

Seznam publikací vytvořených v rámci NanoEnviCz za rok 2018

1. V. V. T. Padil, S. Waclawek, M. Černík, R. S. Varma: Tree gum-based renewable materials: Sustainable applications in nanotechnology, biomedical and environmental fields, *Biotechnol. Adv.*, **36** (7) (2018) 1984–2016.
2. D. Silvestri, S. Waclawek, B. Sobel, R. Torres-Mendieta, V. Novotný, N. H. A. Nguyen, A. Ševců, V. V. T. Padil, J. Müllerová, M. Stuchlík, M. Petrangeli Papini, M. Černík, R. S. Varma: A poly(3-hydroxybutyrate)–chitosan polymer conjugate for the synthesis of safer gold nanoparticles and their applications, *Green Chem.*, **20** (21) (2018) 4975–4982.
3. M. Esquivel-Gaon, N. H. A. Nguyen, M. F. Sgroi, D. Pullini, F. Gili, D. Mangherini, A. I. Pruna, P. Rosicka, A. Sevcu, V. Castagnola: In vitro and environmental toxicity of reduced graphene oxide as an additive in automotive lubricants, *Nanoscale*, **10** (14) (2018) 6539–6548.
4. J. Kovacik, V. Antos, G. Micalizzi, S. Dresler, P. Hrabák, L. Mondello: Accumulation and toxicity of organochlorines in green microalgae, *J. Hazard. Mater.*, **347** (2018) 168–175.
5. N. H. A. Nguyen, R. Špánek, V. Kasalický, D. Ribas, D. Vlková, H. Řeháková, P. Kejzlara, A. Ševců: Different effects of nano-scale and micro-scale zero-valent iron particles on planktonic microorganisms from natural reservoir water, *Environ. Sci.-Nano*, **5** (5) (2018) 1117–1129.
6. J. Němeček, J. Steinová, R. Špánek, T. Pluhař, P. Pokorný, P. Najmanová, V. Knytl, M. Černík: Thermally enhanced in situ bioremediation of groundwater contaminated with chlorinated solvents - A field test, *Sci. Total Environ.*, **622** (2018) 743–755.
7. M. Assis, E. Cordoncillo, R. Torres-Mendieta, H. Beltrán-Mir, G. Mínguez-Vega, R. Oliveira, E. R. Leite, C. C. Foggi, C. E. Vergani, E. Longo, J. Andrés: Towards the scale-up of the formation of nanoparticles on alpha-Ag₂WO₄ with bactericidal properties by femtosecond laser irradiation, *Sci. Rep.*, **8** (2018) 1884.
8. M. Assis, E. Cordoncillo, R. Torres-Mendiet, H. Beltrán-Mir, G. Mínguez-Veg, A. F. Gouveia, E. Leite, J. Andrés, E. Longoa: Laser-induced formation of bismuth nanoparticles, *Phys. Chem. Chem. Phys.*, **20** (20) (2018) 13693–13696.
9. N. H. A. Nguyen, N. R. Von Moos, V. I. Slaveykova, K. Mackenzie, R. U. Meckenstock, S. Thümmel, J. Bosch, A. Ševců: Biological effects of four iron-containing nanoremediation materials on the green alga *Chlamydomonas* sp., *Ecotoxicol. Environ. Saf.*, **154** (2018) 26–44.
10. N. H. A. Nhung, V. V. T. Padil, V. Slaveykova, M. Cernik, A. Ševců: Green Synthesis of Metal and Metal Oxide Nanoparticles and Their Effect on the Unicellular Alga *Chlamydomonas reinhardtii*, *Nanoscale Res. Lett.*, **13** (2018) 159.
11. Gruebel K., Waclawek S., Machnicka A., Nowicka E.: Synergetic disintegration of waste activated sludge: improvement of the anaerobic digestion and hygienization of sludge, *J. Environ. Sci. Health Part -ToxicHazardous Subst. Environ. Eng.*, **53** (12) (2018) 1067–1074.
12. J. Trögl, C. O. Esuola, S. Kříženecká, P. Kuráň, L. Seidlová, P. Veronesi-Dáňová, J. Popelka, O. O. Babalola, P. Hrabák, M. Czimmerová, E. Kakosová, A. Ševců, D. Tischler: Biodegradation of High Concentrations of Aliphatic Hydrocarbons in Soil from a Petroleum Refinery: Implications for Applicability of New Actinobacterial Strains, *Appl. Sci.*, **8** (10) (2018) 1855.

