

CURRICULUM VITAE

SURNAME **FRONTASYEVA** FIRST NAME(S) **Marina**

Official address:

Department of Neutron Activation Analysis, Frank Laboratory of Neutron Physics
Joint Institute for Nuclear Research, 141980 Dubna Moscow Region, RUSSIA

Telephone: 7(49621) 65609

Date and place of birth: September 20, 1946, Smolensk, Russia

Nationality: Russian



Education (*degrees, dates, universities*)

1970 Physical Faculty, Department of Theoretical and Nuclear Physics, Saratov State University
1974 Postgraduate courses of Saratov State University
1982 Candidate of Physics and Mathematical Sciences, JINR, Dubna
1997 Associate Professor

Career/Employment (*employers, positions and dates*)

1974 - 1977 Junior Scientist, Saratov State University
1977 - 1982 Research Scientist, Joint Institute for Nuclear Research
1982 - 1989 Section Head
1989 - 1997 Senior Scientist
1997 - present Head of the Department of Neutron Activation Analysis
1997 – present Associate Professor of Department of Chemistry of the International University of Dubna

Specialization (*specify*)

- (i) **main field**
Neutron activation analysis (NAA) for studying the environment
- (ii) **other fields**
NAA for geology, biology, high technologies and new materials
- (iii) **current research interest**
Study of atmospheric pollutants on the regional and continental scale using nuclear and related techniques and GIS (geographical information systems) technology. Monitoring the anthropogenic impact on the environment

Honours, Awards, Fellowships, Membership of Professional Societies

1997 - present Member, International Committee on Activation Analysis (ICAA)
1992 - 1997 Member, Editorial Board of the Int. Journal "The Science of the Total Environment" (STOTEN)
2005- present Member, Editorial Board of the Int. *Journal of Nuclear and Radiation Physics* (JNRP)
2006- present Member, Editorial Board of the «Chimie» (Analele Stiintifice ale "Alexandru Ioan Cuza" din IASA Universitatii. ISSN:1221-5341)
1994 - present Scientific Secretary of the Scientific Council on Applied Nuclear Physics of the Russian Academy of Sciences; Member of the Scientific Council on Analytical Chemistry of RAS

Publications (*list selected publications on separate page*)

- **Number of papers in refereed journals:** 280 (more than 250 of them are dedicated to NAA), two books, two patents
- **Number of communications to scientific meetings:** About 70 oral presentations at international scientific meetings.

Публикации в Годовой отчет ЛНФ ОИЯИ

List of work by the NAA Department of FLNP JINR published in the refereed journals, books, JINR editions and conference proceedings

Список работ сектора НАА НЭОФЯ ЛНФ ОИЯИ, опубликованных в реферируемых журналах, книгах, изданиях ОИЯИ и трудах конференций

2009

1. A.G. Dutov, V.A. Komar, N.V. Shipilo, I.I. Azarko, M.V. Frontasyeva, S.S. Pavlov. Synthesis of fine crystalline diamonds. Chapter in the Book "Diamond and Related Materials". Editor Frank Columbus, Nova Science Publishers, Inc., USA, 2009, (in print).
2. M. Aničić, M. Tasić, M.V. Frontasyeva, M. Tomašević, S. Rajšić, Z. Mijić, A. Popović. Active moss biomonitoring of trace elements with *Sphagnum girgensohnii* moss bags in relation to atmospheric bulk deposition in Belgrade, Serbia. Accepted by *Environmental Pollution*, ENVPOL-D-08-00144R1, 2009.
3. C. Cristache, O. Culicov, K. Gmeling, M. Toma, M. Frontasyeva, O.G. Dului. An ENAA and PGAA comparative study of anoxic Black Sea sediments. Accepted by *Journal of Radioanalytical and Nuclear Chemistry*, 2009, Vol. No. 1, DOI: 10.1007/s10967-007-7214-z.
4. C. Cristache, O. Culicov, M. Toma, M. Frontasyeva, O.G. Dului, G. Oaie. ENAA studies of anoxic Black Sea sediments pollution. Accepted by *Marine Pollution Bulletin*, (Elsevier), 2009.
5. J. Meresova, M. Florek, K. Holy, M. Jeřkovský, I. Sýkora, M.V. Frontasyeva, S.S. Pavlov, M. Bujdoš. Evaluation of elemental content in airborne particulate matter in low-level atmosphere of Bratislava. JINR Preprint, E18-24-2008, Dubna, 2008, pp. 18. Accepted by *Atmospheric Environment*, ATMENV-D-08-00266R1, 2009.
6. T. Stafilov, R. Šajin, Z. Pančevski, B. Boev, M.V. Frontasyeva, L.P. Strelkova. Geochemical Atlas of Veles and Environs. Submitted to "2nd August", Stip, Macedonia, 2009, pp. 110.

