

Curriculum Vitae

Name: **Alexey Mashirov**

Place and date of birth: Russia, July 28, 1985

Acad. Degrees: Dip. Eng.

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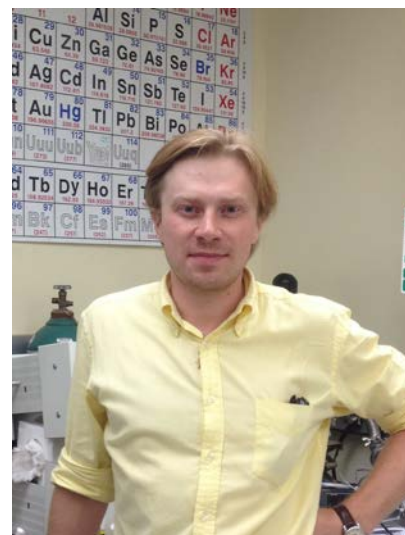
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Education:

2003-2009 Study at Bauman Moscow State Technical University (Bauman MSTU), Moscow, Russia

2009 Dip. Eng. from the Bauman Moscow State Technical University

2012-2014 Study at Academy of Labour and Social Relations, Moscow, Russia

2014 Dip. Master of Law

Relevant work experience

Sciences:

2009- 2012 Post graduate student in Belgorod State University, Department of Physics, Belgorod, Russia

2010-present Scientist in Kotelnikov Institute of Radio Engineering and Electronics Russian Academy of Sciences (IRE RAS), Moscow, Russia

Research areas

- The new scheme of a composite functional material with shape memory effect is experimentally and theoretically investigated, which enables one to get the giant reversible deformation of the composite under the action of heat or a magnetic field using only "one-way" shape memory.
- The Ti-Ni-Cu-alloy is studied experimentally and on it's basis the record of miniature working prototypes of nano-tweezers is created. It was demonstrated that the shape memory effect can manifest itself effectively and used practically at a thickness of shape memory element less than 100 nm. (Material and device are patented).
- The experimental studies of the new ferromagnetic Heusler alloys with magnetocaloric and shape memory effect. The way to control of the giant strains in polycrystalline ferromagnetic Heusler functional alloys due to structural magnetic-field-induced martensitic phase transition is study experimentally.
- The experimental study of magnetic properties of perovskite manganites.

Publications

Since 2010 Mashirov has published about 60 papers, including presentations given at Russian and international conferences and 3 patents of the Russian Federation.