13. J. Horakova, P. Mikes, A. Saman, V. Jencova, A. Klapstova, T. Svarcova, M. Ackermann, V. Novotny, T. Suchy, D. Lukas: The effect of ethylene oxide sterilization on electrospun vascular grafts made from biodegradable polyesters, *Mater. Sci. Eng. C-Mater. Biol. Appl.*, **92** (2018) 132–142.
14. M. Assis, N. G. Macedo, T. R. Machado, M. M. Ferrer, A. F. Gouveia, E. Cordocillo, R. Torres-Mendieta, H. Beltrán-Mir, G. Mínguez-Vega, E. R. Leite, J. R. Sambrano, J. Andrés, E. Longo: Laser/Electron Irradiation on Indium Phosphide (InP) Semiconductor: Promising Pathways to In Situ Formation of Indium Nanoparticles, *Part. Part. Syst. Charact.*, **35** (11) (2018) 1800237.
15. N. Petkov, T. Bakalova, H. Bahchedzhiev, P. Louda, P. Kejzlar, P. Capkova, M. Kormunda, P. Rysanek: Cathodic Arc Deposition of TiCN Coatings - Influence of the C₂H₂/N₂ Ratio on the Structure and Coating Properties, *J. Nano Res.*, **51** (2018) 78–91.
16. H. Libalova, P. Rossner Jr., K. Vrbova, T. Brzicova, J. Sikorova, M. Vojtisek-Lom, V. Beranek, J. Klema, M. Ciganek, M. Machala, J. Topinka: Transcriptional response to organic compounds from diverse gasoline and biogasoline fuel emissions in human lung cells, *Toxicol. in Vitro*, **48** (2018) 329-341.
17. K. Honkova, A. Rossnerova, J. Pavlikova, V. Svecova, J. Klema, J. Topinka, A. Milcova, H. Libalova, H. Choi, M. Veleminsky, R. J. Sram, P. Rossner Jr.: Gene Expression Profiling in Healthy Newborns from Diverse Localities of the Czech Republic, *Environ. Mol. Mutagen.*, **59** (2018) 401-415.
18. I. Rynning, J. Neca, K. Vrbova, H. Libalova, P. Rossner, J. A. Holme, K. B. Gützkow, A. K. J. Afanou, Z. J. Arnoldussen, E. Hrubá, O. Skare, A. Haugen, J. Topinka, M. Machala, S. Mollerup: In vitro transformation of human bronchial epithelial cells by diesel exhaust particles, *Toxicol. Sci.*, **166** (2018) 51-64.
19. T. Brzicova, J. Sikorova, A. Milcova, K. Vrbova, J. Klema, P. Pikale, Z. Lubovska, V. Philimonenko, F. Franco, J. Topinka, P. Rossner Jr.: Nano-TiO₂ stability in medium and size as important factors of toxicity in macrophage-like cells, *Toxicol. in Vitro*, **54** (2018) 178–188.
20. P. Rossner Jr., K. Vrbova, S. Strapacova, A. Rossnerova, A. Ambroz, T. Brzicova, H. Libalova, E. Javorkova, P. Kulich, Z. Vecera, P. Mikuska, P. Coufalik, K. Krumal, L. Capka, B. Docekal, P. Moravec, O. Sery, I. Misek, P. Fictum, K. Fiser, M. Machala, and J. Topinka: Inhalation of ZnO nanoparticles: splice junction expression and alternative splicing in mice, *Toxicol. Sci.*, 2018 (accepted manuscript).
21. I. Rynning, V. M. Arlt, K. Vrbova, J. Neca, P. Rossner Jr., J. Klema, B. Ulvestad, E. Petersen, Q. Skare, A. Haugen, D. H. Phillips, M. Machala, J. Topinka, S. Mollerup: Bulky DNA adducts, microRNA profiles, and lipid biomarkers in Norwegian tunnel finishing workers occupationally exposed to diesel exhaust, *Occup. Environ. Med.*, **76** (2019) 10-16.
22. Z. Barbieriková, E. Pližingrová, M. Motlochová, P. Bezdička, J. Boháček, D. Dvoranová, M. Mazúr, J. Kupčík, J. Jirkovský, J. Šubrt, J. Krýsa, V. Brezová: N-doped titanium dioxide nanosheets: Preparation, characterization and UV/visible-light activity, *Appl. Catal. B: Environmental*, **232** (2018) 397-408.
23. M. Motlochová, V. Slovák, E. Pližingrová, M. Klementová, P. Bezdička, J. Šubrt: Thermal decomposition study of nanostructured amorphous lithium, sodium and potassium metatitanates, *Thermochim. Acta*, **670** (2018) 148-154.
24. A. Michalcová, I. Marek, A. Knaislová, Z. Sofer, D. Vojtěch: Phase transformation induced self-healing behavior of Al-Ag alloy, *Materials*, **11** (2) (2018) 199-204.

