

**LIST OF PUBLICATIONS**  
**of Dr. Oleksandr V. Dobrovolskiy**

**Peer-reviewed papers**

as of 1.09.2011

- [1] V. A. Shklovskij and O. V. Dobrovolskiy. **Influence of point-like disorder on the guiding of vortices and the Hall effect in a washboard planar pinning potential.**  
Phys. Rev. B **74**, 104511–1–14 (2006).
- [2] V. A. Shklovskij and O. V. Dobrovolskiy.  
**Influence of point-like disorder on the guiding of vortices in a rotating-current scheme.**  
Physica C **460–462**, 1253–1254 (2007).
- [3] V. A. Shklovskij and O. V. Dobrovolskiy. **AC-driven vortices and the Hall effect in a superconductor with a tilted washboard pinning potential.**  
Phys. Rev. B **78**, 104526–1–12 (2008).
- [4] V. A. Shklovskij and O. V. Dobrovolskiy. **Nonlinear two-dimensional frequency- and temperature-dependent vortex dynamics in a tilted washboard pinning potential.**  
J. Phys. **150**, 052241–052244 (2009).
- [5]. O. V. Dobrovolskiy. **Influence of the ac current on the nonlinear dc resistive response in a tilted washboard pinning potential.** Proc. of the 6<sup>th</sup> Int. Conf. on Math. Modeling and Comp. Simul. of Mater. Technol. (Ariel, Israel, 2010), pp. 245–252.
- [6] O. V. Dobrovolskiy, M. Huth, and V. A. Shklovskij  
**Anisotropic magnetoresistive response in thin Nb films decorated by an array of Co stripes.**  
Supercond. Sci. Technol. **23**, 125014 (2010).
- [7]. O. V. Dobrovolskiy, R. Sachser, M. Huth, and V. A. Shklovskij. **Even magnetoresistive response in thin Nb films with washboard pinning nanostructures.** Proc. of the 4<sup>th</sup> Int. Congress on Advanced Electromagn. Materials in Microwaves and Optics (Karlsruhe, Germany, 2010), pp. 528–530. ISBN 978-952-92-7734-6.
- [8] O. V. Dobrovolskiy, M. Huth, and V. A. Shklovskij  
**Fabrication of artificial washboard pinning structures in thin niobium films.**  
J. Supercond. Novel Magnet. **24**, 375–380 (2011).
- [9] O. V. Dobrovolskiy, E. Begun, M. Huth, V. A. Shklovskij, M. Tsindlekht  
**Vortex lattice matching effects in a washboard pinning potential induced by Co nanostripe arrays.**  
Physica C **471**, 449–452 (2011).
- [10] V. A. Shklovskij and O. V. Dobrovolskiy. **Frequency-dependent ratchet effect in superconducting films with a tilted washboard pinning potential.**  
Phys. Rev. B **84**, 054515–1–12 (2011).
- [11] O. V. Dobrovolskiy, M. Huth, and V. A. Shklovskij. **Fluxonic properties of vortices in a washboard pinning potential fabricated by focused particle beam techniques.**  
submitted to Acta Physica Polonica A.
- [12] V. A. Shklovskij and O. V. Dobrovolskiy. **Nonadiabatic ratchet effect in superconducting films with a tilted cosine pinning potential.**  
submitted to J. Phys. Conf. Series.
- [13] O. V. Dobrovolskiy, V. A. Shklovskij, and M. Huth  
**Current-controlled filter on superconducting films with a tilted washboard pinning potential.**  
submitted to Physics Procedia.

## Books

- [1] V. A. Shklovskij and O. V. Dobrovolskiy. **Pinning and vortex dynamics in superconductors.** Series of lectures for students of the Physical Department. (Kharkiv National University, Kharkiv, Ukraine, 2007, *in Russian*) 112p.