	Web of Science	Scopus
Documents:	9	10
Citations:	21	20
h Index:	4	3

List of current publications

1. D.Zakharov, G.Lebedev, A.Irzhak, V.Afonina, A.Mashirov, V.Kalashnikov, V.Koledov, A.Shelyakov, D.Podgorny, N.Tabachkova, V.Shavrov. Submicron-sized actuators based on enhanced shape memory composite material fabricated by FIB-CVD. *Smart materials and structures*. Vol. 21, № 5, 052001 (2012).
 2. S. Pramanick, S. Chatterjee, S. Giri, S. Majumdar, V.V. Koledov, A. Mashirov, A.M. Aliev, A.B. Batdalov, B. Hernando, W.O. Rosa, L. Gonzalez-Legarreta. Multiple magneto-functional properties of $\text{Ni}_{46}\text{Mn}_{41}\text{In}_{13}$ shape memory alloy. *Journal of Alloys and Compounds*, 578, pp. 157–161 (2013).
 3. Kokorin V. V., Koledov V. V., Shavrov V. G, Konoplyuk S.M., Troyanovsky D. A., Mashirov A. V., Aliev A. M. Phase Hardening in Ferromagnetic Shape-Memory Ni-Mn-In Alloy. *METALLOFIZIKA I NOVEISHIE TEKHNOLOGII* V. 35, pp. 1295-1304 (2013).
 4. Artemy Irzhak, Viktor Koledov, Dmitry Zakharov, Gor Lebedev, Alexey Mashirov, Veronika Afonina, Kristina Akatyeva, Vladimir Kalashnikov, Nikolay Sitnikov, Natalia Tabachkova, Alexander Shelyakov, Vladimir Shavrov. Development of laminated nanocomposites on the bases of magnetic and non-magnetic shape memory alloys: Towards new tools for nanotechnology. *Journal of Alloys and Compounds*, 586, S464–S468 (2014).
 5. A.P. Kamantsev, V.V. Koledov, A.V. Mashirov, E.T. Dilmieva, V.G. Shavrov, J. Cwik, and I.S. Te-reshina. Direct Measurement of Magnetocaloric Effect in Metamagnetic $\text{Ni}_{43}\text{Mn}_{37.9}\text{In}_{12.1}\text{Co}_7$ Heusler Al-loy. *Bulletin of the Russian Academy of Sciences. Physics*, Vol. 78, No. 9, pp. 936–938 (2014).
 6. Rafael Fayzullin, Vasiliy Buchelnikov, Mikhail Drobosyuk, Alexey Mashirov, Alexander Kamantsev, Blanca Hernando, Maxim Zhukov, Victor Koledov and Vladimir Shavrov. Direct and Inverse Magnetocaloric Effect in $\text{Ni}_{1.81}\text{Mn}_{1.64}\text{In}_{0.55}$ Multifunctional Heusler Alloy. *Solid State Phenomena Vols 233-234* (2015) pp 183-186.
 7. Alexander P. Kamantsev, Victor V. Koledov, Alexey V. Mashirov, Elvina T. Dilmieva, Vladimir G. Shavrov, Jacek Cwik, Irina S. Tereshina. Magnetocaloric Effect of Gadolinium at Adiabatic and Quasi-Isothermal Conditions in High Magnetic Fields. *Solid State Phenomena, Vols 233-234*, pp. 216-219 (2015).
 8. Lega, P. V., Koledov, V. V., Kuchin, D. S., Mazaev, P. V., Zhikharev, A. M., Mashirov, A. V., ... & Dikan, V. A. (2015). Simulation of the control process applied to the micromechanical device with the shape memory effect. *Journal of Communications Technology and Electronics*, 60(10), 1124-1133.
 - Kamantsev, A. P., Koledov, V. V., Mashirov, A. V., Dilmieva, E. T., Shavrov, V. G., Cwik, J., ... & Porcari, G. (2015). Properties of metamagnetic alloy $\text{Fe}_{48}\text{Rh}_{52}$ in high magnetic fields. *Bulletin of the Russian Academy of Sciences: Physics*, 79(9), 1086-1088.
 9. Kamantsev, A., Mashirov, A., Mazaev, P., Koledov, V., Shavrov, V., Dikan, V., ... & Shelyakov, A. (2015). Manipulations of Submicro-fibers of *Culex Pipiens* with the Help of Nano-tweezers with Shape Memory Effect into Vacuum Chamber of FIB. *Microscopy and Microanalysis*, 21(S3), 1999-2000.
 10. Kamantsev, A., Dilmieva, E., Mashirov, A., Koledov, V., Shavrov, V., Khovaylo, V., ... & Ari-Gur, P. (2015). Influence of Additional Annealing on Properties of Ni-Mn-In-Co Heusler Alloy. *Microscopy and Microanalysis*, 21(S3), 1757-1758.
 11. Kamantsev, A. P., Koledov, V. V., Mashirov, A. V., Dilmieva, E. T., Shavrov, V. G., Cwik, J., ... & Koshkid'ko, Y. S. (2015). Magnetocaloric and thermomagnetic properties of $\text{Ni}_{2.18}\text{Mn}_{0.82}\text{Ga}$ Heusler alloy in high magnetic fields up to 140 kOe. *Journal of Applied Physics*, 117(16), 163903.
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