25. J. Buršík, R. Uhrecký, M. Sobotka, R. Kužel, J. Prokleška: The hexaferrite $\text{Sr}_3\text{Co}_2\text{Fe}_{24}\text{O}_{41}$ thin films by chemical solution deposition method: Synthesis and characterization, *J. Magn. Magn. Mater.*, **469** (2019) 245-252.
26. M. Liegertová, D. Wrobel, R. Herma, M. Müllerová, L. Č. Šťastná, P. Cuřínová, T. Strašák, M. Malý, J. Čermák, J. Smejkal, M. Štofík, J. Maly, Evaluation of toxicological and teratogenic effects of carbosilane glucose glycodendrimers in zebrafish embryos and model rodent cell lines, *Nanotoxicology*, **12** (2018) 797-818.
27. M. Benkocka, K. Kolarova, J. Matousek, A. Semeradtova, V. Sicha, Z. Kolska: Nanocomposite of polystyrene foil grafted with metallaboranes for antimicrobial activity, *Appl. Surf. Sci.*, **441** (2018), 120-129.
28. Z. Kolska, R. Polansky, P. Prosr, M. Zemanova, P. Rysanek, P. Slepicka, V. Svorcik. Properties of polyamide nanofibers treated by UV-A radiation, *Mater. Lett.*, **214** (2018), 264-267.
29. M. Benkocka, S. Lupinkova, J. Matousek, K. Kolarova, Z. Kolska: Antimicrobial and optical properties of PET chemically modified and grafted with borane compounds., *RSC Advances*, **8** (27) (2018) 15001-15008.
30. M. Benkocká, S. Lupínková, T. Knapová, V. Svorcik, J. Matousek, Z. Kolska: Antimicrobial and Photophysical Properties of Chemically Grafted Ultra-high-molecular-weight Polyethylene, accepted in: *Mater. Sci. Eng. C*, **96** (2019) 479-486.
31. A. Semeradtova, M. Štofík, L. Vankova, P. Maly, O. Stanek, J. Maly: Optical microchips based on high-affinity recombinant protein binders—Human serum albumin detection in urine, *Sens. Actuators B Chem.*, **272** (2018) 441-447.
32. A. Semerádtová, M. Štofík, O. Neděla, O. Staněk, P. Slepíčka, Z. Kolská, J. Malý: A simple approach for fabrication of optical affinity-based bioanalytical microsystem on polymeric PEN foils, *Colloids Surf. B: Biointerfaces*, **165** (2018) 28-36.
33. D. Wrobel, R. Kubikova, M. Müllerová, T. Strašák, K. Růžička, M. Fulem, J. Maly: Phosphonium carbosilane dendrimers – interaction with a simple biological membrane model, *Phys. Chem. Chem. Phys.*, **20** (2018) 14753-14764.
34. J. Trögl, C. O. Escuela, S. Kříženecká, P. Kuráň, L. Seidlová, P. Veronesi-Dáňová, J. Popelka, O.O. Babalola, P. Hrabák, M. Czinnerová, Gl. Kakosová, E. Holcová, A. Ševců, D. Tischler: Biodegradation of high concentrations of aliphatic hydrocarbons in soil from a petroleum refinery: Implications for applicability of new actinobacterial strains, *Appl. Sci.*, **8** (2018) 1855-1866.
35. J. Kukla, M. Holec, J. Trögl, D. Holcová, D. Hofmanová, P. Kuráň, J. Popelka, J. Pacina, S. Kříženecká S. Usták, R. Honzík: Tourist Traffic Significantly Affects Microbial Communities of Sandstone Caves Sediments in the Protected Landscape Area “Labské Pískovce” (Czech Republic): Implications for Regulatory Measures, *Sustainability*, **10** (2) (2018) 396-409.
36. P. Praus, L. Svoboda, R. Dvorský, M. Relib, M. Kormunda, P. Mančík: Synthesis and properties of nanocomposites of WO_3 and exfoliated $g\text{-C}_3\text{N}_4$, *Ceram. Int.*, **43** (2017) 13581-13591.
37. J. Luňáček, O. Životský, P. Janoš, M. Došek, A. Chrobak, M. Maryško, J. Buršík, Y. Jirásková: Structure and magnetic properties of synthesized fine cerium dioxide nanoparticles, *J. Alloys Compd.*, **753** (2018) 167–175.

