

## Petr Ashcheulov, Ph.D.

---

**Address:** FZU - Institute of Physics ASCR,  
Department of Functional Materials

**Contact:** [ashcheulov@fzu.cz](mailto:ashcheulov@fzu.cz)

**Tel:** (+420) 266 052 544

**Born:** 1985

**ORCID:** 0000-0001-8085-3609

**SCOPUS ID:** 55361141500



---

### Professional experience

- 1/2021 – Present**     **Research Scientist**  
Institute of Physics of the Academy of Sciences of the Czech Republic, Department of Functional Materials
- 5/2015 – 12/2020**     **Post-doctoral Researcher**  
Institute of Physics of the Academy of Sciences of the Czech Republic, Department of Functional Materials
- 10/2011 – 4/2015**     **Research Assistant**  
Institute of Physics of the Academy of Sciences of the Czech Republic, Department of Functional Materials

---

### Education

- 4/2011 – 4/2015**     **Doctor of Philosophy (Ph.D.)** in Physics  
Czech Technical University in Prague;  
Faculty of Nuclear Sciences and Physical Engineering, Department of Solid State Engineering
- 9/2002 – 2/2008**     **Master's program** in Physics  
Siberian State Aerospace University in Krasnoyarsk, Russian Federation

---

### Internships

- 4/2017 – 10/2017**     **École polytechnique fédérale de Lausanne (EPFL) Lausanne, Switzerland**

---

## Academic output and selected publications

**Publications:** 39, **Citations:** 536, ***h-index*:** 13 (Web of Science)

### Selected publications:

- P. Ashcheulov et al., "Surface morphology-assisted electrochemical conversion of carbon dioxide to formic acid via nanocrystalline boron-doped diamond electrodes", *CHEMICAL ENGINEERING JOURNAL* 473 (2023) 145463
- P. Ashcheulov et al., "Multifunctional and Mechanically Robust Porous Diamond with Large Electroactive Surfaces via Electrically Conductive and Insulating Templates for 3D Electrode Applications", *ADVANCED MATERIALS INTERFACES* (2022) 2200375
- P. Ashcheulov et al., "Low temperature synthesis of transparent conductive boron doped diamond films for optoelectronic applications: Role of hydrogen on the electrical properties", *APPLIED MATERIALS TODAY* 19 (2020) 100633
- P. Ashcheulov et al., "Nanocrystalline Boron-Doped Diamond as a Corrosion-Resistant Anode for Water Oxidation via Si Photoelectrodes", *ACS APPLIED MATERIALS AND INTERFACES* 10 (2018) 29552 – 29564
- P. Ashcheulov et al., "Optically transparent composite diamond/Ti electrodes", *CARBON* 119 (2017) 179 – 189

---

## Research activities and Grant projects

01/2012 – 12/2013 Marie Curie Initial Training Network (FP7-PEOPLE). Materials and interfaces for energy storage and conversion (MATCON - 238201)

07/2016 – 6/2018 Czech Academy of Sciences (PPLZ program). Diamond-based electrodes for photoelectrochemical water splitting

10/2016 – 3/2018 Czech Academy of Sciences (Program for research and mobility support of starting researchers). Silicon photoelectrodes protection by nanocrystalline diamond for water splitting

01/2019 – 06/2022 Czech Science Foundation 19-09784Y. Nanocrystalline diamond electrodes for photo-electrochemical applications: CO<sub>2</sub> reduction and degradation of organic contaminants in water

01/2023 – 12/2025 Czech Science Foundation 23-05688S. Electrochemical sensors based on nanostructured and chemically modified sp<sup>2</sup> and sp<sup>3</sup> carbon surfaces for (bio)analytical applications.

---

**Fields of expertise**

Physics of wide band gap semiconductors; functional coatings; transparent conductive coatings, thin film deposition; photoelectrochemical water-splitting; protective coatings; physics of solid-state interfaces; energy conversion and storage.