Curriculum Vitae

Name: Alexandr (Oleksandr) Stupakov

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

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:

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:

2.2013 – 12.2015	Standard team project GA13-18993S of Czech Science Foundation (GA ČR). "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 GP102/09/P108 of Czech Science Foundation (GA ČR). "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**.

PUBLICATIONS: 53 papers in the impacted international journals, 33 of them by the first author, see researcher id (h-index = 15). 19 given talks (2 invited) and 11 poster presentations.

AWARDS:

2006 Postdoctoral fellowship of Japan Society for the Promotion of Science (JSPS).
2012 Award of president of the Czech Science Foundation (GA ČR).
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 analyser with a double-beam interferometer, Linkam temperature stage.

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

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

Research activity and main scientific results:

My previous projects were devoted to development of unique experimental techniques for the magnetic measurements and to investigation of the macro- and micro-magnetic responses of modern industrial materials at controllable magnetization conditions. Particularly, the second post-doctoral project awarded by the GA CR president gave an experimental proof that simultaneous direct field determination and induction waveform control is a necessary basis 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 principally new results: 1) Barkhausen noise and magneto-acoustic emission are driven by the field rate of change, but not by the induction rate of change as supposed before; 2) intensity of these micro-magnetic signals roughly rises as a square root function of the magnetizing frequency.

Recently, focus of my research interests moves forwards investigations of modern nano-scaled materials, namely thin epitaxial films of the perovskite oxides, metal-fullerene nano-composites and heavily doped nano-particles. Generally, I am involved in the measurements of magnetic and resistive properties of these materials, in the experiment planning and the manuscript composition. The mentioned activity resulted in 7 scientific articles in the reputed international journals for the last 5 years. In particular, we revealed a ferromagnetic ordering at a charge-imbalanced interface between the perovskite thin films and a polaronic electrical conductivity in the similar epitaxial films of paraelectric-magnetic solid solution. 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, optical absorption spectra with quantum plasmon, electrical conductivity transition and magneto-resistive effect.