38. Y. Jiraskova, J. Bursik, O. Zivotsky J. Lunacek, P. Jano; Magnetic and Mössbauer study of cerium-based reactive sorbent, *Acta Phys. Pol. A.*, **131** (4) (2017) 1096-1098.
39. J. Stulik, R. Polansky, A. Hamacek, S. Nespurek, P. Slepicka, Z. Kolska, V. Svorcik: Comparison of organic thermistors based on PEDOT:PSS and PEDOT:tos thin films under various thermal and humidity conditions, *Sens. Actuators B Chem.*, **275** (2018) 359-366.
40. P. Capkova, M. Kormunda, Z. Kolska, J.Trögl, M. Munzarova and P. Rysanek: Electrospun Antimicrobial PVDF-DTAB Nanofibrous Membrane for Air Filtration: Effect of DTAB on Structure, Morphology, Adhesion, and Antibacterial Properties, *Macromol. Mater. Eng.*, **303** (2018) 1700415.
41. P. Ryšánek, P. Čapková, J. Štojdl, J. Trögl, O. Benada, M. Kormunda, Z. Kolská, M. Munzarová: Stability of antibacterial modification of nanofibrous PA6/DTAB membrane during air filtration, *Mater. Sci. Eng. C. Mater. Biol. Appl.* **96** (2019) 807-813.
42. M. Sánchez-Milla, I. Pastor, M. Maly, M. Jesús Serramía, Rafael Gómez, J. Sánchez-Nieves, F. Ritort, M. Ángeles Muñoz-Fernández, F. Javier de la Mata: Study of non-covalent interactions on dendriplex formation: Influence of hydrophobic, electrostatic and hydrogen bonds interactions, *Colloids Surf. B: Biointerfaces*, **162** (2018) 380–388.
43. S. Michlewsk, M. Ionov, M. Maroto-Díaz, A. Szwed, A. Ihnatsyeu-Kachan, S. Loznikova, D. Shcharbin, M. Maly, R. Gomez Ramirez, F. Javier de la Mata, M. Bryszewska: Ruthenium dendrimers as carriers for anticancer siRNA, *J. Inorg. Biochem.*, **181** (2018) 18–27.
44. I. Heredero-Bermejo, J. M. Hernández-Ros, L. Sánchez-García, M. Maly, C. Verdú-Expósito, J. Soliveri, F. Javier de la Mata, J. L. Copa-Patiño, J. Pérez-Serrano, J. Sánchez-Nieves, R. Gómez: Ammonium and guanidine carbosilane dendrimers and dendrons as Microbicides, *Eur. Polym. J.*, **101** (2018) 159–168.
45. P. Kyrystník, P. Mašín, Z. Krušinová, P. Klusoň: Application of electro-coagulation for removal of toxic metals from industrial effluents: *Int. J. Environ. Sci. Technol.*, published online 20 October 2018.
46. J. Gaalova, P. Kyrystník, P. Dytrych, P. Klusoň: Elimination of dissolved Fe³⁺ ions from water by electrocoagulation, *J. Sol-Gel Sci. Technol.*, **88** (1) (2018) 49-56.
47. P. Kyrystník, P. Mašín, P. Klusoň: Pilot scale application of UV/H₂O₂ for removal of polychlorinated hydrocarbons from industrial effluents, *J. Water Supply Res. Technol.*, **67** (4) (2018) 414-422.
48. T. Tsoncheva, A. Mileva, G. Issa, M. Dimitrova, D. Kovacheva, J. Henych, N. Scotti, M. Kormunda, G. Atanasova, V. Štengl: Template-assisted hydrothermally obtained titania-ceria composites and their application as catalysts in ethyl acetate oxidation and methanol decomposition with a potential for sustainable environment protection, *Appl. Surf. Sci.*, **396** (2017) 1289-1302.
49. D. Bůžek, J. Demel, K. Lang: Zirconium Metal–Organic Framework UiO-66: Stability in an Aqueous Environment and Its Relevance for Organophosphate Degradation, *Inorg. Chem.* **57** (2018) 14290–14297.
50. A. Panáček, L. Kvítek, M. Smékalová, R. Večeřová, M. Kolář, M. Röderová, F. Dyčka, M. Šebela, R. Pucek, O. Tomanec, R. Zbořil: Bacterial resistance to silver nanoparticles and how to overcome it, *Nat. Nanotechnol.*, **13** (1) (2018) 65–71.

