

List of selected publications
Prof. Dr. Faley Michael I.

2022

M. I. Faley and R. E. Dunin-Borkowski “A Self-Flux-Biased NanoSQUID with Four NbN-TiN-NbN Nanobridge Josephson Junctions” *Electronics* **11** 1704 (12pp) (2022). <https://doi.org/10.3390/electronics11111704>

Faley M I, Fiadziushkin H, Frohn B, Schüffelgen P and Dunin-Borkowski R E 2022 TiN nanobridge Josephson junctions and nanoSQUIDs on SiN-buffered Si, *Supercond. Sci. Technol.* **35** 065001 (10pp); <https://doi.org/10.1088/1361-6668/ac64cd>

2021

M. I. Faley, T. Bikulov, V. Bosboom, A. A. Golubov, and R. E. Dunin-Borkowski “Bulk nanomachining of cantilevers with Nb nanoSQUIDs based on nanobridge Josephson junctions”, *Superconductor Science and Technology* **34** 035014 (8pp) (2021). <https://doi.org/10.1088/1361-6668/abda5c>

M. I. Faley, Y. Liu, and R. E. Dunin-Borkowski “Titanium Nitride as a New Prospective Material for NanoSQUIDs and Superconducting Nanobridge Electronics” *Nanomaterials* **11**, 466 (12pp) (2021). <https://doi.org/10.3390/nano11020466>

2020

M. I. Faley, P. Reith, C D Satrya, V S Stolyarov, B Folkers, A A Golubov, H Hilgenkamp, and R E Dunin-Borkowski “**MoRe/YBa₂Cu₃O_{7-x} Josephson junctions and π -loops**”, *Superconductor Science and Technology* **33** 044005 (12pp) (2020). <https://doi.org/10.1088/1361-6668/ab7053>.

R. Rodrigo, M. I. Faley and R. E. Dunin-Borkowski, “**NanoSQUIDs based on Nb nanobridges**”, *Journal of Physics: Conference Series* **1559** 012011 (2020). doi:10.1088/1742-6596/1559/1/012011

A. G. Shishkin, , O. V. Skryabina, V. L. Gurtovoi, S. E. Dizhur, M. I. Faley, A. A. Golubov and V. S. Stolyarov “**The planar MoRe-based dc nanoSQUID**”, *Superconductor Science and Technology*, **33** 065005 (2020) <https://doi.org/10.1088/1361-6668/ab877c>

Shao-Bo Mi, Tian Yao, Shao-Dong Cheng, Micheal I. Faley, Ulrich Poppe, Lu Lu, Dawei Wang, and Chun-Lin Jia, “Atomic-scale imaging of interfacial polarization in cuprate-titanate heterostructures”, *Appl. Phys. Lett.* **116**, 251603 (2020); <https://doi.org/10.1063/5.0011081>

2019

M.I.Faley, P.Reith, V.S.Stolyarov, I.A.Golovchanskiy, A.A.Golubov, H.Hilgenkamp, and R.E.Dunin-Borkowski, “ **π -Loops with ds Josephson Junctions**” *IEEE Transactions on Appl. Supercond.*, vol. 29, no. 5, August 2019, Art. no.1100405. DOI: 10.1109/TASC.2019.2892078.

2018

M. I. Faley, Y. V. Maslennikov, V. P. Koshelets, and R. E. Dunin-Borkowski, “**Flip-Chip High-T_c DC SQUID Magnetometer With a Ferromagnetic Flux Antenna**” *IEEE Transactions on Appl. Supercond.*, **28**, No.4, 1600505 (2018).