## Communications to scientific conferences

- [1] V. A. Shklovskij, O.V. Dobrovolskiy. **Influence of point-like disorder on the Hall resistance in a washboard planar pinning potential.** Book of Abstracts of Conf of Young Researches (ILTP, Kharkiv, Ukraine, 2005), p.40.
- [2]. O. V. Dobrovolskiy. **Influence of point-like disorder on the critical current density anisotropy in a washboard planar pinning potential.** Book of Abstracts of the 2<sup>nd</sup> Int. Conf. on Cond. Matter (KhNU, Kharkiv, Ukraine, 2007), p.76.
- [3]. O. V. Dobrovolskiy. **Application of scalar continued fraction method to the study of vortex motion in a tilted cosine pinning potential.** Book of Abstracts of Conf. of Young Researches (ILTP, Kharkiv, Ukraine, 2007), p.52.
- [4]. O. V. Dobrovolskiy. **Influence of the ac current on the static current-voltage characteristics of type-II superconductors.** Book of Abstracts of the 1<sup>st</sup> Int. Conf. of Young Researches (ILTP, Kharkiv, Ukraine, 2008), p.33.
- [5]. V. A. Shklovskij and O. V. Dobrovolskiy. **Nonlinear Two-dimensional Frequency- and Temperature-dependent Vortex Dynamics in a Tilted Washboard Pinning Potential.** Book of Abstracts of the 25th Int. Conf. on Low Temp. Phys. (Amsterdam, Netherlands, 2008), p. xxx.
- [6]. O. V. Dobrovolskiy, M. Huth, and V. A. Shklovskij. **Fabrication of artificial washboard pinning structures in thin niobium films sputtered onto sapphire substrates.** Book of Abstracts of Int. Conf. on Supercond. and Magnetism (Antalya, Turkey, 2010), p. 307.
- [7]. O. V. Dobrovolskiy, M. Huth, and V. A. Shklovskij. **Realization of an asymmetric washboard pinning potential in nanostructured thin films of niobium.** Book of Abstracts of the Cryoconference for Young Researches. (Kosice, Slovakia, 2010), p. 5-6.
- [8]. O. V. Dobrovolskiy, E. Begun, M. Huth, and V. A. Shklovskij. **Realization of a washboard pinning potential in thin Nb films decorated by an array of nanoscale ferromagnetic lines.** Book of Abstracts of Int. Conf. on Nanoscale Magnetism (Istanbul, Turkey, 2010), p. 202.
- [9]. O. V. Dobrovolskiy, M. Huth, and V. A. Shklovskij. **Applied aspects of the vortex dynamics in FIB- and FEBID-nanostructured Nb films.** Book of Abstracts of Advances in Appl. Phys. and Mater. Sci. Congr. (Antalya, Turkey, 2011), p. 116.
- [10]. O. V. Dobrovolskiy, M. Huth, and V. A. Shklovskij. **Odd Magnetoresistive Response in Nanostructured Nb Thin Films.** Book of Abstracts of the 26th Int. Conf. on Low Temp. Phys. (Beijing, China, 2011), p. xxx.
- [11]. O. V. Dobrovolskiy, M. Huth, and V. A. Shklovskij. **Magnetoresistive response in thin Nb films with uniaxial ratchet pinning potential.** Book of Abstracts of the 7th Int. Conf. on Vortex Matter in Nanostr. Supercond. (Rhodes, Greece, 2011), p. 142.
- [12]. O. V. Dobrovolskiy, M. Huth, and V. A. Shklovskij. **AC-driven vortex ratchet reversal in superconducting films with asymmetric tilted washboard pinning potential.** Book of Abstracts of the 7th Int. Conf. on Vortex Matter in Nanostr. Supercond. (Rhodes, Greece, 2011), p. 129.
- [13]. O. V. Dobrovolskiy, V. A. Shklovskij, and M. Huth. **Current-controlled filter on superconducting films with a tilted washboard pinning potential.** Proc. of the Supercond. Centennial Conf. (Haague, Netherlands, 2011), p. xxx.

[14]. V. A. Shklovskij, O. V. Dobrovolskiy, and M. Huth. **Temperature-dependent negative real part of the nonlinear impedance in superconducting films with a tilted washboard pinning potential**. Proc. of the Supercond. Centennial Conf. (Haague, Netherlands, 2011), p. xxx.

#### **Patents**

[1] M. Huth, V. A. Shklovskij, and O.V. Dobrovolskiy.  
**Abrikosov Fluxonics**. Patent application under consideration.