

RNDr. Jan Čermák, PhD. CURRICULUM VITAE

Born September 30th 1981, in Prague, Czech Republic

2001-2006	Master studies at Charles University, Prague, specialization: Optics and Optoelectronics, master thesis theme: New Materials for Solar Cells
2007 (1 week)	Research stay at Johannes Kepler Universität, Linz (Austria), topic: fabrication of organic photovoltaic devices
06/2008	RNDr. degree, Charles University, Prague
2010	PhD. degree at Charles University, Prague, thesis topic: Semiconductor-organic interface at nanoscale
2013 (3 months)	Research stay at University of Strathclyde, Glasgow (Scotland, UK), topic: electrical properties of biogels
2006 - 2020	Scientist at the Department of Thin Films and Nanostructures, Institute of Physics, Czech Academy of Sciences, v.v.i.
2021	Scientist at the Department of Diamond and Associated Materials, Institute of Physics, Czech Academy of Sciences, v.v.i.
From 2022	Scientist at the Department of Semiconductors, Institute of Physics, Czech Academy of Sciences, v.v.i.

Jan Čermák finished his master studies at Charles University (Prague, CZ) in 2006. He studied blend organic films for photovoltaics by the means of advanced modes of atomic force microscopy (AFM). During his Ph.D. studies and later he focused his research on the use of diamond as a material for opto-electronics. He specializes himself in advanced AFM electrical modes. As a scanning probe as well as diamond electronics specialist, Jan Čermák was a project member of several scientific projects as well as international collaborations (Uppsala University: interaction of (bio)molecules and synthetic diamond surface, 2009-2012, AIST Tsukuba: response of Schottky diode made of diamond to DUV (<200 nm) illumination, 2012-2013, electrostatic charging of diamond surface by the AFM probe for nanoparticle self-assembly, 2016-2017, INFLPR, Romania: proton irradiation effects in materials for solar cells, 2016-2018). He was the principal investigator of the Czech national project LD15013: OMOFOS (2015-2017, Ministry of education, youth, and sports), 20-20991J (2020-2022, Czech Grant Agency), and a Management Committee member for the Czech Republic within the European COST Action MP1307 – StableNextSol. Related to the project topic he studied several electronic and optoelectronic systems based on diamond, namely diamond field-effect biosensor, diamond as the electrode for collection of photogenerated charge from covalently linked chromophores, optoelectronic processes in the system of electrochemically grafted organic dye on diamond surface, various designs of electrodes for photovoltaics, microscopic electronic properties of diamond nanoparticles, and others. He is author or co-author of 42 scientific articles in peer-reviewed journals (h-index 11) with more than 361 citations, two patents, a utility model, and a book chapter.

Selected articles related to the project topic:

A. Sokeng-Djoumessi, A. Sowardt, D. Miliiaeva, J. Čermák, M. Schaal, F. Otto, Š. Stehlík, J. Kulíček, V. Nádaždy, T. Fritz, A. Kromka, B. Rezek, U.S. Schubert, H. Hoppe. Nanodiamonds as charge extraction layer in organic solar cells: the impact of the nanodiamond surface chemistry. *Solar RRL*, accepted for publication.

M. Krátká, J. Čermák, J. Vachelová, M. Davidková, N. Romanyuk, A. Kromka, B. Rezek. Gamma radiation effects on diamond field-effect biosensors with fibroblasts and extracellular matrix. *Colloids and Surfaces B: Biointerfaces* 204 (2021) 111689(1)-111689(9).

D. Miliiaeva, P. Matunová, J. Čermák, Š. Stehlík, A. Cernescu, Z. Remeš, P. Štenclová, M. Müller, B. Rezek. Nanodiamond surface chemistry controls assembly of polypyrrole and generation of photovoltage. *Scientific Reports* 11 (2021) 590(1)-590(14).

J. Raymakers, A. Artemenko, F. Verstraeten, H. Krysova, J. Čermák, S.S. Nicley, D. Lopez-Carballeira, A. Kromka, K. Haenen, L. Kavan, W. Maes, B. Rezek. Photogenerated charge collection on diamond electrodes with covalently linked chromophore monolayers. *Electrochimica Acta* 337 (2020) 35762-15.

J. Raymakers, H. Krysova, A. Artemenko, J. Čermák, S.S. Nickley, P. Verstappen, S. Gielen, A. Kromka, K. Haenen, L. Kavan, W. Maes, B. Rezek. Functionalization of Boron-Doped Diamond with a Push-Pull Chromophore via Sonogashira and CuAAC Chemistry. *RSC Advances* (2018), 8, 33276-33290.

J. Čermák, H. Kozak, Š. Stehlík, V. Švrček, V. Pichot, D. Spitzer, A. Kromka, B. Rezek. Microscopic Electrical Conductivity of Nanodiamonds after Thermal and Plasma Treatments, *MRS Advances* (2016), 1, 1105-1111.