M.I.Faley, E.A.Kostyurina, K.V.Kalashnikov, Yu.V.Maslennikov, V.P.Koshelets, and R.E.Dunin-Borkowski, “**Superconducting Quantum Interferometers for Nondestructive Evaluation**”, **Chapter in book “Intelligent Sensing Technologies for Nondestructive Evaluation”**, ISBN 978-3-03842-877-0 (Pbk); ISBN 978-3-03842-878-7 (PDF), Edited by Seunghee Park, Aimé Lay-Ekuakille, Octavian Postolache and Pedro Silva Girão; Basel, Switzerland; MDPI Books; pp. 192-207 (2018). <https://doi.org/10.3390/books978-3-03842-878-7>

2017

Faley M.I., Kostyurina E.A., Kalashnikov K.V., Maslennikov Yu.V., Koshelets V.P., Dunin-Borkowski R.E.
“Superconducting Quantum Interferometers for Nondestructive Evaluation”
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M. I. Faley, J. Dammers, Y. V. Maslennikov, J. F. Schneiderman, D. Winkler, V. P. Koshelets, N. J. Shah, and R. E. Dunin-Borkowski,
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Superconductor Science and Technology, **30**, 083001 (2017).

M. I. Faley, E. A. Kostyurina, P. Diehle, U. Poppe, A. Kovacs, Yu. V. Maslennikov, V. P. Koshelets and R. E. Dunin-Borkowski, “Nondestructive Evaluation Using a High-T_c SQUID Microscope”, *IEEE Transactions on Appl. Supercond.*, **27**, No.4, 1600905 (2017).

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M. I. Faley, V. Yu. Slobodchikov, Yu. V. Maslennikov, V. P. Koshelets and R. E. Dunin-Borkowski, “High-T_c Dual-SQUIDS With Graphoepitaxial Step-Edge Junctions”, *IEEE Transactions on Appl. Supercond.*, **26**, No.3, 1600404 (2016).

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M. I. Faley and U. Poppe, Patent “Sputterquellen für Hochdruckspattern mit großen Targets und Sputterverfahren”, JP5934227 granted 16.06.2016 and EP2630650 granted 28.09.2016.

M. I. Faley, U. Poppe and R. L. Fagaly “Electrical resistance elements and measuring system for measuring time-variable magnetic fields or field gradients”, Patent US9476950B2 granted 25.10.2016.

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M. I. Faley, I. A. Gerasimov, O. M. Faley, H. Chocholacs, J. Dammers, E. Eich, F. Boers, N. J. Shah, A.S.Sobolev, V. Yu. Slobodchikov, Yu. V. Maslennikov, V. P. Koshelets and R. E. Dunin-Borkowski, “Integration issues of graphoepitaxial high-T_c SQUIDS into multichannel MEG systems”. *IEEE Transactions on Applied Superconductivity*, **25**, No.3, 1601605 (2015) DOI: 10.1109/TASC.2014.2365098.

Valery P. Koshelets, Pavel N. Dmitriev, Michael I. Faley, Lyudmila V. Filippenko, Konstantin V. Kalashnikov, Nickolay V. Kinev, Oleg S. Kiselev, Anton A. Artanov, Kirill I. Rudakov, Arno de Lange, G. de Lange, Vladimir L. Vaks, M. Y. Li, and Huabing Wang, “Superconducting Integrated Terahertz Spectrometers”, *IEEE Transactions on Terahertz Science and Technology*, **5**, No. 4, pp. 687 – 694, July 2015.

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M. I. Faley and U. Poppe, "Supraleitender Magnetfeldstabilisator" Patent pending DE102014003536 (2014).

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M. I. Faley, U. Poppe, D. Meertens, O. M. Faley, C. L. Jia, R. E. Dunin-Borkowski, "Epitaxy and graphoepitaxy of oxide heterostructures on step edges", In: "emc2012 Proceedings of the 15th European Microscopy Congress", 16th - 21st September 2012, Manchester, UK", Volume 1: Physical Sciences: Applications, Edited by D.J.Stokes and W.M.Rainforth, © The Royal Microscopical Society, ISBN 978-0-9502463-5-2, pp. 307-308 (2012).

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