

## CURRICULUM VITAE

### Marina Slukovskaya



#### CONTACT INFORMATION

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[m.slukovskaya@ksc.ru](mailto:m.slukovskaya@ksc.ru)

#### POSITION

- Researcher of RUDN laboratory “Smart technologies for sustainable development of urban environment in the conditions of global change” (Moscow)
- Senior Researcher in the Laboratory of Nature-inspired Technologies and Environmental Safety of the Arctic, Kola Science Centre, Russian Academy of Sciences (Apatity)
- Senior Researcher of I.V. Tananaev Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials, Kola Science Centre, Russian Academy of Sciences (Apatity)

#### INTRODUCTION

Marina Slukovskaya is a PhD (Biology). She has 10 years of experience in bioremediation of industrially polluted and degraded areas in the Arctic and Subarctic, geochemistry and plant ecology. She is author of more than 50 scientific publications, including 3 patents for inventions. Her scientific background includes the development, scientific justification and monitoring of soil design techniques in the urban and industrial territories using mining wastes, vermiculite and organic substrates, agrochemical and toxicological studies of ecosystems at the high level of technogenic load in industrial areas, including erosion-proof grass communities on the tailing dump and Technosols on industrial barrens in the Arctic and Subarctic. Also she focuses on the development of approaches of mining wastes’ recycling as soil amendments to improve soil conditions and functions.

#### RESEARCH EXPERIENCE

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|--------------|---|
| 2019-present | Researcher, Laboratory “Smart technologies for sustainable development of urban environment in the conditions of global change”, RUDN (Moscow)  |
| 2019-present | Senior Researcher, Laboratory of Nature-inspired Technologies and Environmental Safety of the Arctic, Kola Science Centre, Russian Academy of Sciences (Apatity, Murmansk Region, Russia)   |
| 2016-present | Senior Researcher, Laboratory of mineral raw materials and synthesis of silicates, I.V. Tananaev Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials, Kola Science Centre, Russian Academy of Sciences (Apatity, Murmansk Region, Russia). |
| 2013-2016    | Research Assistant, Department of Botany and Physiology of plants, Petrozavodsk State University (Petrozavodsk, Republic of Karelia, Russia).   |

2010-2013      Research Assistant, Laboratory of experimental botany, Institute of Environmental management on European North, Petrozavodsk State University (Petrozavodsk, Republic of Karelia, Russia)

## SKILLS AND EXPERTISE

*Field work.* Field remediation experiments development and engineering of Technosols and grass communities using mining and industrial wastes, plant cover growing using hydroponic technologies, urban greening, physiological activity analysis.

*Laboratory analysis.* Heavy metal compounds analysis in soils and plant tissues, organic carbon analysis, pH and Eh analysis in soils.

## PUBLICATIONS (or link to scientific profile in databases)

Scopus ID 56055800400

WoS ResearcherID: B-1497-2014

ID ORCID: 0000-0002-5406-5569

AuthorID (RSCI): 726094

1. Irina Kremenetskaya, Svetlana Alekseeva, **Marina Slukovskaya**, Irina Mosendz, Svetlana Drogobuzhskaya, Liubov Ivanova. Expanded vermiculite-reached product obtained from mining waste: the effect of roasting temperature on the agronomic properties. *Physicochemical Problems of Mineral Processing*. 2019. DOI: <https://doi.org/10.5277/ppmp19086>
2. **Marina V. Slukovskaya**, Viacheslav I. Vasenev, Kristina V. Ivashchenko, Dmitry V. Morev, Svetlana V. Drogobuzhskaya, Liubov A. Ivanova, Irina P. Kremenetskaya. Technosols on mining wastes in the Subarctic: Efficiency of remediation under Cu-Ni atmospheric pollution. *International Soil and Water Conservation Research* 7 (2019) 297-307. <https://doi.org/10.1016/j.iswcr.2019.04.002>
3. **Slukovskaya M.V.**, Dolgikh A.V., Novikov A.I., Mosendz I.A., Kremenetskaya I.P. Soil respiration as an indicator of the Technosol toxicity. *Transactions of Fersman Scientific Session*. 2019. № 16. Pp. 529–533. DOI: 10.31241/FNS.2019.16.108
4. Liubov' Ivanova, **Marina Slukovskaya**, Irina Kremenetskaya, Svetlana Alekseeva, Alexander Neaman. Ornamental plant cultivation using vermiculite-lizardite mining waste in the industrial zone of the Subarctic. *Green Technologies and Infrastructure to Enhance Urban Ecosystem Services: Proceedings of the Smart and Sustainable Cities Conference 2018*. Springer Publishing, 2019. Pp. 199-204. DOI: 10.1007/978-3-030-16091-3\_22
5. **Slukovskaya, Marina V.**; Kremenetskaya, Irina P.; Drogobuzhskaya, Svetlana V.; Ivanova, Liubov A.; Mosendz, Irina A.; Novikov, Andrey I. Serpentine Mining Wastes - Materials for Soil Rehabilitation in Cu-Ni Polluted Wastelands. *Soil Science*. **2018**. Vol. 183 Issue 4, p. 141–149. doi: 10.1097/SS.0000000000000236
6. **Slukovskaya M.V.**, Ivanova L.A., Kremenetskaya I.P., Gorbacheva T.T., Drogobuzhskaya S.V., Lashchuk V.V., Markovskaya E.F. Rehabilitation of Industrial Barren in Arctic Region Using Mining Wastes. *The Open Ecology Journal*, 2018, 11, 1-13. DOI: 10.2174/1874213001811010001
7. Irina Mikhaylova, **Marina Slukovskaya**, Irina Mosendz, Irina Kremenetskaya, Ekaterina Karavayeva, Svetlana Drogobuzhskaya. Application of Silicon-Contained Mining Wastes in Urban Greening. *Urbanization: Challenge and Opportunity for Soil Functions and Ecosystem Services*. Springer International Publishing. 2019. Pp. 145-152.

