# Curriculum Vitae


Name: Alexandr (Oleksandr) Stupakov

Born: 30th January 1977
Degree: M.Sc., Ph.D.
Marital status: Married, have son
Citizenship: Czech Republic
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## EDUCATION:

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| 10.2001 – 6.2006 | Charles University, Faculty of Mathematics and Physics, Department of Electronic Structures, Prague, Czech Republic. Thesis "Investigation of magnetic processes of structure degraded ferromagnetic materials". **Ph.D.** in Physics of Condensed Matter and Material Research. |
| 9.1994 – 8.1999 | Donetsk State University, Faculty of Physics, Theoretical Department, Donetsk, Ukraine. Diploma "Local electron states on the twin boundary". **M.Sc.** in the field of Physics (with honors), physicist-engineer. |

## EMPLOYMENT:

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| 9.2001 – present | Institute of Physics, Czech Academy of Sciences, Department of optical and biophysical systems, Prague, Czech Republic. **Scientist** |
| 11.2006 – 11.2008 | Institute of Fluid Science, Tohoku University, Sendai, Japan. **JSPS postdoctoral fellow** |
| 9.2000 – 7.2001 | Donetsk National University, Faculty of Physics, Pedagogical Department, Donetsk, Ukraine. **Lecturer assistant** Courses of general physics: mechanics, thermodynamics and optics. |
| 11.1999 – 9.2001 | Institute of Physics and Engineering, Ukrainian Academy of Science, Department of Phase Transitions, Donetsk, Ukraine. **Researcher** |

## GUIDED PROJECTS:

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| 1.2020 – 12.2022 | Standard project GA 20-21864S of Czech Science Foundation (GAČR). "Study of nickelate thin films and multilayers for development of novel electro-optical devices" – **186,000 EUR** |
| 2.2013 – 12.2015 | Standard project GA 13-18993S of Czech Science Foundation (GAČR). "Development of new systems for field-referred measurement of magnetic Barkhausen noise at controllable magnetization conditions" – **133,000 EUR**. |
| 1.2009 – 12.2011 | Postdoctoral project GP 102/09/P108 of Czech Science Foundation (GAČR). "Development of a new system for measurement of open-circuit ferromagnetic samples with controlled magnetization waveform" – **33,000 EUR**.. |
| 11.2006 – 11.2008 | Postdoctoral fellowship P06377 of Japan Society for the Promotion of Science. "Evaluation of industrial variations and degradation of ferromagnetic materials by magnetic methods" – **86,000 EUR**. |

**PUBLICATION RECORD:**

54 papers in the impacted international journals, 34 out of that by first/corresponding author. 12 papers in the conference proceedings. Total citations: 571 (WoS), 654 (Scopus). H-index: 15 (WoS), 17 (Scopus). ResearcherID: G-9072-2014, Scopus ID: 8278169000, ORCID ID: 0000-0002-6089-8196. 21 given talks (3 invited) and 12 poster presentations in the international conferences.

**AWARDS:**

2006 Postdoctoral fellowship of Japan Society for the Promotion of Science (JSPS).
2012 Award of president of the Czech Science Foundation (GAČR).
2016 IOP Outstanding Reviewer Award from Measurement Science and Technology journal.

**Practical skills:**

- Development, assembling and programming of magnetic measurement systems: inductive hysteresis, Barkhausen noise, magneto-acoustics emission; experience with magnetic field generation and measurement (Hall sensors and H-coils), GPIB control, digital data evaluation (feedback control of magnetization waveform, Fourier transform, filtering, fitting, smoothing).
- Operation of industrial measurement systems: Quantum Design SQUID (magnetic moment), Quantum Design PPMS (resistivity/thermal transport), aixACCT piezoelectric analyzer with a double-beam interferometer, Linkam temperature stage, HP LF impedance analyzer.

**Software:** LabVIEW, Origin, LaTeX, MathCad, FEMM.

**Languages:** English (FCE); Czech (fluent); Russian, Ukrainian (native).

**Research activity and main scientific results:**

Sphere of my current research interests lies primarily in the area of modern nano-scaled materials, namely thin epitaxial films of the perovskite oxides and metal-fullerene nano-composites. I am involved in the measurements of magnetic, piezo(electric) and optical properties of these materials. This activity has resulted in 8 scientific articles in the reputed international journals for the last 5 years. In particular, we revealed a polaronic electrical conductivity in the epitaxial films of paraelectric-magnetic solid solution. Our pilot paper devoted to the nickelates attributes a pronounced negative magneto-resistance at low temperatures to the pure insulating phase of the $NdNiO_3$ films. Interesting results were also obtained for the self-organized cobalt-fullerene nanocomposites. Varying the cobalt concentration, the nanocomposite structure displays qualitative changes leading to different physical properties: interface exchange magnetism and optical absorption spectra with a quantum plasmon.

My previous projects were devoted to development of unique experimental techniques for measurements of the magnetic hysteresis and Barkhausen noise at controllable magnetization conditions. Particularly, the second post-doctoral project awarded by the GAČR president gave an experimental proof that simultaneous direct field determination and induction waveform control is a necessary base for the repeatable magnetic measurements. These results have a strong application potential: the electrical steels were accurately measured in the magnetically open configurations, which was considered impossible so far. The latest project devoted to micro-magnetization dynamics gave a principally new result: rms intensity of the Barkhausen noise signal is proportional to a square root of the magnetic field rate of change.