2008

7. М. В. Фронтасьева. Эпитепловой нейтронный активационный анализ на реакторе ИБР-2 ЛНФ ОИЯИ. Принята в печать в журнал *Ядерная физика*, 2008.
M.V. Frontasyeva. Epithermal neutron activation analysis at the reactor IBR-2 FLNP JINR. Accepted by *Nuclear Physics* (in Russian), 2008.
8. L.M. Mosulishvili, N.Ya. Tsibakhashvili, E.I. Kirkesali, L.A. Tsertsvadze, M.V. Frontasyeva, S.S. Pavlov. Biotechnology in Georgia for various applications. *Bulletin of the Georgian National Academy of Sciences*, Vol. 2, No. 3, 2008 (in English).
9. E. Steinnes, M.V. Frontasyeva, S.F. Gundorina, Y.S. Pankratova. Identification of metal emissions from closely located sources using moss biomonitoring and factor analysis. Accepted by *Chemia Analytyczna/Chemical Analysis*, 2008; Book of Abstracts 21st Task Force Meeting of the ICP Vegetation (Oulu, Finland, February 26-29, 2008), p.45. JINR Preprint, E18-2008-4, 2008, pp. 8.
10. Л.С. Смирнов, К. Возниак, П. Доминиак, А. Лоозе, И. Натканец, М.В. Фронтасьева, Е.В. Помякушина, А.И. Баранов, В.В. Долбинина. Уточнение кристаллической структуры $[\text{Rb}_x(\text{NH}_4)_{1-x}]_3\text{H}(\text{SO}_4)_2$. I. Рентгеновская и нейтронная монокристаллическая дифракция фазы II с $x=0.11$ при 300 К. *Кристаллография*, том 53, № 2, 2008, с. 232-241.
L.S.Smirnov, K.Wozniak, P.Dominiak, A.Loose, I.Natkaniec, M.V.Frontasyeva, E.V.Pomyakushina, A.I.Baranov, V.V.Dolbinina. Refinement of crystal structure of $[\text{Rb}_x(\text{NH}_4)_{1-x}]_3\text{H}(\text{SO}_4)_2$. I. X-ray and neutron single crystal diffraction of phase II with $x=0.11$ at 300 K. *Crystallography*, том 53, № 2, 2008, с. 232-241 (in Russian).
11. I.N. Ilchenko, N.A. Bylova, M.V. Frontasyeva, S.M. Lyapunov, S.S. Pavlov, O.A. Culikov, O.I. Okina, A.V. Gorbunov, G.P. Aroutiounov. Heavy metal concentrations in blood of Moscow women and risk of development of low body mass index. *Public Health and Disease Prevention*, No. 2, 2008, pp. XX (in Russian).
12. L. Barandovski, M. Cekova, M.V. Frontasyeva, S.S. Pavlov, T. Stafilov, E. Steinnes, V. Urumov. Atmospheric deposition of trace element pollutants in Macedonia studied by the moss biomonitoring technique. *Environmental Monitoring and Assessment*, Vol. 138, 2008, p. 107-118, DOI:10.1007/s10661-007-9747-6. (JINR Preprint, E18-2006-160, Dubna, 2007, pp. 46).
13. A. Klos, M. Rajfur, M. Wacławek, W. Wacławek, M.V. Frontasyeva, Ju.S. Pankratova. The influence of unidentified pollution sources on the irregularity of biomonitoring test results. *Water, Air, and Soil pollution*, DOI 10.1007/s11270-008-9629-8, 2008.
14. M. Aničić, M. Tasić, M.V. Frontasyeva, M. Tomašević, S. Rajšić, L.P. Strelkova & E. Steinnes. Active biomonitoring with wet and dry moss: a case study in an urban area. Accepted by *Environmental Chemistry Letters*, <http://dx.doi.org/10.1007/s10311-008-0135-4>, 2008.
15. D. Popovic, D. Todorovic, M. Frontasyeva, J. Ajtic, M. Tasic and S. Rajsic. Radionuclides and heavy metals in Borovac, Southern Serbia. Accepted by *Environmental Science and Pollution Research – International (ESPR – Environ Sci & Poll Res)*, DOI: <http://dx.doi.org/10.1065/espr2007>, 2008.
16. M.V. Frontasyeva. Radioanalytical investigations at FLNP JINR for Life Sciences. Workshop Proceedings "Nuclear Physics and Society", (Plovdiv, Bulgaria, September 9-11, 2007). Accepted for publication, 2008.
17. Z. Spiric, M.V. Frontasyeva, T. Stafilov, V. Enimiteva, D. Bukovec, Z. Mesic. Environmental and health consequences of mercury air pollution. *Cell Biology and Toxicology* (Springer, Netherlands. ISSN: 0742-2091), P12 The Environmental and health consequences of mercury air pollution, pp. S104-S105, DOI: 10.1007/s10565-007-9052-8, <http://www.springerlink.com/content/r708830518116g80/>, 2008.
18. L.M. Mosulishvili, A.I. Belokobylsky, E.I. Kirkesali, A.I. Khizanishvili, E.N. Ginturi, N.E. Kuchava, M.V. Frontasyeva, S.S. Pavlov, N.G. Aksenova. Development of pharmaceutical substances based on blue-green alga *Spirulina platensis*. JINR Preprint, E18-2008-8, 2008, pp.13. Submitted to *Current Pharmaceutical Analysis* (USA), 2008.

