

Journal Publications

2019

1. S. Grytsiuk, J. -P. Hanke, M. Hoffmann, J. Bouaziz, O. Gomonay, G. Bihlmayer, S. Lounis, Y. Mokrousov, S. Blügel. Topological chiral magnetic interactions driven by emergent orbital magnetism, arXiv:1904.02369, submitted to Nature
2. R Lebrun, A Ross, O Gomonay, S Bender, L Baldrati, F. Kronast, A. Qaiumzadeh, J. Sinova, A. Brataas, R. Duine, M. Kläui (2019). Anisotropies and magnetic phase transitions in insulating antiferromagnets determined by a Spin-Hall magnetoresistance probe. *Communications Physics*, **2**, N 1
3. V. P. Kravchuk, O. Gomonay, D. D. Sheka, D. R. Rodrigues, K. Everschor-Sitte, J. Sinova, J. van den Brink, Y. Gaididei (2019). [Spin eigen-excitations of an antiferromagnetic skyrmion](#). Accepted to PRB
4. J. Yamane, Y., Gomonay, O., & Sinova, J. (2019). [Dynamics of noncollinear antiferromagnetic textures driven by spin current injection](#), arxiv.org 1901.05684; submitted to PRB

2018

5. Baldrati, L., Gomonay, O., Ross, A., Filianina, M., Lebrun, R., Ramos, R., ... Kläui, M. (2018). [Mechanism of Néel order switching in antiferromagnetic thin films revealed by magnetotransport and direct imaging](#). Submitted to PRL.
6. Gomonay, O., Jungwirth, T., & Sinova, J. (2018). [Narrow-band tunable terahertz detector in antiferromagnets via staggered-field and antidamping torques](#). *Phys. Rev. B*, **98**(10), 104430.
7. Kei Yamamoto, Olena Gomonay, Jairo Sinova, G. Schwiete. Spin transfer torques and spin-dependent transport in a metallic F/AF/N tunneling junction. *Phys. Rev. B*, **98**, 014406 (2018)
8. D. Bossini, S. Dal Conte, G. Cerullo, O. Gomonay, R. V. Pisarev, et al. [Ultrafast quantum dynamics of the order parameter in antiferromagnets induced by femto-nanomagnons](#), submitted to PRB, arxiv:1710.03143
9. Bhattacharjee, N.; Sapozhnik, A. A.; Bodnar, S. Yu.; Grigorev, V. Yu.; Agustsson, S. Y.; Cao, J.; Dominko, D.; Obergfell, M.; Gomonay, O.; Sinova, J.; Kläui, M.; Elmers, H.-J.; Jourdan, M.; Demsar, J. Néel Spin Orbit Torque driven antiferromagnetic resonance in Mn₂Au probed by time-domain THz spectroscopy *Phys. Rev. Lett.* **120**, 237201 (2018)
10. L. Baldrati, A., T. Niizeki, C. Schneider, R. Ramos, J. Cramer, O. Gomonay, M. Filianina, T. Savchenko, D. Heinze, A. Kleibert, E. Saitoh, J. Sinova, M. Kläui. [Negative spin Hall magnetoresistance in epitaxial antiferromagnetic NiO\(001\)/Pt thin films](#) *Phys. Rev. B*, **98**, 024422 (2018)
11. O. Gomonay, K. Yamamoto, and J. Sinova. Spin caloric effects in antiferromagnets assisted by an external spin current. *J. Phys. D: Appl. Phys.* **51** 264004 (2018).
12. Zh. Qiu, Dazi Hou, J. Barker, K. Yamamoto, O. Gomonay, and E. Saitoh. [Spin Colossal Magnetoresistance](#). *Nature Materials*, **17**, 577 (2018).
13. K.-W. Kim, H.-W. Lee, K.-J. Lee, K. Everschor Sitte, O. Gomonay, J. Sinova, [Roles of chiral renormalization on magnetization dynamics in chiral magnets](#) *Phys. Rev. B* **97**, 100402(R) (2018)
14. Olena Gomonay, Vincent Baltz, Arne Brataas, Yaroslav Tserkovnyak. Part of a collection of reviews on antiferromagnetic spintronics. [Antiferromagnetic spin-textures and dynamics](#) *Nature Physics*, **14**, 213 (2018)
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16. S. Yu. Bodnar, L. Šmejkal, I. Turek, T. Jungwirth, O. Gomonay, J. Sinova, A.A. Sapozhnik, H.-J. Elmers, M. Kläui, M. Jourdan. [Writing and Reading antiferromagnetic Mn₂Au: Néel spin-orbit torques and large anisotropic magnetoresistance](#) *Nature communications*, **9**, 348 (2018)

