissimilar laser welding of AISI 321 and AISI 1010. *Tehnicky Vjesnik-Technical Gazette*, (2018), Vol. 25, Nr. 2, pag. 344-349. **WOS: 000430936800006** [link](#) FI 0,783
26. Roata IC, **Croitoru C**, Pascu A, Stanciu EM. Photocatalytic coatings via thermal spraying: A mini-review. *AIMS Mater Sci* (2019), Vol. 6, Nr.3. **WOS: 000471016400003** [link](#) FI 0
27. Cristea D, Cunha L, Gabor C, Ghiuta I, **Croitoru C**, Marin A, Velicu L, Besleaga A, Vasile B. Tantalum oxynitride thin films: Assessment of the photocatalytic efficiency and antimicrobial capacity. *Nanomaterials* (2019), Vol. 9, Nr. 3. **WOS:000464450100003** [link](#) FI 5,076
28. Pop MA, **Croitoru C**, Bedo T, Geaman V, Radomir I, Cosnita M, Zaharia SM, Chicos LA, Milosan I. Structural changes during 3D printing of bioderived and synthetic thermoplastic materials. *Journal of Applied Polymer Science* (2019), Vol.136, Nr. 17, Nr. articol 47382. **WOS: 000456861100001** [link](#) FI 3,125
29. Lunguleasa A, Ayrilmis N, Spirchez C, **Croitoru C**. Increasing the calorific properties of sawdust waste from pellets by torrefaction. *BioResources* (2019), Vol. 14, Nr.4. **WOS: 000493997400017** [link](#) FI 1,614
30. Feldiorean D, Cristea D, Tierean M, **Croitoru C**, Gabor C, Jakab-Farkas L, Cunha L, Barradas NP, Alves E, Craciun V, Marin A, Moura C, Leme J, Socol M, Craciun D, Cosnita M, Munteanu D. Deposition temperature influence on the wear behaviour of carbon-based coatings deposited on hardened steel. *Applied Surface Science* (2019), Vol. 475, pag. 762-773. **WOS: 000458482100090** [link](#) FI 6,707
31. Luca MA, Tierean MH, Machedon Pisu T, Rodriguez J, **Croitoru C**. The influence of concentrated solar energy flux on the structure and properties of stainless steel brazed joints. *Journal of Thermal Analysis and Calorimetry* (2020), Vol.141, Nr. 4, pag. 1291-1304. **WOS: 000500853500007** [link](#) FI 4,626

32. Pascu A, Stanciu EM, Croitoru C, Roată IC, Rosca JM, Nicanor C, Tierean MH, Bogatu C. Pulsed laser cladding of NiCrBSiFeC hardcoatings using single-walled carbon nanotube additives. *Journal of Nanomaterials* (2019), Vol. 2019, ID articol: 2401295. **WOS: 000487080800001** [link](#) FI 2,986
33. **Croitoru C**, Roata IC. Ionic liquids as antifungal agents for wood preservation. *Molecules*, Vol. 25, Nr. 18, 4289. **WOS: 000580097000001** [link](#) FI 4,411
34. **Croitoru C**, Roata IC, Pascu A, Stanciu EM. Diffusion and controlled release in physically crosslinked poly (vinyl alcohol)/iota-carrageenan hydrogel blends. *Polymers (Basel)* (2020), Vol. 12, Nr. 7, 1544. **WOS: 000558033000001** [link](#) FI 4,329
35. **Croitoru C**, Roata IC, Pascu A, Stanciu EM, Hulka I, Stoian G, Lupu N. Photocatalytic surfaces obtained through one-step thermal spraying of titanium. *Applied Surface Science* (2020), 504, 144173. **WOS: 000502040600179** [link](#) FI 6,707
36. Pop MA, **Croitoru C**, Bedo T, Geamăn V, Radomir I, Zaharia SM, Chicos L. Influence of internal innovative architecture on the mechanical properties of 3D polymer printed parts. *Polymers (Basel)*, (2020), Vol. 12, Nr. 5. **WOS: 000541431100134** [link](#) FI 4,329
37. Roata IC, **Croitoru C**, Pascu A, Stanciu EM, Hulka I, Petre I, Gabor C, Patroi D, Sbarcea BG. Surface engineering of Ni-Al coatings through concentrated solar heat treatment. *Applied Surface Science* (2020), Vol. 506, 144185. **WOS: 000512983600137** [link](#) FI 6,707