19. J. Meresova, M. Florek, K. Holy, M. Jeřkovský, I. Sýkora, M.V. Frontasyeva, S.S. Pavlov, M. Bujdoš. Evaluation of elemental content in airborne particulate matter in low-level atmosphere of Bratislava. JINR Preprint, E18-24-2008, Dubna, 2008, pp. 18.
20. Ю.С. Панкратова, Н.И. Зельниченко, М.В. Фронтасьева, С.С. Павлов. Атмосферные загрязнения на территории Удмуртской Республики – оценки на основе анализа мхов-биоиндикаторов. Препринт ОИЯИ, P18-2008-96. Направлена в общественно-научный журнал «Проблемы региональной экологии» Yu. S. Pankratova, M.V. Frontasyeva, S.S. Pavlov, N.I. Zelnitchenko. Atmospheric pollution in the Republic of Udmurtia – estimations based on moss analysis. JINR Preprint, P18-2008-96. Submitted to *Problems of Regional Ecology*.
21. M.V. Frontasyeva, N.A. Bylova, I.N. Ilchenko, S.M. Lyapunov, O.I. Okina, A.V. Gorbunov, S.S. Pavlov, G.P. Aroutiounov. Assessment of exposure to toxic elements in women of fertile age with different nutritional status in Russia using nuclear and related analytical techniques. 9-th International Conference on Nuclear Analytical Methods in the Life Sciences (NAMLS-9), Book of Abstracts, p. A-11, Lisbon, Portugal, 7-12 September, **2008**.
22. I. Ilchenko, N. Bylova, M. Frontasyeva, S. Lyapunov, O. Okina, A. Gorbunov, S. Pavlov, G. Aroutiounov, P. Gorobech. Blood Concentrations of selected heavy metals in blood of Moscow women with different nutritional status. In the Book of Abstracts of the XVIII IEA World Congress of Epidemiology, (September 20-24, **2008**, Porto Alegre-RS, Brazil), p. XX.
23. L. Mosulishvili, N. Tsiabkhashvili, T. Kalabegishvili, E. Kirkesali, M. Frontasyeva, S. Pavlov. Neutron Activation Analysis in Biotechnology. *International Scientific Conference – Actual Problems of Experimental and Theoretical Biology*, Tbilisi, Georgia, October 3-4, 2008. Book of Abstracts, p. 71-72.
24. T. Stafilov, M.V. Frontasyeva, L. Barandovski, V. Enimiteva, S.S. Pavlov, V. Urumov. Biomonitoring air pollution using AAS and NAA: the Republic of Macedonia case study. Cairo University Biannual International Conference on Analytical Chemistry. Green and Sustainable Chemistry in Developing Countries. Book of Abstracts, p. 19, Cairo, Egypt, 3-6 March, **2008**.
25. M.V. Frontasyeva. Trace element atmospheric pollution in the Balkans studied by the moss technique, ENAA and AAS. Book of Abstracts 21st Task Force Meeting of the ICP Vegetation (Oulu, Finland, February 26-29, **2008**), p. 12.
26. Z. Spiric, M. Frontasyeva, T. Stafilov, V. Enimiteva, L. Barandovski, V. Urumov. Atmospheric deposition of Cd, Hg, and Pb in Croatia and neighbouring countries: assessment based on moss analysis. Book of Abstracts 21st Task Force Meeting of the ICP Vegetation (Oulu, Finland, February 26-29, **2008**), p. 44.
27. J. Oszlanyi, B. Mankovska, M. Frontasyeva. Use of mosses as biomonitors of heavy metal deposition in the Carpathians Mountains (Slovak Part). Book of Abstracts 21st Task Force Meeting of the ICP Vegetation (Oulu, Finland, February 26-29, **2008**), p. 41.