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18. Yamane, Y., Gomonay, O., Velkov, H., & Sinova, J. [Cross effect of magnetic field and charge current on antiferromagnetic dynamics](#). *Phys. Rev. B* **96**, 064408 (2017)
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26. O. Gomonay: [Berry-phase effects and electronic dynamics in noncollinear antiferromagnetic texture](#) *Phys. Rev B* **91**, 144421 (2015).
27. V.V. Popov, V.N. Berzhansky, H.V. Gomonay, F.X. Qin [Understanding of double-curvature shaped magnetoimpedance profiles in Joule-annealed and tensioned microwires at 8-12 GHz](#). *J. Appl. Phys.* **117**, 17A322 (2015).

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33. V. V. Popov and V. N. Berzhansky and H. V. Gomonay and F. X. Qin. [Stress-induced magnetic hysteresis in amorphous microwires probed by microwave giant magnetoimpedance measurements](#). J. Appl. Phys. **113**, 17A326 (2013)
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Conference Proceedings (main)

1. O.V. Gomonay. Spintronics with antiferromagnets: spinning of spins. (*Invited*). EMRS-2014; 09/2014, Poland, Warsaw
2. O.V. Gomonay, V.M. Loktev. Spintronics with antiferromagnets: alternating alternative. (*Invited*). ICFM 2013; 10/2013, Crimea, Haspra
3. S.V. Kondovich, H.V. Gomonay. Current-induced reorientation of antiferromagnet with account of spin-orbit coupling. (*Poster*) ICFM 2013; 10/2013, Crimea, Haspra
4. V.V. Popov, Berzhansky V.N., Qin F.X., Gomonay H.V.: *GMI effect in amorphous microwires in the microwave frequency range* (*Invited*). ICFM 2013; 10/2013, Crimea, Haspra
5. V.V. Popov, Khatsaiuk V.V., Berzhansky V.N., Qin F.X., Gomonay H.V.: *Effect of thermal treatment on GMI profile of Co-rich microwires*. ICFM 2013; 10/2013, Crimea, Haspra
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8. O. V. Gomonay, S. Kondovych, V. Loktev Magnetomechanical and shape effects in antiferromagnetic nanoparticles Міжнародна конференція "Новітні напрями в атомній фізиці та спектроскопії", (20-22.09 2012, м. Ужгород).
9. O. V. Gomonay, V. Loktev Spin torque antiferromagnetic nanooscillator in the presence of noise 4-th Conference on Statistical Physics. Modern Trends and Applications, (03.07.12-06.07.12, Lviv, Ukraine)
10. O. V. Gomonay, V. Loktev Magnetoelastic coupling and possibility of spintronic electromagnetomechanical effects Critical Phenomena under Extreme Impact, (10-13.09.2012, Kharkov. Ukraine)
11. S. Kondovych, O. V. Gomonay, Electric voltage control of shape-induced anisotropy in the synthetic multiferroic with antiferromagnetic layer International Conference for Young Scientists "Low Temperature Physics", 6-10 June 2011, Kharkiv, Ukraine.
12. Ie. G. Korniienko, O. V. Gomonay. Domain structure of the multiferroic BiFeO₃ under external fields and stress International conference "Functional materials - 2011", abstracts p.216 (3.10.11-8.10.11Partenit, Crimea, Ukraine)
13. O. V. Gomonay, R. Kunitsyn, V. Loktev Symmetry and the macroscopic dynamics of antiferromagnetic materials in the presence of spin-polarized current International conference "Functional materials - 2011"(3.10.11-8.10.11Partenit, Crimea, Ukraine)
14. O. V. Gomonay Superconductivity: from physics to quantum information fundamentals (*Invited*) International conference "Functional materials - 2011" (3.10.11-8.10.11Partenit, Crimea, Ukraine)
15. O. V. Gomonay, V. Loktev Current-induced magneto-torsional oscillations in nanorod with antiferromagnetic layer Moscow International Symposium on Magnetism. (Aug. 21-25, 2011, Moscow, Russia)
16. Ie. G. Korniienko, O. V. Gomonay, V. Loktev Driven by stress and magnetic field domain structure of the finite size multiferroic with antiferromagnetic ordering. The European Conference Physics of magnetism-2011 (PM'11, 27.06.11-1.07.11 Poznan, Poland).

