

CURRICULUM VITAE

Name: Vladimir NIKIFOROV

[REDACTED]
[REDACTED]
[REDACTED]

Present position: Ph.D, Senior Scientist

Affiliation : NILU – Norwegian Institute for Air Research
Framsenteret

[REDACTED]

Education and Academic experience :

1981-1986 Student, Leningrad State University, Department of Chemistry (honors).

1986-1990 Postgraduate student, Leningrad State University, Department of Chemistry

1990 Ph.D. (“Kandidat Nauk”; Org.Chem.) “Synthesis of fluoroketones and guanidinium salts and their extraction ability relative to anions”

1992 Visiting scientist, Carleton University, Department of Chemistry, Ottawa, Canada

1990-2000 Scientist, Leningrad/St.Petersburg State University, Institute of Chemistry, Physical Organic Chemistry

2000-2010 Senior Scientist, St.Petersburg State University, Institute of Chemistry, Physical Organic Chemistry

2003-2009 Dozent (Assoc. Prof.), St.Petersburg State University, Department of Chemistry.

2010-2014: Head, Laboratory of POPs migration studies, Center for Ecological safety, Russian Academy of Sciences

2013-2014: Adjunct Professor, St.Petersburg State University, Department of Geography and GeoEcology.

Since 01.09.2014 – Senior Scientist, NILU - Norwegian Institute for Air Research, Tromsø, Norway

Publications, selection

1. Stefano Aliani, Amy Lusher, Francois Galgani, Dorte Herzke, Vladimir Nikiforov, Sebastian Primpke, Lisa Roscher, Vitor Hugo da Silva, Jakob Strand, Giuseppe Suaria, David Vanavermaete, Katrien Verlé, Bavo de Witte, Bert van Bavel. Reproducible pipelines and readiness levels in plastic monitoring. Nature Reviews Earth & Environment (2023) <https://doi.org/10.1038/s43017-023-00405-0>
2. Dorte Herzke, Vladimir Nikiforov, Leo W.Y. Yeung, Børge Moe, Heli Routti, Torgeir Nygård, Geir.W. Gabrielsen, Linda Hanssen, Targeted PFAS analyses and Extractable Organofluorine – Enhancing our Understanding of the presence of unknown PFAS in Norwegian wildlife. Environment International 171 (2023) 107640.
3. William Jouanneau, Don-Jean Léandri-Breton, Dorte Herzke, Børge Moe, Vladimir A. Nikiforov, Marie Pallud, Charline Parenteau, Geir W. Gabrielsen, Olivier Chastel. Does contaminant exposure