38. **Croitoru C**, Pop MA, Bedo T, Cosnita M, Roata IC, Hulka I. Physically crosslinked poly (vinyl alcohol)/kappa-carrageenan hydrogels: Structure and applications. *Polymers (Basel)* (2020), Vol. 12, Nr. 3. **WOS: 000525952000059** [link](#) FI 4,329
39. Tiss, B.; Moualhi, Y.; Bouguila, N.; Kraini, M.; Alaya, S.; **Croitoru, C.**; Ghiuta, I.; Cristea, D.; Patroi, D.; Moura, C.; Alaya, S. Influence of the physical properties on the antibacterial and photocatalytic behavior of Ag-doped indium sulfide film deposited by spray pyrolysis. *Coatings* (2021), Vol. 11(4), articol nr. 370. **WOS: 000642934600001** [link](#) FI 2,881
40. Tiss, B.; Fradj, A. Ben; Bouguila, N.; Cristea, D.; Croitoru, C.; Kraini, M.; Vázquez-Vázquez, C.; Cunha, L.; Moura, C.; Alaya, S. Electrical Behavior and Photocatalytic Activity of Ag-Doped In₂S₃ Thin Films. *Journal of Electronic Materials* (2021), Vol. 50, Nr. 6, 3739-3747. **WOS: 000640473000008** [link](#) FI 1,938
41. Baltés, L.S.; Patachia, S.; Ekincioglu, O.; Ozkul, H.; **Croitoru, C.**; Munteanu, C.; Istrate, B.; Tierean, M.H. Polymer-Cement Composites Glazing by Concentrated Solar Energy. *Coatings* (2021), Vol. 11, Nr. 3, articol nr. 350. **WOS: 000633596300001** [link](#) FI 2,881
42. Ghiuta, I.; **Croitoru, C.**; Kost, J.; Wenkert, R.; Munteanu, D. Bacteria-mediated synthesis of silver and silver chloride nanoparticles and their antimicrobial activity. *Applied Sciences-Basel* (2021), Vol. 11, Nr. 7, articol nr. 137. **WOS: 000638317400001** [link](#) FI 2,679

43. Tiss, B.; Benfraj, M.; Bouguila, N.; Kraini, M.; Alaya, S.; Cristea, D.; **Croitoru, C.**; Craciun, V.; Craciun, D.; Prepelita, P.; Velicu, I.L.; Tiron, V.; Moura, C.; Cunha, L. The effect of vacuum and air annealing in the physical characteristics and photocatalytic efficiency of $\text{In}_2\text{S}_3\text{:Ag}$ thin films produced by spray pyrolysis. *Materials Chemistry and Physics* (2021), Vol. 270, articol nr. 124838. **WOS:000671215400001** [link](#) FI 4,094
44. D Cristea, C Croitoru, A Marin, M Dobromir, EL Ursu, IL Velicu, V Tiron, V Craciun, L Cunha. On the chemistry, photocatalytic, and corrosion behavior of co-sputtered tantalum and titanium oxynitride thin films. *Applied Surface Science* (2022) 592, 153260 FI 6,70 **WOS:000807355500004**
45. M Toumi, B Tiss, N Bouguila, D Cristea, C Croitoru, I Ghiuta, AH Marin, IL Velicu, V Tiron, V Craciun, M Kraini, S Alaya, C Moura, L Cunha. Chlorine doping impact on the photocatalytic and antibacterial activity of sprayed In_2S_3 films. *Surface Innovations* 40 (2022), 1-13. FI 3,5 **WOS:000855752400001**
46. C Croitoru, IC Roata, T Machedon-Pisu, A Olah. Austenitic Stainless Steel as a Catalyst Material for Photo-Fenton Degradation of Organic Dyes, *Applied Sciences* (2022) 12 (3), 1008 FI 2,7 **WOS:000759842400001**
47. I Uncu, IC Roata, C Croitoru, T Machedon-Pisu. Visible Domain Photocatalysis Performance of Ti-Si Thermal-Sprayed Coatings. *Sustainability* (2022)14 (1), 85. FI 3,9 **WOS:000752660700001**
48. ER Moldovan, C Concheso Doria, JL Ocaña Moreno, LS Baltes, EM Stanciu, C Croitoru, A Pascu, MH Tiorean. Geometry Characterization of AISI 430 Stainless Steel Microstructuring Using Laser. *Archives of Metallurgy and Materials* (2022) 67. FI 0,6 **WOS:000813491700008**
