# Maksim S. Rakitin

Bio

#### Personal details

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## Education and training

2008.10-2012.09

Ph.D. in Condensed Matter Physics (defended on September 19, 2012) South Ural State University (National Research University), Chelyabinsk, Russia



2006.09-2008.06

M.S. in Applied Mathematics and Physics (June 13, 2008)

South Ural State University (SUSU), Chelyabinsk, Russia

2002.09-2006.06

B.S. in Applied Mathematics and Physics (June 20, 2006), summa cum laude South Ural State University (SUSU), Chelyabinsk, Russia

## Research and professional expertise



Associate Computational Scientist, DAMA group, NSLS-II, Brookhaven National Laboratory, Upton, NY (https://www.bnl.gov)

2015.12-2017.10

Research Associate (Postdoc), NSLS-II, Brookhaven National Laboratory, Upton, (https://www.bnl.gov)



Postdoctoral Associate (Postdoc), Department of Geosciences, Stony Brook University, Stony Brook, NY (https://stonybrook.edu, https://uspex-team.org/en)



QA Engineer, QΑ Team Leader, Applied Technologies Ltd., Chelyabinsk, (http://www.appliedtech.ru), a partner of Rocket Software Inc., USA (https://www.rocketsoftware.com)

## Software projects

- o Bluesky a library for experiment control and collection of scientific data and metadata, https://blueskyproject.io/bluesky.
- Ophyd a device abstraction library, https://blueskyproject.io/ophyd.
- o Databroker a simple, user-friendly interface for retrieving stored data and metadata from multiple sources, https://blueskyproject.io/databroker.
- o Synchrotron Radiation Workshop (SRW) computer code for X-ray source and optics simulations, https://github.com/mrakitin/SRW.
- Sirepo a cloud-based framework for SRW, https://github.com/radiasoft/sirepo.
- Databroker extractor image processing data visualization, https://github.com/mrakitin/databroker-extractor.
- o CRL simulator a code for simulation of a transfocator (compound refractive lenses (CRL) for X-ray focusing), https://github.com/mrakitin/bnlcrl.
- o **USPEX** a code for evolutionary crystal structure prediction, https://uspex-team.org/en.

- o USPEX online utilities a set of pre- and post-processing tools for crystal structure simulations, http://han.ess.sunysb.edu.
- o USPEX manual http://han.ess.sunysb.edu/uspex\_manual.
- Utilities for DFT simulations
- o IBM Mainframe software projects

#### **Publications**

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- M. S. Rakitin, A. Giles, K. Swartz, J. Lynch, P. Moeller, R. Nagler, D. B. Allan, T. A. Caswell, L. Wiegart, O. Chubar, and Y. Du, "Introduction of the Sirepo-Bluesky interface and its application to the optimization problems," in Advances in Computational Methods for X-Ray Optics V (O. Chubar and K. Sawhney, eds.), vol. 11493, pp. 209 - 226, International Society for Optics and Photonics, SPIE, 2020.
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- A. Blednykh, B. Bacha, G. Bassi, W. Cheng, O. Chubar, A. Derbenev, R. Lindberg, M. Rakitin, V. Smaluk, M. Zhernenkov, Y.-c. K. Chen-Wiegart, and L. Wiegart, "New aspects of longitudinal instabilities in electron storage rings (DOE Science Highlight)," Scientific Reports, vol. 8, no. 1, p. 11918, 2018.
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- 19. M. Rakitin, A. A. Mirzoev, and D. A. Mirzaev, "First-Principles and Thermodynamic Simulation of Elastic Stress Effect on Energy of Hydrogen Dissolution in Alpha Iron," Russian Physics Journal, vol. 60, pp. 2136-2143, Apr
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