Dmitry Bondar

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Education

Ph.D. Experimental Petrology (Very good), Bayerisches Geoinstitut, Bayreuth, Germany (2022)

M.Sc. Igneous Petrology (GPA: 4.9 / 5), Moscow State University, Moscow, Russia (2017)

B.A. Mining Geology (GPA: 4.2 / 5), Saint Petersburg State University, St. Petersburg, Russia (2015)

Experience

Postdoc, Bayerisches Geoinstitut, Bayreuth, Germany **& Institute of Science, Technology and Sustainability for Ceramics**, National Research Council, Faenza, Italy (08.2022 – present)

Developing rapid-quench multi-anvil and falling-sphere techniques, investigating nanocrystallization, and studying the dissolution mechanisms of volatiles and their effects on the physical and chemical properties of silicate melts

Lead Engineer, IGEM of the Russian Academy of Sciences, Moscow, Russia (09.2015 – 10.2017)

As part of a joint project between the geochemistry/geochronology and petrography labs, dated ore-forming processes in the Zun-Holba gold deposit by determining the age of wall-rock alteration

Geologist, Russian Copper Company, Southern Ural, Russia (07.2017)

Collected samples for ore mineralogical studies in the Mikheevskoe Cu-porphyry deposit

Lab Analyst, Fersman Mineralogical Museum, Moscow, Russia (03.2016 – 03.2017)

Prepared lab samples and performed ICP-OES analysis

Geologist, Nord Gold N.V., East Sayan, Buryatia, Russia (06.2016)

Collected samples for dating near-ore metasomatic rocks in the Zun-Holba gold mine

Assistant Geologist, Tellur Northeast, Buryatia, Russia (07.2014 – 09.2014)

Participated in search and exploration of gold occurrences in the Kedrovsky ore field

Summer Intern, Saint Petersburg State University, St. Petersburg, Russia (summers, 2012 – 2014)

Participated in three two-month field camps in geology, geochemistry, and geodesy

Speleo Guide, Sablinsky Nature Reserve, Saint Petersburg, Russia (07.2012 – 07.2015)

Guided tour groups on nature hikes through caves, canyons, and waterfalls around the reserve

Outreach and service

- Session chair, International Workshop “Development of multi-anvil technology and its applications to lower-mantle research and material sciences”, Bayreuth, Germany, 2020, 2021
- Organized and assisted with guiding an educational tour of unique geological sites of Iceland, 2018
- Translated and assisted with guiding field trips at XXXIV International Conference “Magmatism of the Earth and related strategic metal deposits”, Miass (Ural Mountains), Russia, 2017

- Organized an educational tour of geological sites in the western United States, including the Grand Canyon, Meteor Crater, Petrified Forest, Bryce Canyon and Yellowstone, 2016 and 2019
- Judge at Geology Olympiad held at Moscow State University, 2016 – 2018, 2021, 2022
- Taught a minerals course at the School of Young Geologists of the Moscow State University, 2016
- Organized and assisted with guiding an educational tour of volcanoes around Naples, Italy, 2016

Honors and Awards

- Second place paper award in the geology section, Congress of practice results, Moscow, 2016
- Third place paper award in the physics and chemistry of minerals section, Conference on Modern Research Methods in Geology, Saint Petersburg, 2016
- Recipient of the 2015 Kudryavtseva scholarship awarded to three top MSU geochemistry students
- First place winner of the 2015 Lomonosov Olympiad in geology held at Moscow State University

Publications

Submitted or in prep:

- Fanesi E., Di Genova D., Valdivia P., **Bondar D.**, Dominijanni S., Abeykoon S., Giuliani G., Kurnosov A., Giordano G., Cassetta M., Vona A., Romano C. and Arzilli F. (submitted to Journal of volcanology and geothermal Research). A review of the differential scanning calorimetry shift–factor approach: application to Colli Albani melt viscosity and implications for mafic Plinian eruptions.
- Di Fiore Fabrizio., Vona A., Di Genova D., Caracciolo A., Pontesilli A., Calabrò Laura., Giuliani G., Mollo S., **Bondar D.**, Nazzari M., Romano C. and Scarlato P. (submitted to Communications earth & environment). Impact of cooling rate on flowability and emplacement dynamics of basaltic lavas: new insights from the 2024 Sundhnúksgígar eruption (Iceland).
- Valdivia P., Zandonà A., Löschmann J., **Bondar D.**, Genevois C., Canizarès A., Allix M., Miyajima N., Kurnosov A., Boffa Ballaran T., Di Fiore F., Vona A., Romano C., Deubener J., Bamber E. C. and Di Genova D. (submitted to Communications earth & environment). Nanoscale chemical heterogeneities control magma viscosity.
- **Bondar D.**, Withers A.C., Genova D.D., Wiedenbeck M., Bureau H., Khodja H., Couffignal F., Kurnosov A., Fei H. and Katsura T. (in preparation). Compositional dependence of molar absorptivities for infrared absorption bands of H_2O in rhyolitic to peridotitic glasses.
- Purevjava N., Wang F., Fei H., Criniti G., Ishii T., **Bondar D.**, Lin Y., Mao Ho-K., Lee S.K., Bureau H., Hicham Khodja H. and Katsura T. (in preparation). Pressure dependence of H_2O solubility in Al-free stishovite, a major water carrier into the lower mantle.