- disrupt maternal hormones deposition? A study on per- and polyfluoroalkyl substances in an Arctic seabird. *Science of the Total Environment* 868 (2023) 161413.
4. Jeremy P Koelmel, Hongyu Xie, Elliott J Price, Elizabeth Z Lin, Katherine E Manz, Paul Stelben, Matthew K Paige, BS, Stefano Papazian, Joseph Okeme, Dean P Jones, Dinesh Barupal, John A Bowden, Pawel Rostkowski, Kurt D Pennell, Vladimir Nikiforov, Thanh Wang, Xin Hu, Yunjia Lai, Gary W Miller, Douglas I Walker, Jonathan W Martin, Krystal J Godri Pollitt, An actionable annotation scoring framework for gas chromatography-high-resolution mass spectrometry. *Exposome*, 2022, 2(1), osac007.
 5. Lara Cioni, Vladimir Nikiforov, Ana Carolina M.F. Coelho, Torkjel M. Sandanger, Dorte Herzke, Total oxidizable precursors assay for PFAS in human serum. *Environment International* 170 (2022) 107656.
 6. Vladimir A. Nikiforov, Hydrolysis of FTOH precursors, a simple method to account for some of the unknown PFAS. *Chemosphere* 276 (2021) 130044.
 7. Bohlin-Nizzetto, P., Aas, W., Halvorsen, H. L., Nikiforov, V., Pfaffhuber, K. A. (2021). Monitoring of environmental contaminants in air and precipitation. Annual report 2020. (NILU report 12/2021; Norwegian Environment Agency M-2060|2021). Kjeller: NILU.
 8. Bohlin-Nizzetto, Pernilla; Aas, Wenche; Halvorsen, Helene Lunder; Nikiforov, Vladimir; Pfaffhuber, Katrine Aspomo. Monitoring of environmental contaminants in air and precipitation. Annual report 2021. Kjeller: NILU 2022 (ISBN 978-82-425-3089-9) 76 s. NILU rapport(19/2022)
 9. Trine Eggen, Eldbjørg S. Heimstad, Vladimir Nikiforov, Christian Vogelsang (2019) Maximum limit values for selected hazardous organic contaminants (HOCs) in secondary raw materials used in fertilisers and soil products. NIBIO rapport, Vol. 5, no. 110, 2019, ISBN: 978-82-17-19/00082.
 10. L. Hanssen, D. Herzke, V. Nikiforov, B. Moe, T. Nygård, J. van Dijk, G. Wing Gabrielsen, E. Fuglei, L. Yeung, C. Vogelsang, C., P. M. Carlsson (2019) Screening new PFAS compounds 2018 (Miljødirektoratets rapport M-1491/2019) (NILU report 23/2019). Kjeller: NILU.
 11. Martin Schlabach, Bert van Bavel, Jose Antonio Baz Lomba, Anders Borgen, Geir Wing Gabrielsen, Arntraut Götsch, Anne-Karine Halse, Linda Hanssen, Ingjerd Sunde Krogseth, Vladimir Nikiforov, Torgeir Nygård, Pernilla Bohlin Nizzetto, Malcolm Reid, Pawel Rostkowski, Saer Samanipour (2018) Screening programme 2016 - AMAP Assessment compounds. (Miljødirektoratet rapport, M-1080/2018) (NILU report 21/2018). Kjeller: NILU.
 12. Warner, N.A., Nikiforov, V., Krogseth, I.S., Bjørneby, S.M., Kierkegaard, A., Bohlin-Nizzetto, P. (2020) Reducing sampling artifacts in active air sampling methodology for remote monitoring and atmospheric fate assessment of cyclic volatile methylsiloxanes. *Chemosphere* 255, 126967.
 13. Larisa Metelkova, Zoya Zhakovskaya, Galina Kukhareva, Alexander Rybalko, Vladimir Nikiforov, Occurrence of PCDD/PCDFs, dioxin-like PCBs and PBDEs in surface sediments from the Neva River and the Eastern Gulf of Finland (Russia). *Environ Sci Pol Res* (2018) DOI: 10.1007/s11356-018-1945-y
 14. Schlabach, M., Bavel, B. van, Lomba, J. A. B., Borgen, A., Fjeld, E., Halse, A.-K., Nikiforov, V., Bohlin-Nizzetto, P., Reid, M., Rostkowski, P., & Vogelsang, C. (2017). *Screening programme 2016 - Selected compounds with relevance for EU regulation* (Miljødirektoratet rapport, M-818/2017) (NILU report, 34/2017). Kjeller: NILU.
 15. Even H. Jørgensen, Alec G. Maule, Anita Evenset, Guttorm Christensen, Jenny Bytningsvik, Marianne Frantzen, Vladimir Nikiforov, Erin Faught, Mathilakath M. Vijayan. Biomarker response and hypothalamus-pituitary-interrenal axis functioning in Arctic charr from Bjørnøya (74°30' N), Norway, with high levels of organohalogenated compounds. [Aquatic Toxicology](#), **187**, 2017, 64–71
 16. Baranauskaite-Fedorova, I., Dvarioniene, J., & Nikiforov, V.A. (2016). Management of pharmaceutical substances in the environment: Lithuanian case study. *Water Science and Technology*, 74, 6, 1255-1265. doi:10.2166/wst.2016.289