51. J. Tuček, P. Błoński, O. Malina, M. Pumera, C. K. Chua, M. Otyepka, R. Zbořil: Morphology-Dependent Magnetism in Nanographene: Beyond Nanoribbons, *Adv. Funct. Mater.*, **28** (22) (2018) 1800592.
52. K. Jayaramulu, J. Masa, D. M. Morales, O. Tomanec, V. Ranc, M. Petr, P. Wilde, Y. Chen, R. Zbořil, W. Schuhmann, R. A. Fischer: Ultrathin 2D Cobalt Zeolite-Imidazole Framework Nanosheets for Electrocatalytic Oxygen Evolution, *Adv. Sci.*, **5** (11) (2018) 1801029.
53. V. Ranc, R. Žižka, Z. Chaloupková, J. Ševčík, R. Zbořil: Imaging of growth factors on a human tooth root canal by surface-enhanced Raman spectroscopy, *Anal. Bioanal. Chem.*, **410** (27) (2018) 7113-7120.
54. R. Kadam, M. Petr, R. Zbořil, R. V. Jayaram, M. B. Gawande: Hexagonal mesoporous silica supported ultra-small copper oxides for oxidative amidation of carboxylic acids, *ACS Sustain. Chem. Eng.*, **6** (10) (2018) 12935–12945.
55. O. Sracek, B. Kříbek, M. Mihaljevič, V. Ettler, A. Vaněk, V. Penížek, J. Filip, F. Veselovský, I. Nyambe: The impact of wetland on neutral mine drainage from mining wastes at Luanshya in the Zambian Copperbelt in the framework of climate change, *Environ. Sci. Pollut. Res.*, **25** (29) (2018) 28961-28972.
56. D. Nachtigallová, A. Antalík, R. Lo, R. Sedlak, D. Manna, J. Tuček, J. Ugolotti, L. Veis, Ö. Legeza, J. Pittner, R. Zbořil, P. Hobza: An Isolated Molecule of Iron(II) Phthalocyanin Exhibits Quintet Ground-State: A Nexus between Theory and Experiment, *Chem.-A Eur. J.*, **24** (51) (2018) 13413-13417.
57. Z. Chaloupková, A. Balzerová, Z. Medříková, J. Srovnal, M. Hajdúch, K. Čépe, V. Ranc, R. Zbořil: Label-free determination and multiplex analysis of DNA and RNA in tumor tissues, *Appl. Mater. Today*, **12** (2018) 85-91.
58. M. Komárek, J. Antelo, M. Králová, V. Veselská, S. Číhalová, V. Chrastný, V. Ettler, J. Filip, Q. Yue, J. B. Feine, C. M. Koretsky: Revisiting models of Cd, Cu, Pb and Zn adsorption onto Fe(III) oxides, *Chem. Geol.*, **493** (2018) 189-198.
59. D. Nandan, G. Zoppellaro, I. Medřík, C. Aparicio, P. Kumar, M. Petr, O. Tomanec, M. B. Gawande, R. S. Varma, R. Zbořil: Cobalt-entrenched N-, O-, and S-tridoped carbons as efficient multifunctional sustainable catalysts for base-free selective oxidative esterification of alcohols, *Green Chem.*, **20** (15) (2018) 3542-3556.
60. B. de la Torre, M. Švec, P. Hapala, J. Redondo, O. Krejčí, R. Lo, D. Manna, A. Sarmah, D. Nachtigallová, J. Tuček, P. Błoński, M. Otyepka, R. Zbořil, P. Hobza, P. Jelínek: Non-covalent control of spin-state in metal-organic complex by positioning on N-doped graphene, *Nat. Commun.*, **9** (2018) 2831.
61. A. Bakandritsos, D. D. Chronopoulos, P. Jakubec, M. Pykal, K. Čépe, T. Steriotis, S. Kalytchuk, M. Petr, R. Zbořil, M. Otyepka: High-Performance Supercapacitors Based on a Zwitterionic Network of Covalently Functionalized Graphene with Iron Tetraaminophthalocyanine, *Adv. Funct. Mater.*, **28** (29) (2018) 1801111.
62. D. Matochova, M. Medved, A. Bakandritsos, T. Stekly, R. Zboril, M. Otyepka: 2D Chemistry: Chemical Control of Graphene Derivatization, *J. Phys. Chem. Lett.*, **9** (13) (2018) 3580-3585.

