# CURRICULUM VITAE

Name: SERGEY SMIRNOV
Qualification: PhD, mineralogy and crystallography; DSc, petrology, volcanology

**Birth date and place:** September 16, 1966, Novosibirsk, Russia

**Work address:** Russia, 630090, Novosibirsk, pr. ac. Koptyuga, 3, IGM SB RAS
Phone: +7-383-373-0526 add 305 (office); +7-913-9279755 (cell)
E-mail: ssmr@igm.nsc.ru

## CURRENT POSITION:

- Vice director (full time) of V.S. Sobolev's Institute of geology and mineralogy, Siberian Branch of Russian Academy of Sciences
- Professor (part time) Novosibirsk State University

## AREAS OF INTEREST

- Mineralogy
- Magmatic petrology and fluids in the Earth
- Evolution of volcanic reservoirs

## EDUCATION AND QUALIFICATION

| Year | Institution | Degree or qualification |
|---|---|---|
| 1988 | Novosibirsk State University | Geologist (specialist) |
| 1997 | Institute of mineralogy and petrography SB RAS | PhD, mineralogy and crystallography |
| 2016 | V.S. Sobolev Institute of geology and mineralogy SB RAS | DSc, petrology, volcanology |

## LANGUAGE SKILLS

- Russian – native
- English – fluent (reading, writing, conversations)

## TEACHING SKILLS

- *Regular teaching:*

-- Novosibirsk State University: General crystallography (lectures, practice) 1995 – 2008;

-- Novosibirsk State University: General mineralogy with crystal chemistry and mineral genesis (lectures, practice) 2006 – 2012;

-- Novosibirsk State University: Gemmology (lectures, practice), 2000 – 2004;

-- Novosibirsk State University: Summer mineralogical student fieldwork (scientific supervisor), 2006 – present;

-- Novosibirsk State University: Mineral-forming processes (lectures), 2011 – 2012;

-- Novosibirsk State University: Thermbarogeochemistry (fluid and melt inclusions in minerals) (lectures), 2011 – present;

-- Novosibirsk State University: The genesis and chemistry of minerals (lectures), since 2018

- *Handbooks*:

-- Litasov, Yu.D., Smirnov S.Z., Strakhovenko, V.D. Mineral deposits and occurrences. Novosibirsk State University. 2010;

-- Smirnov S.Z., Kulik N.A., Litasov Yu.D., Vishnevsky A.V., Strakhovenko V.D. General concepts of mineralogy and mineral formation. Novosibirsk State University. 2014;

-- Smirnov S.Z., Strakhovenko V.D., Litasov Yu.D., Kulik N.A. Structures of minerals (part I). Novosibirsk State University. 2014.

- *Graduate student supervision (2013 – 2018):*

-- MSc students – 2;

-- PhD students – 1.

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**SCIENTIFIC RESEARCH:**

- *Total publications*: 130
- *Major peer-reviewed publications*:

S.Z. Smirnov, I.S. Peretyazhko, V.Yu. Prokofyev, V.E. Zagorsky and A.P. Shebanin The first evidence of sassolite ($H_3BO_3$) in fluid inclusions in minerals. *Russian Geology and Geophysics*. – 2000. – V.4. – 2. – 193-205.

Peretyazhko I.S., Prokof'ev V.Y., Zagorskii V.E., and Smirnov S.Z. Role of boric acids in the formation of pegmatite and hydrothermal minerals: Petrologic consequences of sassolite ($H_3BO_3$) discovery in fluid inclusions. *Petrology*. – 2000. - V8. – 3. – 214-237.

Peretyazhko, IS., Zagorsky, VY., Smirnov, SZ., Mikhailov, MY Conditions of pocket formation in the Oktyabrskaya tourmaline-rich gem pegmatite (the Malkhan field, Central Transbaikalia, Russia) // *Chemical Geology*. – 2004. – V. 210. - 1-4. – 91-111.