49. ER Moldovan, C Concheso Doria, JL Ocaña, LS Baltes, EM Stanciu, C Croitoru, A Pascu, IC Roata, MH Tiorean. Wettability and surface roughness analysis of laser surface texturing of AISI 430 stainless steel. *Materials* (2022) 15 (8), 2955. FI 3,4 **WOS:000787465000001**
50. MA Pop, C Croitoru, T Bedo, V Geamăn, I Radomir, A Crișan, E Guillot, I Milosan, Zaharia SM, Chicos AL The Influence of Solar Sintering on Copper Heat Exchanger Parts with Controlled 3D-Printed Morphology. *Materials* (2022) 15 (9), 3324. FI 3,4 **WOS:000794752600001**
51. ER Moldovan, C Concheso Doria, JL Ocaña, B Istrate, N Cimpoesu, LS Baltes, EM Stanciu, C Croitoru, A Pascu, C Munteanu, MH Tiorean. Morphological Analysis of Laser Surface Texturing Effect on AISI 430 Stainless Steel. *Materials* (2022) 15 (13), 4580. FI 3,4 **WOS:000824045100001**
52. D Cristea, AI Scărlătescu, C Croitoru, A Marin, IL Velicu, V Tiron, D Martínez-Martínez, CI da Silva Oliveira, L Cunha. Photocatalytic and corrosion behavior of sputtered zirconium oxynitride thin films doped with titanium. *Surfaces and Interfaces* (2023), Vol. 42, Nr. Articol 103488. **WOS:001005765300001**

53. Zaharia, SM, Pop, MA, Cosnita, M, Croitoru, C, Matei, S, Spîrchez, C. Sound Absorption Performance and Mechanical Properties of the 3D-Printed Bio-Degradable Panels. *Polymers* (2023) 15(18), 3695. FI 5,0 **WOS:001072568300001**
54. Pop, MA, Cosnita, M, Croitoru, C, Zaharia, SM, Matei, S, Spîrchez, C. 3D-Printed PLA Molds for Natural Composites: Mechanical Properties of Green Wax-Based Composites. *Polymers* 15 (2023) (18), 3695. FI 5,0 **WOS:001005765300001**
55. EM Stanciu, A Pascu, C Croitoru, IC Roată, D Cristea, MH Tiorean, I Hulka, IM Petre, JC Mirza-Rosca. Functional Surfaces via Laser Processing in Nickel Acetate Solution. *Materials* (2023)16 (8), 3087. FI 3,4 **WOS:000976464500001**
56. MI Lupu, CM Canja, V Padureanu, A Boieriu, A Maier, C Badarau, C. Padureanu, C. Croitoru, E Alexa, MA Poiana. Insights on the Potential of Carob Powder (*Ceratonia siliqua* L.) to Improve the Physico-Chemical, Biochemical and Nutritional Properties of Wheat Durum Pasta. *Applied Sciences* (2023) 13 (6), 3788. FI 2,7 **WOS:000957441100001**
57. Matei S, Pop MA, Zaharia SM, Coșniță M, Croitoru C, Spîrchez C, et al. Investigation into the Acoustic Properties of Polylactic Acid Sound-Absorbing Panels Manufactured by 3D Printing Technology: The Influence of Nozzle Diameters and Internal Configurations. *Materials*. 2024 Jan 25;17(3):580. FI 3,1 **WOS:001160043000001**
58. Croitoru C, Roata IC. Ionic Liquids as Reconditioning Agents for Paper Artifacts. *Molecules*. 2024 Feb 22;29(5):963. FI 4,2 **WOS:001183080300001**
59. Pop MA, Croitoru C, Matei S, Zaharia SM, Coșniță M, Spîrchez C. Thermal and Sound Insulation Properties of Organic Biocomposite Mixtures. *Polymers (Basel)*. 2024 Mar 1;16(5):672. FI 4,7 **WOS:001182946900001**
60. Luca MA, Roata IC, Croitoru C, Todi-Eftimie AL. Vibration-Assisted Welding of 42CrMo4 Steel: Optimizing Parameters for Improved Properties and Weldability. *Materials*. 2024 Jun 3;17(11):2708. FI 3,1 **WOS:001245712000001**
61. Ioan Plamadiala, CROITORU CĂTĂLIN, POP MIHAI ALIN, ROATĂ IONUȚ CLAUDIU. (2025). Enhancing Polylactic Acid (PLA) Performance: A Review of Additives in Fused Deposition Modelling (FDM) Filaments. *Polymers*, (17)(2). <https://doi.org/10.3390/polym17020191>

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Prof. dr. chim. Cătălin Croitoru