63. P. Plachtová, Z. Medříková, R. Zbořil, J. Tuček, R. S. Varma, B. Maršálek: Iron and Iron Oxide Nanoparticles Synthesized with Green Tea Extract: Differences in Ecotoxicological Profile and Ability To Degrade Malachite Green, *ACS Sustain. Chem. Eng.*, **6** (7) (2018) 8679-8687.
64. X. Yang, J. Wang, S. Wang, H. Wang, O. Tomanec, C. Zhi, R. Zboril, D. Y. W. Yu, A. Rogach: Vapor-Infiltration Approach toward Selenium/Reduced Graphene Oxide Composites Enabling Stable and High-Capacity Sodium Storage, *ACS Nano*, **12** (7) (2018) 7397-7405.
65. Q. Li, J. P. Froning, M. Pykal, S. Zhang, Z. Wang, M. Vondrák, P. Banáš, K. Čépe, P. Jurečka, J. Šponer, R. Zbořil, M. Dong, M. Otyepka: RNA nanopatterning on graphene, *2D Mater.*, **5** (3) (2018) 031006.
66. A. Halder, M. Kilianová, B. Yang, E. C. Tyo, S. Seifert, R. Pucek, A. Panáček, P. Suchomel, O. Tomanec, D. J. Gosztola, D. Milde, H. Wang, L. Kvítek, R. Zbořil, S. Vajda: Highly efficient Cu-decorated iron oxide nanocatalyst for low pressure CO₂ conversion, *Appl. Catal. B: Environmental*, **225** (2018) 128-138.
67. V. Tangoulis, N. Lalioti, J. Parthenios, N. Boukos, O. Malina, J. Tuček, R. Zbořil: Noncovalent Grafting of a Dy-2(III) Single-Molecule Magnet onto Chemically Modified Multiwalled Carbon Nanotubes, *Inorg. Chem.*, **57** (11) (2018) 6391-6400.
68. D. P. Dubal, J. Kolleboyina, R. Zboril, R. A. Fischer, P. Gomez-Romero: Unveiling BiVO₄ Nanorods as a Novel Anode Material for High Performance Lithium Ion Capacitor: Beyond intercalation strategies, *J. Mater. Chem. A*, **6** (14) (2018) 6096-6106.
69. K. Jayaramulu, D. P. Dubal, B. Nagar, V. Ranc, O. Tomanec, M. Petr, K. K. R. Datta, R. Zboril, P. Gómez-Romero, R. A. Fischer: Ultrathin Hierarchical Porous Carbon Nanosheets for High-Performance Supercapacitors and Redox Electrolyte Energy Storage, *Adv. Mater.*, **30** (15) (2018) 1705789.
70. V. B. Gade, A. Goswami, R. S. Varma, S. N. Shelke, M. B. Gawande: Iron Oxide-Cobalt Nanocatalyst for O-tert-Boc Protection and O-Arylation of Phenols, *Nanomater.*, **8** (4) (2018) 246.
71. D. Li, P. T. Jing, L. H. Sun, Y. An, X. Y. Shan, X. H. Lu, D. Zhou, D. Han, D. Z. Shen, Y. C. Zhai, S. N. Qu, R. Zbořil, A. L. Rogach: Near-Infrared Excitation/Emission and Multiphoton-Induced Fluorescence of Carbon Dots, *Adv. Mater.*, **30** (13) (2018) 1705913.
72. M. Medveď, G. Zoppellaro, J. Ugolotti, D. Matochová, P. Lazar, T. Pospíšil, A. Bakandritsos, J. Tuček, R. Zbořil, M. Otyepka: Reactivity of fluorographene is triggered by point defects: beyond the perfect 2D world, *Nanoscale*, **10** (10) (2018) 4696-4707.
73. V. C. Anitha, A. Goswami, H. Sopha, D. Nandan, M. B. Gawande, K. Cepe, S. Ng, R. Zboril, J. M. Macak: Pt nanoparticles decorated TiO₂ nanotubes for the reduction of olefins, *Appl. Mater. Today*, **10** (2018) 86-92.
74. R. K. Sharma, R. Gaur, M. Yadav, A. Goswami, R. Zbořil, M. B. Gawande: An efficient copper-based magnetic nanocatalyst for the fixation of carbon dioxide at atmospheric pressure, *Sci. Rep.*, **8** (2018) 1901.
75. L. Wang, Y. Wang, P. Schmuki, S. Kment, R. Zboril: Nanostar morphology of plasmonic particles strongly enhances photoelectrochemical water splitting of TiO₂ nanorods with superior incident photon-to-current conversion efficiency in visible/near-infrared region, *Electrochim. Acta*, **260** (2018) 212-220.