Smirnov, SZ. Thomas, VG, Demin, SP, Drebushchak, VA. Experimental study of boron solubility and speciation in the $Na_2O$-$B_2O_3$-$SiO_2$-$H_2O$ system // *Chemical Geology*. – 2005. – V. 223. - 1-3. – 16-34.

Izokh, A. E., Smirnov, S. Z., Egorova, V. V., Tran Tuan Anh, Kovyazin, S. V., Ngo Thi Phuong, Kalinina, V. V. The conditions of formation of sapphire and zircon in the areas of alkali-basaltoid volcanism in Central Vietnam // *Russian Geology and Geophysics*. – 2010. – V. 51. – 7. – 719-733.

Smirnov, S. Z., Tomas, V. G., Sokolova, E. N., Kupriyanov, I. N. Experimental study of the leak-tightness of water-containing silicate-melt inclusions under the pressure of $D_2O$ at 650 degrees C and 3 kbar // *Russian Geology and Geophysics*. – 2011. – V. 52. – 5. – 537-547.

Sokolova, E. N., Smirnov, S. Z., Astrelina, E. I, Annikova, I. Yu, Vladimirov, A. G., Kotler, P. D. Ongonite-elvan magmas of the Kalguty ore-magmatic system (Gorny Altai): composition, fluid regime, and genesis // *Russian Geology and Geophysics*. – 2011. – V. 52. – 11. – 1378-1400.

Smirnov, S.Z., Thomas, V.G., Kamenetsky, VS, Kozmenko, OA, Large, RR Hydrosilicate liquids in the system $Na_2O$-$SiO_2$-$H_2O$ with NaF, NaCl and Ta: Evaluation of their role in ore and mineral formation at high and T and P // *Petrology*. – 2012. – V. 20. – 3. – 271-285

Kurguzova A.V., Smirnov S.Z., Klyukin Yu.I., Karmanov N.S. Bi-rich fluid inclusions in quartz from zwitter related to Li-F granite in the Severny pluton, Chukchi Peninsula: An insight into bismuth behavior during greisenization process // Geology of ore deposit. – 2014. – 56(8). – 629-636

Smirnov S.Z. The fluid regime of crystallization of water-saturated granitic and pegmatitic magmas: a physicochemical analysis // Russian Geology and Geophysics. – 2015. – 56(9). – 1292-1307

Koulakov, I., Kasatkina E., Shapiro, N.M., Jaupart, C., Vasilevsky, A., El Khepy, S., Al-Arifi, N., Smirnov, S. The feeder system of the Toba supervolcano from the slab to the shallow reservoir // Nature Communications. – 2016. – Vol.7. - #12228

Buravleva S.Yu, Smirnov S.Z., Pakhomova V.A., Fedoseev D.G. Sapphires from the Sutara placer in the Russian Far East // Gems and Gemology. – 2016. - Vol. 52 (3). - 252-264

Smirnov S. Z., Thomas V. G., Kamenetsky V. S., and Kozmenko O. A. Hydrosilicate liquids in the system rare-metal granite–$Na_2O$–$SiO_2$–$H_2O$ as accumulators of ore components at high pressure and temperature // Petrology.- 2017. – Vol. 25. – No. 6. – pp. 625–635.

Smirnov S. Z., Rybin A. V., Sokolova E. N., Kuzmin D. V., Degterev A. V., and Timina T. Yu. Felsic magmas of the caldera-forming eruptions on the Iturup Island: the first results of studies of melt inclusions in phenocrysts from pumices of the Lvinaya Past and Vetrovoy Isthmus calderas // Russian Journal of Pacific Geology. – 2017. – Vol. 11. – No. 1. – pp. 46–63

- *Research visits*:

-- Yucca Mountain paleohydrology, USA, State of Nevada team, 2000-2001

-- Role of hydrosilicate liquids and gels in hydrothermal and magmatic mineral formation, Australia, University of Tasmania, Hobart, 2006

- *Activity in scientific organizations*:

-- International Mineralogical Association: Working group on inclusions in minerals (WGIM), secretary 2002-2006, chairman 2006-2010;

-- Russian mineralogical society: member since 2006, West-Siberian branch scientific secretary, 2008-2011.