

## Prof. Dr. G. Jakob, publication list scientific journals:

Years: [2020](#),  
[2019](#), [2018](#), [2017](#), [2016](#), [2015](#), [2014](#), [2013](#), [2012](#), [2011](#), [2010](#),  
[2009](#), [2008](#), [2007](#), [2006](#), [2005](#), [2004](#), [2003](#), [2002](#), [2001](#), [2000](#),  
[1999](#), [1998](#), [1997](#), [1996](#), [1995](#), [1994](#), [1993](#), [1992](#), [1991](#), [1990](#)

- 242) **Magnetic coupling in  $\text{Y}_3\text{Fe}_5\text{O}_{12}/\text{Gd}_3\text{Fe}_5\text{O}_{12}$  heterostructures**  
S. Becker, Z. Ren, F. Fuhrmann, A. Ross, S. Lord, S. Ding, R. Wu, J. Yang, J. Miao, M. Kläui, and G. Jakob  
Phys. Rev. Appl. **16**, 014047 (2021), [doi: 10.1103/PhysRevApplied.16.014047](https://doi.org/10.1103/PhysRevApplied.16.014047)
- 241) **Modulating the polarization of broadband terahertz pulses from a spintronic emitter at rates up to 10 kHz**  
O. Gueckstock, L. Nadvornik, T.S. Seifert, M. Borchert, G. Jakob, G. Woltersdorf, M. Kläui, M. Wolf, and T. Kampfrath  
Optica **8**, 1013 (2021), [doi: 10.1364/OPTICA.430504](https://doi.org/10.1364/OPTICA.430504)
- 240) **Heisenberg Exchange and Dzyaloshinskii-Moriya Interaction in Ultrathin CoFeB Single and Multilayers**  
Tobias Böttcher, Kyujoon Lee, Frank Heussner, Samridh Jaiswal, Gerhard Jakob, Mathias Kläui, Burkard Hillebrands, Thomas Brächer, Philipp Pirro  
IEEE Transactions on Magnetics **57**, 1600207 (2021), [doi: 10.1109/TMAG.2021.3079259](https://doi.org/10.1109/TMAG.2021.3079259)
- 239) **Broadband Terahertz Probes of Anisotropic Magnetoresistance Disentangle Extrinsic and Intrinsic Contributions**  
Lukáš Nadvorník, Martin Borchert, Liane Brandt, Richard Schlitz, Koen A. de Mare, Karel Výborný, Ingrid Mertig, Gerhard Jakob, Matthias Kläui, Sebastian T. B. Goennenwein, Martin Wolf, Georg Woltersdorf, and Tobias Kampfrath,  
Phys. Rev. X **11**, 021030 (2021), [doi: 10.1103/PhysRevX.11.021030](https://doi.org/10.1103/PhysRevX.11.021030)
- 238) **Terahertz Spin-To-Charge Conversion by Interfacial Skew Scattering in Metallic Bilayers**  
Oliver Gueckstock, Lukáš Nadvorník, Martin Gradhand, Tom Sebastian Seifert, Genaro Bierhance, Reza Rouzegar, Martin Wolf, Mehran Vafae, Joel Cramer, Maria Andromachi Syskaki, Georg Woltersdorf, Ingrid Mertig, Gerhard Jakob, Mathias Kläui, and Tobias Kampfrath  
Adv. Mater. **2021**, 2006281 (2021), [doi: 10.1002/adma.202006281](https://doi.org/10.1002/adma.202006281)
- 237) **Impact of the interplay of piezoelectric strain and current-induced heating on the field-like spin-orbit torque in perpendicularly magnetized Ta/Co<sub>20</sub>Fe<sub>60</sub>B<sub>20</sub>/Ta/MgO film**  
M. Filianina, Z. Wang, L. Baldrati, K. Lee, M. Vafae, G. Jakob, and M. Kläui,  
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- 236) **Electrical detection of the spin reorientation transition in antiferromagnetic TmFeO<sub>3</sub> thin films by spin Hall magnetoresistance**  
S. Becker, A. Ross, R. Lebrun, L. Baldrati, S. Ding, F. Schreiber, F. Maccherozzi, D. Backes, M. Kläui, and G. Jakob,  
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- 235) **Description of intermodulation generation of nonlinear responses beyond the validity of the power series expansion**  
F. Bergmann, M. Letz, H. Maune, and G. Jakob,  
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- 234) **Rapid online solid-state battery diagnostics with optically pumped magnetometers**  
Yinan Hu, Geoffrey Z. Iwata, Lykourgos Bougas, John W. Blanchard, Arne Wickenbrock, Gerhard Jakob, Stephan Schwarz, Clemens Schwarzinger, Alexej Jerschow, and Dmitry Budker, *Appl. Sci.* **10**, 7864 (2020), [doi: 10.3390/app10217864](https://doi.org/10.3390/app10217864)