28. B.Mankovska, J. Oszlányi, M. Florek, M.V. Frontasyeva, S.S. Pavlov. Neutron activation analysis as method for critical evaluation of pollution of ecosystem. International Conference "Contaminated sites - Bratislava 2008" (Bratislava, Slovakia, June 16-18, 2008). The conference is organized under the auspices of the Ministry of the Environment of the Slovak Republic and Ministry of the Environment of the Czech Republic.
29. M. Florek, J. Merešová, K. Holý, M. Jeřkovský, I. Sýkora, C. Burda, T. Melicherová, M.V. Frontasyeva, S.S. Pavlov. Comparison of elemental concentrations in the atmosphere in Bratislava with other Slovakian and European sites. Proceedings of International Conference "Contaminated sites - Bratislava 2008" (Bratislava, Slovakia, June 16-18, 2008). The conference is organized under the auspices of the Ministry of the Environment of the Slovak Republic and Ministry of the Environment of the Czech Republic.
30. O.G. Dului, O. Culicov, C. Olteanu, C. Ricman, N. Mihailescu, M.V. Frontasyeva, L. Dinescu, G. Oaie. Instrumental neutron activation analysis applications to environmental and geological studies. Book of Abstracts, ISINN-16, 10-14 June, 2008, Dubna.
31. O.A. Culicov, M.V. Frontasyeva, A. Pantelica, C.R. Badita, R. Szoke, I. Laszlo, R. Baranyai. Instrumental neutron activation analysis interlaboratory comparison based on short-lived isotopes. Book of Abstracts, ISINN-16, 10-14 June, 2008, Dubna.
32. A.I. Pantelica, C.R. Badita, M.V. Frontasyeva, O.A. Culicov. A retrospective review of JINR – IFIN-HH collaborative projects based on NAA. Book of Abstracts, ISINN-16, 10-14 June, 2008, Dubna.
33. C.I.Cristache, O.A.Culicov, M.V.Frontasyeva, C.Ricman, M.Toma, O.G. Dului. INAA, radiometric and R-mode factor analysis applied to the distribution of major and trace elements in some volcanic and metamorphic ores from Romania. ICRM-2008. Germany.
34. A. Pantelica, M.V. Frontasyeva, C. Oprea, A. Ammerlaan, P. Bode, I.I. Georgescu, E. Pincovschi. Investigation of the working place atmosphere in a Romanian fertilizer plant by neutron activation analysis. Book of Abstracts, NRC7, Hungary, 2008.
35. A. Pantelica, O.A. Culicov, M.V. Frontasyeva, C. Oprea, R. Georgescu, I.I. Georgescu, E. Pincovschi. Investigation of the occupational exposure in a fertilizer plant by instrumental neutron activation analysis of hair and nail samples. Book of Abstracts, NRC7, Hungary, 2008.
36. A. Pantelica, C.R. Badita, O. Culicov, M. Frontasyeva, I. Companis, C. Ciortea. PIXE and INAA analytical sensitivity of edible vegetal samples. The 4th National Conference on Applied Physics (September 25-26, 2008, Galati, Romania).
37. M.V. Frontasyeva. Current status and future needs of nuclear analytical techniques and their applications. The 4th National Conference on Applied Physics (September 25-26, 2008, Galati, Romania) (Invited talk).
38. M.V. Frontasyeva, S. Lodoysamba, N. Baljinnyam, G. Ganbold, A.P. Kobzev, S.S. Pavlov, G. Shovoodoi. A system of complex monitoring heavy metals and radionuclides in Mongolia based on nuclear and related analytical techniques. Book of Abstracts of the 4th National Conference on Applied Physics (September 25-26, 2008, Galati, Romania), p. 37-38.