17. O. V. Gomonay, V. Loktev Magneto-mechanical oscillations induced by spin-polarized current in antiferromagnetic nanoparticle (*Invited*) MPMNS'2010, May 27-29, Donetsk, Ukraine)
18. O. V. Gomonay, V. Loktev Antiferromagnetic nanooscillator controlled by spin-polarized current (*Poster*) XIII International Conference on Quantum Optics & Quantum Information (May 28-June 1, 2010, Kyiv)
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21. Ye. Pogoryelov, O. V. Gomonay, Application of Hall effects for magnetic nanostructures studies International Conference "Functional Materials" ICFM-2009, Crimea, Partenit, 5-10 Oct., 2009.
22. Ie. G. Kornienko, O. V. Gomonay, Driven by magnetic and electric fields domain structure in BiFeO₃. **SPINSWITCH Summer school „Spin torque transfer and domain wall dynamics,** 14-18 September 2009, (Romania)
23. O. V. Gomonay, V.M.Loktev. From α to ε : magnetoelastic nature of phase transitions in solid oxygen 7th International Conference on Cryocrystals & Quantum Crystals, Wroclaw, July 31- Aug. 5, 2008.
24. O. V. Gomonay, V.M.Loktev. Effects Induced by Spin-polarised Current in Antiferromagnets **SPINSWITCH Workshop „Spin Momentum Transfer” Krakow 3–5 September 2008.**
25. Ye. Kornienko, O. V. Gomonay Antiferromagnetic and Electric Domains in Multiferroic BiFeO₃. SPINSWITCH Workshop „Spin Momentum Transfer” Krakow 3 – 5 September 2008, book of abstract, p117
26. O. V. Gomonay, V.M.Loktev Current-induced dynamics of antiferromagnets Joint European Magnetic Symposia JEMS, Dublin, Ireland, Sept. 14-19, 2008
27. Ye. Pogoryelov, O. V. Gomonay Influence of Magnetic Field on Interlayer Exchange Coupling in M/N/M Film Structures Joint European Magnetic Symposia JEMS, Dublin, Ireland, Sept. 14-19, 2008
28. O. V. Gomonay, A. Fesenko Quantum informatics: new physical approach to data processing 21st International CODATA Conference, Kyiv, Ukraine, 5-8 October 2008
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30. O. V. Gomonay, Ie. Kornienko Domain structure of weak ferromagnets: competition between demagnetization and destressing factors International Conference on Functional Materials, IFCM-2007.
31. O. V. Gomonay, V.M.Loktev Magnetoelastic mechanism of the domain formation in antiferromagnets StatPhys.2005, L'viv, 28-30 August, 2005. Book of Abstracts, p.15
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