- 233) **Harnessing non-local orbital-to-spin conversion of interfacial orbital currents for efficient spin-orbit torques**  
Shilei Ding, Andrew Ross, Dongwook Go, Lorenzo Baldrati, Zengyao Ren, Frank Freimuth, Sven Becker, Fabian Kammerbauer, Jinbo Yang, Gerhard Jakob, Yuriy Mokrousov, Mathias Kläui, *Phys. Rev. Lett.* **125**, 177201 (2020), [doi: 10.1103/PhysRevLett.125.177201](https://doi.org/10.1103/PhysRevLett.125.177201)
- 232) **Enhancement of Spin Hall Conductivity in W-Ta alloy**  
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- 231) **Impact of Annealing Temperature on Tunneling Magnetoresistance Multilayer Stacks**  
Leo Schnitzspan, Joel Cramer, Jan Kubik, Tareq Tarequzzaman, Gerhard Jakob, and Mathias Kläui, *IEEE Mag. Lett.* **11**, 4503705 (2020), [doi: 10.1109/LMAG.2020.3005381](https://doi.org/10.1109/LMAG.2020.3005381)
- 230) **Phonon Bridge Effect in Superlattices of Thermoelectric TiNiSn/HfNiSn With Controlled Interface Intermixing**  
Sven Heinz, Emigdio Chavez Angel, Maximilian Trapp, Hans-Joachim Kleebe, and Gerhard Jakob, *Nanomaterials* **10**, 1239 (2020), [doi: 10.3390/nano10061239](https://doi.org/10.3390/nano10061239)
- 229) **Spin-orbit torque driven multi-level switching in He<sup>+</sup> irradiated W-CoFeB-MgO Hall bars with perpendicular anisotropy**  
Xiaoxuan Zhao, Yang Liu, Daoqian Zhu, Mamour Sall, Xueying Zhang, Helin Ma, Jürgen Langer, Berthold Ocker, Samridh Jaiswal, Gerhard Jakob, Mathias Kläui, Weisheng Zhao, and Dafiné Ravelosona, *Appl. Phys. Lett.* **116**, 242401 (2020), [doi: 10.1063/5.0010679](https://doi.org/10.1063/5.0010679)
- 228) **Electric-field control of spin-orbit torques in perpendicularly magnetized W/CoFeB/MgO film**  
Mariia Filianina, Jan-Philipp Hanke, Kyujoon Lee, Dong-Soo Han, Samridh Jaiswal, Adithya Rajan, Gerhard Jakob, Yuriy Mokrousov, and Mathias Kläui, *Phys. Rev. Lett.* **124**, 217701 (2020), [doi: 10.1103/PhysRevLett.124.217701](https://doi.org/10.1103/PhysRevLett.124.217701)
- 227) **Current induced chiral domain wall motion in CuIr/CoFeB/MgO thin films with strong higher order spin-orbit torques**  
Franziska Martin, Kyujoon Lee, Alexander Kronenberg, Samridh Jaiswal, Robert Reeve, Mariia Filianina, Sanghyun Ji, Myung-Hwa Jung, Gerhard Jakob, and Mathias Kläui, *Appl. Phys. Lett.* **116**, 132410 (2020), [doi: 10.1063/1.5139704](https://doi.org/10.1063/1.5139704)
- 226) **The challenges in realizing an exchange coupled BiFeO<sub>3</sub> – double perovskite ferrimagnet bilayer**  
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- 225) **Propagation Length of Antiferromagnetic Magnons Governed by Domain Configurations**  
Andrew Ross, Romain Lebrun, Olena Gomony, Daniel Grave, Asaf Kay, Lorenzo Baldrati, Sven Becker, Alireza Qaiumzadeh, Camilo Ulloa, Gerhard Jakob, Florian Kronast, Jairo Sinova, Rembert Duine, Arne Brataas, Avner Rothschild, and Mathias Kläui, *Nano Lett.* **20**, 306 (2020), [doi: 10.1021/acs.nanolett.9b03837](https://doi.org/10.1021/acs.nanolett.9b03837)

- 224) **Individual skyrmion manipulation by local magnetic field gradients**  
Arianna Casiraghi, Hector Corte-Leon, Mehran Vafaei, Felipe Garcia-Sanchez, Gianfranco Durin, Massimo Pasquale, Gerhard Jakob, Mathias Kläui, and Olga Kazakova,  
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- 223) **Hole Localization in Thermoelectric Half-Heusler (Zr<sub>0.5</sub>Hf<sub>0.5</sub>)Co(SbSn<sub>x</sub>) Thin Films**  
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- 222) **Interfacial Dzyaloshinskii–Moriya interaction and chiral magnetic textures in a ferrimagnetic insulator**  
Shilei Ding, Andrew Ross, Romain Lebrun, Sven Becker, Kyujoon Lee, Isabella Boventer, Souvik Das, Yuichiro Kurokawa, Shruti Gupta, Jinbo Yang, Gerhard Jakob, Mathias Kläui,  