Peer reviewed:

- **Bondar D.**, Canizarès A., Bilardello D., Valdivia P., Zandonà A., Romano C., Allix M., Di Genova D. (accepted to Geochemistry, Geophysics. Geosystems). Nanolite crystallization in volcanic glasses: insights from high-temperature Raman spectroscopy and low-temperature rock-magnetic analysis.
- Chugaev A.V., Anikina E.Y., Bortnikov N.S., Aristov V.V., Travin A.V., **Bondar D.**, Rassokhin I.V. and Oleynikova T.I. (2024). A mantle–plume model for the formation of the Zun-Kholba orogenic gold deposit (Eastern Sayan, Russia): mineralogical results, Rb–Sr and ^{40}Ar–^{39}Ar geochronological and Pb–Pb isotope studies. Geology of Ore Deposits, 66(3), 276-303.
- Plotinskaya O.Y., Zu B., Seltmann R., Najorka J., **Bondar D.**, Abramova V.D., Li C., Spratt J., Bergal-Kuvikas O. and Belogub E. (2023). Tectonic history of the Urals as stored in molybdenites of porphyry and greisen deposits. Earth-Science Reviews, (247), 104609.
- Di Genova D., **Bondar D.**, Zandona A., Valdivia P., Al-Mukadam R., Fei H., Withers A.C., Boffa-Ballaran T., Kurnosov A., McCammon C., Deubener J. and Katsura T. (2023). Viscosity of anhydrous and hydrous peridotite melts. Chemical Geology, (625), 121440.
- Chanyshev A., Fei H., **Bondar D.**, Wang B., Liu Z., Ishii T., Farla R., McCammon C. and Katsura T. (2023). Ferric iron substitution mechanism in bridgmanite under SiO_2-saturated conditions at 27 GPa. ACS Earth and Space Chemistry, (2), 471-478.
- **Bondar D.**, Withers A.C., Whittington A.G., Fei H. and Katsura T. (2023). Dissolution mechanisms of water in depolymerized silicate (peridotitic) glasses based on infrared spectroscopy. Geochimica et Cosmochimica Acta, (342), 45-61.
- Chugaev A.V., Plotinskaya O.Y., Dubinina E.O., Stepanov S.Y., Gareev B.I., Batalin G.A., Rassokhina I.V., Chizhova J.N., **Bondar D.** and Abramova V.D. (2022). Mixed crustal-mantle source of porphyry Cu-Mo deposits of the Urals: Pyrite trace element geochemistry and Pb-S isotope data. Journal of Geochemical Exploration, (242), 107075.
- **Bondar D.**, Zandonà A., Withers A.C., Fei H., Di Genova D., Miyajima N. and Katsura T. (2022). Rapid-quenching of high-pressure depolymerized hydrous silicate (peridotitic) glasses. Journal of Non-Crystalline Solids, (578), 121347.
- Chanyshev A., Ishii T., **Bondar D.**, Bhat S., Kim E.J., Farla R., Nishida K., Liu Z., Wang L., Nakajima A., Yan B., Tang H., Chen Z., Higo Y., Tange Y. and Katsura T. (2022). Depressed 660-km discontinuity caused by akimotoite-bridgmanite transition. Nature, (601), 69-73.

- Chanyshev A., **Bondar D.**, Fei H., Purevjav N., Ishii T., Nishida K., Bhat S., Farla R. and Katsura T. (2021). Determination of phase relations of the olivine–ahrensite transition in the Mg_2SiO_4–Fe_2SiO_4 system at 1740 K using modern multi-anvil techniques. Contributions to Mineralogy and Petrology, (176), 1-10.
- **Bondar D.**, Fei H., Withers A.C., Ishii T., Chanyshev A. and Katsura T. (2021). A simplified rapid-quench multi-anvil technique. Review of Scientific Instruments, (92), 113902.
- Xie L., Chanyshev A., Ishii T., **Bondar D.**, Nishida K., Chen Z., Bhat S., Farla R., Higo Y., Tange Y. and Su X. (2021). Simultaneous generation of ultrahigh pressure and temperature to 50 GPa and 3300 K in multi-anvil apparatus. Review of Scientific Instruments, (92), 103902.
- **Bondar D.**, Fei H., Withers A.C. and Katsura T. (2020). A rapid-quench technique for multi-anvil high-pressure-temperature experiments. Review of Scientific Instruments (91), 065105.
- Liu Z., McCammon C., Wang B., Dubrovinsky L., Ishii T., **Bondar D.**, Nakajima A., Tange Y., Higo Y., Cui T., Liu B. and Katsura T. (2020). Stability and solubility of the $FeAlO_3$ component in bridgmanite at uppermost lower mantle conditions. Journal of Geophysical Research: Solid Earth (125), 018447.
- Plotinskaya O.Y., Chugaev A.V., **Bondar D. B.** and Abramova V.D. (2019). Mineralogy and Geochemistry of Ores of the Kedrovskoe-Irokinda Ore Field (Northern Transbaikalia). Russian Geology and Geophysics (60), 1119-1140
- **Bondar D.B.**, Chugaev A.V., Polekhovski Y.S. and Koshlyakova N.N. (2018). The ore mineralogy of the Kedrovskoe gold deposit (the Muya region, the Republic of Buryatia, Russia). Moscow University Geology Bulletin (73), 380-389.

Abstracts

More than 20 in total; full list is available upon request.