Name **MIROSLAV ČERNÍK, Prof. Dr.**

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Date of birth June 15, 1964

Education and Academic Career

2014	Professor of Applied sciences in engineering, Technical University of Liberec, Czech Republic
2007	Associated Professor (habitation on Application of zero-valent iron nanoparticles for in-situ contaminant treatment), TUL, Czech Republic
1994	PhD, Swiss Federal Institute of Technology, Zurich, Switzerland
1991	CSc. in Chemistry, Czech Technical University in Prague - Faculty of Nuclear Science and Physical Engineering, Prague, Czech Republic
1987	Engineering Degree in Nuclear Chemistry, Czech Technical University in Prague - Faculty of Nuclear Science and Physical Engineering, Prague, Czech Republic

Work experience

1994 – 1995	Scientific Assistant at Swiss Federal Institute of Technology, Zurich, Switzerland
1995 – now	AQUATEST, a.s. – Head of Department for Research and Development, Prague (till 2012), researcher 5% FTE (now)
2005 – now	Faculty of mechatronics and interdisciplinary engineering studies, Technical University of Liberec, Czech R. (20%)
2012 – 2020	Scientific Director, Centre for nanomaterials, advanced technologies and innovation (CxI), Technical University of Liberec, Czech R. (80%)
2021 – now	Director of CxI TUL

Research activity

- Application of nanomaterials in environmental protection
- Nanomaterial synthesis, especially by green methods
- Risk of nanomaterials for environment
- Chemical and biological processes in toxic waste

Obtained grant funds International:

1. Innovative technology based on constructed wetlands for treatment of pesticide contaminated waters (LIFEPOPWAT), LIFE EU program, 2020-2023 (Project coordinator)
2. Sustainable Remediation of Radionuclide Impacts on Land and Critical materials Recovery (SURRI), HORIZON-WIDERA-2021-ACCESS-03-TWINNING (Project coordinator, 2023-2025)
3. Integrated Approach to Management of Groundwater quality In functional urban Areas (AMIIGA), Interreg Central Europe, 2016-2019.
4. Nanomaterial Fate and Speciation in the Environment (NanoFASE), H2020, NMP-28-2014 (Project No: 646002), 2015-19, TUL principal investigator.
5. Development of the safety case knowledge base about the influence of

microbial processes on geological disposal of radioactive wastes (MIND), HORIZONT 2020 EU – EUROATOM, 2015-19, TUL principal investigator.
6. Nanomaterials for remediation of contaminated water (2016-2019, TF02000064), Czech-Chinesse project.
7. Exploring the role of ferrates and modified nano zero-valent iron in the activation process of persulfates (2019-22, LTAUSA18), Czech – USA project.

National:

1. Hybrid materials for hierarchic structures (2017-2022), OPVVV Excellent Research (Principal investigator of the Research program 3 Nanomaterials)
2. Environmental friendly nanotechnologies and biotechnologies in water and soil treatment (2012-2019, TE01010218).
3. Mikrobiální metanomika v souvislosti s fungováním ekosystémů: role populací a jejich metabolických drah v degradaci chlorethenů (2014-2018, GA14-32432S).
4. Research Infrastructure – NANOENVICZ (2016-now, LM2015073).

Other best research results (patents, technologies, cooperation with industry…)

1. ČERNÍK, M., HRABAL, J. a NOSEK, J. In-situ remediation of through ground water unsound chemical compounds, patent, 2013, Nr. 304152, applied in industry.
2. ČERNÍK, M., LEDERER, T., SVOBODOVA, L., JIRKU, V., MASAK, J., CEJKOVA, A.: A Method of Colonizing a Carrier Comprising a Layer of Polyamide Nanofibres by a Population of Bacteria of the Rhodococcus Erythropolis Strain, patent.
3. NOSEK, J., ČERNÍK, M., HRABAL, J.: A method of in-situ remediation of a rock environment contaminated by harmful chemical compounds, patent.
4. NOSEK, J., ČERNÍK, M., KVAPIL, P.: A method of in-situ remediation of a rock environment contaminated by harmful chemical compounds, patent.
5. CADROVA, L., KVAPILOVA, S., CERNIK, M., NOSEK, J., ZARUBA, J, BROZ, M., FRANEK, J, UHLIR, J., VANECEK, M.: Heat-conducting Material Based on Geopolymer, patent.

Publications H-index **35** (Web of Science), 216 articles, over 6200 citations (27.3.2024)

Selected publications in impacted journals and/or research monographs

1. Waclawek, S., Lutze, H.V., Grubel, K., Padil, V.V.T., Cernik, M., Dionysiou, D.D., 2017. Chemistry of persulfates in water and wastewater treatment: A review. Chemical Engineering Journal 330, 44–62, DOI:10.1016/j.cej.2017.07.132, **IF=10.652, Cited: 1233**
2. Padil, V.V.T., Cernik, M., 2013. Green synthesis of copper oxide nanoparticles using gum karaya as a biotemplate and their antibacterial application. International Journal of Nanomedicine 8, 889–898, DOI: 10.2147/ijn.s40599, **IF = 5.115, Cited: 511**
3. Padil, Vinod V. T., Waclawek S., Černík M., Varma R. S. Tree gum-based renewable materials: Sustainable applications in nanotechnology, biomedical and environmental fields. Biotechnology Advances. 2018, 36, 1984-2016. **IF = 12.831; Cited: 77**
4. Silvestri, D., Waclawek, S., Sobel, B., Torres-Mendita, R., Novotny, V., Nguyen, NHA, Sevcu, A., Padil, VVT, Mullerova, J., Stuchlik, M, Papini, MP, Cernik, M., Varma, RS. A poly(3-hydroxybutyrate)-chitosan polymer conjugate for the synthesis of safer gold nanoparticles and their applications. Green Chem., 2018, 20, 4975-4982, DOI10.1039/c8gc02495, **IF=9.8, Cited: 32**
5. Ettel, D., Havelka, O., Isik, S., Silvestri, D., Waclawek, S., Urbanek, M., Padil, VVT, Cernik, M., Yalcinkaya, F., Torres-Mendita, R. Laser-synthesized Ag/TiO nanoparticles to integrate catalytic pollutant degradation and antifouling enhancement in nanofibrous membranes for oil-water separation. Appl. Surf. Sci., 2021, 564, DOI10.1016/j.apsusc.2021.150471. **IF = 6.7; Cited: 15.**