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- 221) **Enhancing domain wall velocity through interface intermixing in W-CoFeB-MgO films with perpendicular anisotropy**  
Xiaoxuan Zhao, Boyu Zhang, Nicolas Vernier, Xueying Zhang, Mamour Sall, Tao Xing, Liza Herrera Diez, Carolyn Hepburn, Lin Wang, Gianfranco Durin, Arianna Casiraghi, Mohamed Belmeguenai, Yves Roussign, Andrei Stashkevich, Salim Mourad Cherif, Jürgen Langer, Berthold Ocker, Samridh Jaiswal, Gerhard Jakob, Mathias Kläui, Weisheng Zhao, and Dafine Ravelosona,  
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- 220) **Antenna-coupled spintronic terahertz emitters driven by a 1550 nm femtosecond laser oscillator**  
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- 219) **Enhanced thermoelectric properties of lightly Nb doped SrTiO<sub>3</sub> thin films**  
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- 217) **Gilbert damping of CoFe-alloys**  
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- 216) **High sensitivity characterization of the nonlinear electric susceptibility of a glass ceramic in the microwave range**  
Florian Bergmann, Martin Letz, Holger Maune, and Gerhard Jakob,  
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- 215) **Tuning of interfacial perpendicular magnetic anisotropy and domain structures in magnetic thin film multilayers**  
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- 214) **Impact of pump wavelength on terahertz emission of a cavity-enhanced spintronic trilayer**  
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- 213) **Microstructure design for fast lifetime measurements of magnetic tunneling junctions**, Andres Conca, Frederick Casper, Johannes Paul, Ronald Lehndorff, Christian Haupt, Gerhard Jakob, Matthias Kläui and Burkard Hillebrands, *Sensors* **19**, 583 (2019); [doi: 10.3390/s19030583](https://doi.org/10.3390/s19030583)
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- 212) **Determining the Magnetite/Maghemite Composition and Core-Shell Nanostructure from Magnetization Curve for Iron Oxide Nanoparticles** Hamed Sharifi Dehsari, Vadim Ksenofontov, Angela Möller, Gerhard Jakob, Kamal Asadi, *J. Phys. Chem. C* **122**, 28292 (2018); [doi: 10.1021/acs.jpcc.8b06927](https://doi.org/10.1021/acs.jpcc.8b06927)
- 211) **High-Performance Flexible Magnetic Tunnel Junctions for Smart Miniaturized Instruments** Selma Amara, Gallo A. Torres Sevilla, Mayyada Hawsawi, Yousof Mashraei, Hanan Mohammed, Melvin E. Cruz, Yurii P. Ivanov, Samridh Jaiswal, Gerhard Jakob, Mathias Kläui, Muhammad Hussain, and Jürgen Kosel, *Advanced Engineering Materials* **20**, 1800471 (2018); [doi: 10.1002/adem.201800471](https://doi.org/10.1002/adem.201800471)
- 210) **Large modulation of perpendicular magnetic anisotropy in a BiFeO<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub>/Pt/Co/Pt multiferroic heterostructure via spontaneous polarizations** P. F. Liu, J. Miao, Z. D. Xu, G. Jakob, Q. Liu, Z. Y. Ren, K. K. Meng, Y. Wu, J. K. Chen, X. G. Xu, and Y. Jiang, *Appl. Phys. Lett* **113**, 1062401 (2018); [doi: 10.1063/1.5040876](https://doi.org/10.1063/1.5040876)
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- 208) **Terahertz spectroscopy for all-optical spintronic characterization of the spin-Hall-effect metals Pt, W and Cu<sub>80</sub>Ir<sub>20</sub>** T.S. Seifert, N.M. Trinh, O. Gueckstock, S.M. Rouzegar, L. Nadvornik, S. Jaiswal, G. Jakob, V.V. Temnov, M. Muenzenberg, M. Wolf, M. Kläui, and T. Kampfrath, *Journal of Physics D* **51**, 364003 (2018), [doi: 10.1088/1361-6463/aad536](https://doi.org/10.1088/1361-6463/aad536).
