



## PROF. DR. VASILII S. ZAKHVALINSKII

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INVITED BY

[LPMS](#) LABORATORY

LABORATORY OF PHYSICS OF MATERIALS  
AND SURFACES

He is a member of the Belgorod State University (Russia) since September 2004 and is currently Professor of cathedra General and Applied Physics, Engineering Physics Department. He gives lectures on the following subjects: Nanotechnology Materials and Methods in Physics, Physical Principles of Electronics, Electronics, Theory of Electrical Engineering.

His major studies have been associated with the study of the magnetic properties and mechanisms of conductivity of diluted magnetic semiconductors A<sub>2</sub>B<sub>5</sub> and manganite perovskites. He guides the following research projects: "Application of diluted magnetic semiconductors A<sub>2</sub>B<sub>5</sub> for creating device structures on industrial substrates and study their properties" and "Development of high-performance, low-cost solar cells based on kesterites".

### CURRENT RESEARCH INTERESTS

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- His main research focuses on new materials for solar energy and building materials based on photovoltaic structures.

### EDUCATION

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- 1992: Candidate of Sciences in physics of semiconductors and dielectrics.  
Thesis: "Preparation and study the single crystals of solid solutions (Zn<sub>1-x</sub>Mn<sub>x</sub>)<sub>3</sub>As<sub>2</sub>".
- 2004 – 2008: Doctoral degree at the Udmurt State University, Izhevsk, Russia.
- 2010: Ph.D
- 2011: Degree of Doctor of Physical and Mathematical Sciences, Belgorod, Russia  
Thesis: "Magnetic properties, electrical conductivity mechanisms and phase separation in manganites perovskites LaMnO<sub>3+δ</sub>, La<sub>1-x</sub>A<sub>x</sub>MnO<sub>3</sub> (A = Ca, Ba), La<sub>1-x</sub>Ca<sub>x</sub>Mn<sub>1-y</sub>FeyO<sub>3</sub>".

### PUBLICATIONS

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- V. S. Zakhvalinskii, R. Laiho, A. V. Lashkul, K. G. Lisunov, E. Lahderanta, Yu. S. Nekrasova, P. A. Petrenko, Phase separation, ferromagnetism and magnetic irreversibility in La<sub>1-x</sub>Sr<sub>x</sub>Mn<sub>1-y</sub>FeyO<sub>3</sub>, *J. Magn. Magn. Mater.* **323**, (2011) 2186-2191.
- V. S. Zakhvalinskii, R. Laiho, A. V. Lashkul, K. G. Lisunov, E. Lahderanta, Yu. S. Nekrasova, P. A. Petrenko and V. N. Stamov, Variable-range hopping conductivity of La<sub>1-x</sub>Sr<sub>x</sub>Mn<sub>1-y</sub>FeyO<sub>3</sub>, *J. Phys.: Condens. Matter* **23** (2011) 015802 (8pp).
- T. Suominen, H. Huhtinen, S. Majumdar, P. Paturi, V. S. Zakhvalinskii and R. Laiho, Persistent photoinduced magnetization and oxygen non-stoichiometry in La<sub>0.9</sub>Ca<sub>0.1</sub>MnO<sub>3</sub> films, *J. Phys.: Condens. Matter* **21** (2009) 266001 (8pp).
- R. Laiho, A. V. Lashkul, K. G. Lisunov, E. Lahderanta, M. A. Shakhov, and V. S. Zakhvalinskii, Mechanisms of hopping conductivity of p-CdSb:Ni in magnetic field, *Phys. Status Solidi C* **6**, No. 5, 1332–1335 (2009)
- R. Laiho, A. V. Lashkul, K. G. Lisunov, E. Lahderanta, M. A. Shakhov, and V. S. Zakhvalinskii, Hall effect in the new diluted magnetic semiconductor p-CdSb:Ni *Phys. Status Solidi C* **6**, No. 5, 1328–1331 (2009)