

List of publications and results in 2021

Significant results

Impacted Journals Articles – published, accepted:

1. Perná I., Novotná M., Šupová M., Hanzlíček T. (2021): Beach Sand – an Alternative Filler in Metakaolin-Based Geopolymers. *Journal of Materials in Civil Engineering* 33(4), 04021017-1 - 04021017-6. doi: 10.1061/(ASCE)MT.1943-5533.0003641
2. Perná I., Novotná M., Řimnáčová D., Šupová M. (2021): New metakaolin-based geopolymers with the addition of different types of waste stone powder. *Crystals* 11(8), 983. doi: 10.3390/cryst11080983
3. Straka P. (2021): A comprehensive study of Power-to-Gas technology: Technical implementations overview, economic assessments, methanation plant as auxiliary operation of lignite-fired power station. *Journal of Cleaner Production* 311, 127642. doi: 10.1016/j.jclepro.2021.127642
4. Moško J., Pohořelý M., Skoblia S., Fajgar R., Straka P., Soukup K., Beňo Z., Farták J., Bičáková O., Jeremiáš M., Šyc M., Meers E. (2021): Structural and chemical changes of sludge derived pyrolysis char prepared under different process temperatures. *Journal of Analytical and Applied Pyrolysis* 156, 105085. doi: 10.1016/j.jaap.2021.105085
5. Černý M., Chlup Z., Strachota A., Brus J., Schweigstillová J., Rýglová Š., Bičáková O. (2021): In-situ measurement of mechanical properties and dimensional changes of preceramic thermosets during their pyrolysis conversion to ceramics using thermomechanical analysis. *Ceramics International* 47, 23285–23294. doi: 10.1016/j.ceramint.2021.05.041
6. Kříbek B., Bičáková O., Sýkorová I., Havelcová M., Veselovský F., Knésl I., Mészáros N. (2021): Experimental pyrolysis of metalliferous coal: A contribution to the understanding of pyrometamorphism of organic matter and sulfides during coal waste heaps fires. *International Journal of Coal Geology* 245, 103817. doi: 10.1016/j.coal.2021.103817
7. Kostka P., Yatskiv R., Grym J., Zavadil J. (2021): Luminescence, up-conversion and temperature sensing in Er-doped TeO₂-PbCl₂-WO₃ glasses. *Journal of Non-Crystalline Solids* 553, 120287. <https://doi.org/10.1016/j.jnoncrysol.2020.120287> (GAČR 19-07456S, RVO 67985891)
8. Yatskiv R., Kostka P., Grym J., Zavadil J. (2022): Temperature sensing down to 4 K with erbium doped tellurite glasses. *Journal of Non-Crystalline Solids* 575, 121183. <https://doi.org/10.1016/j.jnoncrysol.2021.121183> (GAČR 19-07456S)

9. Bošák O., Kubliha M., Kostka P., Minarik S., Domankova M., Le Coq D. (2021): Electrical and Dielectric Properties of Sb₂O₃–PbCl₂–AgCl Glass System. *Russian Journal of Electrochemistry* 57(7) 681–687. doi: 10.1134/S1023193521070041
10. Kubliha M., Bošák O., Kostka P., Labas V., Lukic-Petrovic S., Celic N., Tanuska P., Kebisek M., Soltani M. T. (2021): Experimental and Simulation of Electric Transport in Alkali Antimonite Glasses. *Russian Journal of Electrochemistry* 57(7) 688–699. doi: 10.1134/S1023193521070077
11. Ueda N., Vernerová M., Kloužek J., Ferkl P., Hrma P., Yano T., Pokorný R. (2021): Conversion kinetics of container glass batch melting. *Journal of the American Ceramic Society* 104(1), 34-44. doi: 10.1111/jace.17406
12. Marcial J., Pokorný R., Kloužek J., Vernerová M., Lee S., Hrma P., Kruger A. (2021): Effect of water vapor and thermal history on nuclear waste feed conversion to glass. *International Journal of Applied Glass Science* 12(1), 145-157. doi: 10.1111/ijag.15803
13. Ferkl P., Hrma P., Kloužek J., Vernerová M., Kruger A., Pokorný R. (2021): Model for batch-to-glass conversion: Coupling the heat transfer with conversion kinetics. *Journal of Asian Ceramic Societies* 9(2), 652-664. doi: 10.1080/21870764.2021.1907914
14. Lee S., Cutforth D., Mar D., Kloužek J., Ferkl P., Dixon D., Pokorný R., Hall M., Eaton W., Hrma P., Kruger A. (2021): Melting rate correlation with batch properties and melter operating conditions during conversion of nuclear waste melter feeds to glasses. *International Journal of Applied Glass Science* 12(3), 398-414. doi: 10.1111/ijag.15911
15. Luksic S., Pokorný R., Hrma P., Varga T., Rivers E., Buchko A., Kloužek J., Kruger A. (2021): Through a glass darkly: In-situ x-ray computed tomography imaging of feed melting in continuously fed laboratory-scale glass melter. *Ceramics International* 47(11), 15807-15818. doi: 10.1016/j.ceramint.2021.02.153
16. Abboud A., Guillen D., Hrma P., Kruger A., Klouzek J., Pokorny R. (2021): Heat Transfer from Glass Melt to Cold Cap: Computational Fluid Dynamics Study of Cavities beneath Cold Cap. *International Journal of Applied Glass Science* 12(2), 233-244. doi: 10.1111/ijag.15863
17. Jebavá M., Hrbek L., Cincibusová P., Němec L. (2021): Energy distribution and melting efficiency in glass melting channel: Effect of configuration of heating barriers and vertical energy distribution. *Journal of Non-Crystalline Solids* 562, 120776. doi: 10.1016/j.jnoncrysol.2021.120776

Reviewed Journal Articles:

18. Straka P., Bičáková O., Čimová N. (2021): Low-temperature treatment of waste PET. *Paliva 13(1)* 1-9. doi: 10.35933/paliva.2021.01.01
19. Bošák O., Kubliha M., Kostka P., Minarik S., Domankova M., Le Coq D. (2021): ЭЛЕКТРИЧЕСКИЕ И ДИЭЛЕКТРИЧЕСКИЕ СВОЙСТВА СТЕКОЛ СИСТЕМЫ Sb₂O₃-PbCl₂-AgCl. ЭЛЕКТРОХИМИЯ 57(7), 382–389. doi: 10.31857/S0424857021070045
20. Kubliha M., Bošák O., Kostka P., Labas V., Lukic-Petrovic S., Celic N., Tanuska P., Kebisek M., Soltani M. T. (2021): ЭКСПЕРИМЕНТАЛЬНОЕ ИССЛЕДОВАНИЕ И МОДЕЛИРОВАНИЕ ЭЛЕКТРИЧЕСКОГО ТРАНСПОРТА В ЩЕЛОЧНЫХ АНТИМОНИТНЫХ СТЕКЛАХ. ЭЛЕКТРОХИМИЯ 57(7), 390–401. doi: 10.31857/S0424857021070070

Patent

21. Němec Lubomír (ÚSMH), Jebavá Marcela (ÚSMH), Cincibusová Petra (ÚSMH), Budík Pavel (Glass Service, a.s.)

Glass melting furnace with conversion region for batch to glass conversion and method of conversion

Patent no.: CZ 308 684

<https://isdv.upv.cz/doc/FullFiles/Patents/FullDocuments/308/308684.pdf>