8. Ivanova L.A., Kremenetskaya I.P., **Slukovskaya M.V.**, Mosendz I.A. To the question of cultivation of decorative-flower plants in the conditions of aerial pollution of copper-nickel production in the extreme North conditions. Transactions of Fersman scientific session. 2018. 15: 460-463. DOI: 10.31241/FNS.2018.15.117
9. **Slukovskaya M. V.**, Kremenetskaya I. P., Ivanova L. A., Vasilieva T. N. Remediation in conditions of an operating copper-nickel plant: results of perennial experiment. Non-ferrous Metals. 2017. 2:20-26. DOI 10.17580/nfm.2017.02.04
10. **Marina Slukovskaya**, Elena Novichonok, Irina Kremenetskaya, Irina Mosendz, Svetlana Drogobuzhskaya, Evgenia Markovskaya, Using Festuca rubra L. in phytoremediation: complex assessment of influence of technogenic grounds on plant. Scientists note of Petrozavodsk State University. 2017. № 4 (165): 70–80.
11. Lashchuk V.V., **Slukovskaya M.V.**, Kremenetskaya I.P., Mosendz I.A., Ivanova L.A. The use of Kovdorsky GOK wastes for reclamation of the contaminated soil layer. Izvestiya of the Samara Scientific Center of the Russian Academy of Sciences. 2016. 18, №2(3): 746-751.
12. Kalinnikov V.T., Kremenetskaya I.P., Ivanova L.A., **Slukovskaya M.V.**, Gorbacheva T.T., Alekseeva S.A., Lashchuk V.V., Drogobuzhskaya S.V. Techniques of adaptive technologies in the creation of cultivated phytocenoses in the conditions of technogenic landscapes of the Subarctic contaminated with heavy metals. Vestnik of the Kola Science Center. 2014. 2: 80-90.
13. **Slukovskaya M.V.**, Ivanova L.A., Gorbacheva T.T., Changes in the properties of industrially wasted ground upon the application of carbonatite ameliorant in the copper-nickel smelter impact area. Transactions of Karelian Research Centre. 2013. 6: 133-142.
14. R. Kikuchi, T.T. Gorbacheva, **M.V. Slukovskaya**, L.A. Ivanova. Tolerance of Herbaceous Plants to Multiple Contaminations in an Industrial Barren Near a Nickel-Copper Smelter. Herbaceous Plants: Cultivation Methods, Grazing and Environmental Impacts. Nova Science Publishers, Inc. 2013, pp. 95-112. ISBN: 978-1-62618-729-0

## EDUCATION

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|-----------|---|
| 2010-2013 | PhD student at Petrozavodsk State University, Faculty of Ecology and Biology. Specialty is Ecology. Defended PhD dissertation on the topic “Ecological rationale of the use of mineral substrates for phytoremediation of industrial wasteland in the Subarctic”. |
| 2005-2010 | Master in ecology with additional qualification - chemistry and biology teacher (Diploma with honor, topic “Modern approach to reclamation of local industrially disturbed and polluted territories in the Arctic”)   |

## GRANTS AND FELLOWSHIPS

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| 2019-present | Project of the Russian Science Foundation № 17-77-00077 “Analysis of the processes of primary soil formation to assess the effectiveness of remediation on serpentine geochemical barriers in the impact zones of copper-nickel enterprises in the Arctic zone” (head) |
| 2019-present | Project of the Russian Foundation for Basic Research № 19-29-05187 “Carbon reserves in urban soils of different climatic zones of European Russia: formation factors and accumulation mechanisms” (participant)  |
| 2010-present | Contract № 3079, 3091 et al. with “Norilsk Nickel Group”, JSC “Kola Mining and Metallurgical Company”: “Pilot-industrial tests of technology for cleaning  |

- water and soil objects contaminated with heavy metals using magnesian-silicate reagent” (participant).
- 2016-2019 Project of the Russian Foundation for Basic Research № 16-35-60022 “Investigation of the behavior of heavy metals in artificial plant communities of the impact zone of copper-nickel enterprises in the Arctic and Subarctic regions” (head)
- 2014-2017 Program of the Presidium of Russian Academy of Sciences "Fundamental research in the interests of development of the Arctic zone of Russian Federation" (participant)
- 2012-2014 RFBR project № 12-04-31234 "Ecological and physiological adaptation of plants of disturbed territories" (participant)
- 2011-2014 UMNIC grant for young scientists, working in innovative sphere "Development of technology for remediation of industrial wasteland of the metallurgical factory" (head)

### **AWARDS AND HONORS**

Award for Youth Outstanding Paper from the World Association of Soil and Water Conservation (2018)

List of the most important achievements of the Russian Academy of Sciences: “The development of the technology of biological remediation of apatite-nepheline tailings” (2010)

### **PROFESSIONAL MEMBERSHIPS**

Association of Polar Early Career Scientists, member of National committee.