76. B. Hudcová, V. Veselská, J. Filip, S. Číhalová, M. Komárek: Highly effective Zn(II) and Pb(II) removal from aqueous solutions using Mg-Fe layered double hydroxides: Comprehensive adsorption modeling coupled with solid state analyses, *J. Clean. Prod.*, **171** (2018) 944-953.
77. Z. Chaloupkova, A. Balzerova, J. Barinkova, Z. Medrikova, P. Sacha, P. Benes, V. Ranc, J. Konvalinka, R. Zboril: Label-free determination of prostate specific membrane antigen in human whole blood at nanomolar levels by magnetically assisted surface enhanced Raman spectroscopy, *Anal. Chim. Acta*, **997** (2018) 44-51.
78. P. Kovaříček, M. Cebecauer, J. Neburková, J. Bartoň, M. Fridrichová, K. A. Drogowska, P. Cigler, J.-M. Lehn, M. Kalbac: Proton-Gradient-Driven Oriented Motion of Nanodiamonds Grafted to Graphene by Dynamic Covalent Bonds, *ACS Nano*, **12** (7) (2018) 7141-7147.
79. V. Sutrová, I. Šloufová, P. Mojzeš, Z. Melníková, M. Kalbáč, B. Vlčková: Excitation Wavelength Dependence of Combined Surface- and Graphene-Enhanced Raman Scattering Experienced by Freebase Phthalocyanine Localized on Single Layer Graphene-Covered Ag Nanoparticle Array, *J. Phys. Chem. C*, **122** (2018) 20850-20860.
80. V. Blechta, K. A. Drogowska, V. Vales, M. Kalbac: Adsorption Site-Dependent Mobility in Graphene Exposed to Gas Oxygen, *J. Phys. Chem. C*, **122** (2018) 21493-21499.
81. V. L. P. Guerra, P. Kovaricek, V. Vales, K. Drogowska, T. Verhagen, J. Vejpravova, L. Horak, A. Listorti, S. Colella, M. Kalbac: Selective Self-Assembly and Light Emission Tuning of Layered Hybrid Perovskites on Patterned Graphene, *Nanoscale*, **10** (2018) 3198–3211.
82. P. Sazama, J. Pastvova, D. Kaucky, J. Moravkova, I. Jakubec, J. Rathousky, G. Sadovska: Does hierarchical structure affect the shape-selectivity zeolites? Example of transformation of n-hexane in hydroisomerization, *J. Catal.*, **364** (2018) 262–270.
83. J. Pastvova, D. Kaucky, J. Moravkova, R. Pilar, J. Rathousky, A. Vondrova, P. Sazama: Tailoring of the structure and accessibility of acid sites in mordenite zeolite for hydroisomerization of n-hexane, *Appl. Catal. A: General*, **562** (2018) 159-172.
84. E. Tronconi, I. Nova, J. Nováková, M. Bernauer, P. Sazama, Z. Sobalík: Mechanistic Study of the NO + NH₄NO₃ Reaction on H- and Fe/H-BEA Zeolites Using ¹⁵N and ¹⁸O Labeled Species, *Top. Catal.*, **61** (18-19) (2018) 1967-1973. <https://doi.org/10.1007/s11244-018-1026-y>.
85. E. Tabor, G. Sádovská, M. Bernauer, P. Sazama, J. Nováková, V. Fíla, T. Kmječ, J. Kohout, K. Závěta, Z. Sobalík: Feasibility of application of iron zeolites for high-temperature decomposition of N₂O under real conditions of the technology for nitric acid production, *Appl. Catal. B: Environmental*, **240** (2019) 358-366.
86. P. Sazama, J. Pastvova, C. Rizescu, A. Tirsoaga, V.I. Parvulescu, H. Garcia, L. Kobera, J. Seidel, J. Rathousky, P. Klein, I. Jirka, J. Moravkova, V. Blechta: Catalytic Properties of 3D Graphene-Like Microporous Carbons Synthesized in a Zeolite Template, *ACS Catal.*, **8** (2018) 1779-1789.
87. J. Pastvova, R. Pilar, J. Moravkova, D. Kaucky, J. Rathousky, S. Sklenak, P. Sazama: „Tailoring the structure and acid site accessibility of modernite zeolite for hydroisomerisation of n-hexane, *Appl. Catal. A, General*, **562** (2018) 159-172.
88. G. Sadovska, E. Tabor, M. Bernauer, P. Sazama, V. Fíla, T. Kmjec, J. Kohout, K. Zaveta, V. Tokarova, Z. Sobalik: FeOx/Al₂O₃ catalysts for high-temperature decomposition of N₂O under conditions of NH₃ oxidation in nitric acid production, *Catal. Sci. Technol.*, **8** (2018) 2841.