- 207) **Femtosecond formation dynamics of the spin Seebeck effect revealed by terahertz spectroscopy** Tom Seifert, Samridh Jaiswal, Joseph Barker, Sebastian T. Weber, Ilya Razdolski, Joel Cramer, Oliver Gueckstock, Sebastian Maehrlein, Lukas Nadvornik, Shun Watanabe, Chiara Ciccarelli, Alexey Melnikov, Gerhard Jakob, Markus Muenzenberg, Sebastian T.B. Goennenwein, Georg Woltersdorf, Baerbel Rethfeld, Piet W. Brouwer, Martin Wolf, Mathias Kläui, Tobias Kampfrath, *Nature Commun.* **9**, 2899 (2018), [doi: 10.1038/s41467-018-05135-2](https://doi.org/10.1038/s41467-018-05135-2)
- 206) **Magnetic Exchange Interaction in Nitronyl Nitroxide Radical-Based Single Crystals of 3d Metal Complexes: A Combined Experimental and Theoretical Study**, Pramod Bhatt, Kubandiran Kolanji, Anela Ivanova, Arvind Yogi, Gerhard Jakob, Mayuresh D. Mukadam, Seikh Mohammad Yusuf, and Martin Baumgarten, *ACS Omega* **3**, 2918 (2018); [doi: 10.1021/acsomega.7b01669](https://doi.org/10.1021/acsomega.7b01669)
- 205) **Complex THz and DC inverse spin Hall effect in YIG/Cu<sub>1-x</sub>Ir<sub>x</sub> bilayers across a wide concentration range**, Joel Cramer, Tom Seifert, Alexander Kronenberg, Felix Fuhrmann, Gerhard Jakob, Martin Jourdan, Tobias Kampfrath, Mathias Kläui, *Nano Lett* **18**, 1064 (2018); [doi: 10.1021/acs.nanolett.7b04538](https://doi.org/10.1021/acs.nanolett.7b04538)
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- 202) **Alloy-like behaviour of the thermal conductivity of nonsymmetric superlattices**  
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- 201) **Temperature dependence of the non-local spin Seebeck effect in YIG/Pt nanostructures**  
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- 200) **Investigation of the Dzyaloshinskii-Moriya interaction and room temperature skyrmions in  
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- 199) **Probing ultrafast changes of a vertical spin density profile with resonant XUV**  
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- 198) **Synergy of Miniemulsion and Solvothermal Conditions for the Low Temperature  
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- 197) **Ultrabroadband single-cycle terahertz pulses with peak fields of 300 kV cm<sup>-1</sup> from a metallic  
spintronic emitter**  
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- 196) **Reconstruction of an effective magnon mean free path distribution from spin Seebeck  
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- 195) **CADEM - Calculate X-ray Diffraction of Epitaxial Multilayers**  
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- 194) **Influence of Thickness and Interface on the Low-Temperature Enhancement of the Spin  
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- 193) **Quantitative analysis of magnetization reversal in Ni thin films on unpoled and poled (011)  
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- 192) **Tailoring of the electrical and thermal properties using ultra-short period non-symmetric superlattices**  
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- 190) **Efficient metallic spintronic emitters of ultrabroadband terahertz radiation**  
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- 188) **Half-Heusler superlattices as model systems for nanostructured thermoelectrics**  
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- 187) **The effect of interface roughness on exchange bias in La<sub>0.7</sub>Sr<sub>0.3</sub>MnO<sub>3</sub> - BiFeO<sub>3</sub> heterostructures**  
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