89. R. Žouželka, M. Remzová, L. Brabec, J. Rathouský: Photocatalytic Performance of Porous TiO₂ Layers Prepared by Quantitative Electrophoretic Deposition from Organic Solvents, *Appl. Catal. B: Environmental*, **227C** (2018) 70-78.
90. O. Mrózek, P. Ecorchard, P. Vomáčka, J. Ederer, D. Smržová, M. Šrámová Slušná, A. Machálková, M. Nevoralová, H. Beneš: Mg-Al-La LDH-MnFe₂O₄ hybrid material for facile removal of anionic dyes from aqueous solutions, *Appl. Clay Sci.*, **169** (2019) 1-9.

Patenty

1. **Patent CZ306831B6**: M. Munzarová, P. Čapková, R. Ryšánek: *Vícevrstvé filtrační medium pro filtraci vzduchu*, registrován dne: 26.7.2017, akceptován v roce 2018.
2. **Patent CZ307177**: J. Morávková, D. Kaucký, J. Pastvova, P. Sazama: *Katalyzátor pro hydroizomerizaci alkanů C4-C7, jeho příprava a použití*, akceptován v roce 2018.
3. **Patent CZ 307189**: G. Sádovská, P. Sazama: *Způsob výroby katalyzátorů perovskitové struktury, katalyzátory perovskitové struktury a jejich použití pro vysokoteplotní rozklad N₂O*, akceptován v roce 2018.

Ověřené technologie výroby stabilních antimikrobiálních nanofiltrů pro vzdušné filtrace

1. P. Čapková, P. Ryšánek, J. Trögl, M. Munzarová: *Polymerní nanovláknenná antibakteriální filtrační média*, 2018.

Studentské práce

1. Petr Vařák (doc. Ing. Pavla Nekvindová, Ph.D.; consultant - Ing. Soňa Vytykáčová; UCT Prague, FCHT, department 101): *Influence of different oxidation states of copper and silver on the luminescence properties of holmium and erbium doped silicate glasses*, 2018.
2. Jaroslav Vavřík (Ing. Alena Michalcová, Ph.D.; UCT Prague, FCHT, department 106): *Structure and properties of intensively plastically deformed Ti depending on its thermal treatment*, 2018.
3. Zbyněk Veselka (Ing. Alena Michalcová, Ph.D.; UCT Prague, FCHT, department 106): *Preparation and characterization of Al-Cr-Fe fast-setting alloys with possible "self-healing" properties*, 2018.
4. Ilona Voňavková (Ing. Jiří Kubásek, Ph. D.; UCT Prague, FCHT, department 106): *Structure and mechanical properties of magnesium alloys prepared by thermomechanical processes*, 2018.
5. Bc. Eliška Hynková: *Optimalizace parametrů depozice s ohledem na vlastnosti kompozitních fotokatalytických vrstev*, 2018

Bakalářské práce

1. David Žižka (Ing. Martin Šťastný; UJEP Ústí nad Labem, Faculty of Environment): *Development of the HPLC method for determination of chemical warfare agents simulants and their stoichiometric degradation on the surface of nanocrystalline metal oxides*, 2018.
2. Assel Zhankina (Prof. Baikenov Murzabek; The Karaganda State University of the name of academician E.A. Buketov, Chemical Faculty, Name of department is Chemical technology and ecology): *Kinetics of thermo-hydro-catalytic rework of primary coal tar” (Кинетика термогидрокаталитической переработки первичной каменноугольной смолы и полимерных отходов)*, 2018.