17. L.O. Metelkova, Z.A. Zhakovskaya, V.S. Tsarev, G.I. Kukhareva, V.A. Nikiforov. Polychlorinated biphenyls (PCBs) in sediments from the Neva river and the eastern Gulf of Finland. *Regional Ecology* (in Russian). 2016, no. 1(43), pp. 63-71.
18. Thomas, K.V., Langford, K., Reid, M., Vogelsang, C., Øxnevad, S., Bæk, K., Fjeld, E., Brooks, S., Pampanin, D.M., Nikiforov, V., Schlabach, M. (2016). *Screening programme 2015. Pharmaceuticals and hormones* (Miljødirektoratet rapport, M-597/2016) (NIVA report, 7076-2016). Oslo: NIVA.
19. Tineke Sloomweg, Helmut Segner, Philipp Mayer, Kilian Smith, Elizaveta Igumnova, Vladimir Nikiforov, Milena Dömötörövá, Jörg Oehlmann, Markus Liebig [Transfer and effects of 1,2,3,5,7-pentachloronaphthalene in an experimental food chain](#) *Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology*, Volume 169, March 2015, Pages 46-54
20. Youssouf Djibril Soubaneh, Jean-Pierre Gagné, Michel Lebeuf, Vladimir Nikiforov, Bruno Gouteux, Mohamed Osman Awaleh. Sorption and competition of two persistent organic pesticides onto marine sediments: relevance to their distribution in aquatic system. *Chemosphere* (2015) 131, 48-54.
21. Russkikh I. V., Chernova E. N., Nikiforov V. A., Zhakovskaya Z. A. Determination of pharmaceuticals in waterbodies of the North-West Russia. *Regional Ecology*, 2014, 1-2, pp. 77-83. [http://www.ecosafety-spb.ru/images/stories/Publications/RegionalEcology/No1-2\(35\)2014.pdf](http://www.ecosafety-spb.ru/images/stories/Publications/RegionalEcology/No1-2(35)2014.pdf)
22. Khoroshko L. O., Nikiforov V. A., Zhakovskaya Z. A., Mamontova V. N., Kukhareva G. I. Polybrominated diphenyl ethers in water and sediments from St. Petersburg area. *Regional Ecology*, 2014, 1-2, pp. 84-87. [http://www.ecosafety-spb.ru/images/stories/Publications/RegionalEcology/No1-2\(35\)2014.pdf](http://www.ecosafety-spb.ru/images/stories/Publications/RegionalEcology/No1-2(35)2014.pdf)
23. A.V. Egorova, V.N. Mamontova, I.A. Afti, V.A. Nikiforov, M.I. Yankevich, Z.A. Zhakovskaya. Bacterial degradation of polycyclic aromatic hydrocarbons in urban soils. *Izvestiya SPbGTI(TU)*, no. 23 (49), 2014, pp. 75-78. <http://science.spb.ru/files/IzvetiyaTI/2014/23/articles/18/#4>
24. Youssouf Djibril Soubaneh, Jean-Pierre Gagné, Michel Lebeuf, Bruno Gouteux, Vladimir Nikiforov, Mohamed Osman Awaleh. Sorption behaviors of a persistent toxaphene congener on marine sediments under different physicochemical conditions. *Chemosphere* 114 (2014) 310–316, <http://dx.doi.org/10.1016/j.chemosphere.2014.05.016>
25. Elizaveta A. Savicheva, Daria V. Kurandina, Vladimir A. Nikiforov, Vadim P. Boyarskiy. Hydrazinoaminocarbene–palladium complexes as easily accessible and convenient catalysts for copper-free Sonogashira reactions. *Tetrahedron Letters* 55 (2014) 2101–2103, <http://dx.doi.org/10.1016/j.tetlet.2014.02.044>
26. Chernova E.N., Keltsieva O.A., Gladilovich V.G., Russkikh Ya.V., Sukhodolov N.G., Selyutin A.A., Nikiforov V.A., Zhakovskaya Z.A. Application of high-resolution chromatomass-spectrometr LTQ Orbitrap for determination of perfluoroacids in water using traditional solid-phase and metal-affinity sorbents: method development and optimization. *Nauchnoe Priborostroenie* (in Russ.) 2013, V.23, No. 14, p. 30-37.
27. Vladimir Nikiforov, Zoya Zhakovskaya, Yana Russkikh, Ekaterina Chernova. HELCOM 2014, BASE project 2012-2014: Pilot activity to identify sources and flow patterns of pharmaceuticals in St. Petersburg to the Baltic Sea, Helsinki, 2014. <http://www.helcom.fi/Lists/Publications/Pharmaceuticals%20in%20waste%20water%20in%20St.%20Petersburg%20-%20BASE%20final%20report.pdf>
28. Chernova E.N., Keltsieva O.A., Gladilovich V.G., Russkikh Ya.V., Sukhodolov N.G., Selyutin A.A., Nikiforov V.A., Zhakovskaya Z.A. Application of high-resolution chromatomass-spectrometr LTQ Orbitrap for determination of perfluoroacids in water using traditional solid-phase and metal-affinity sorbents: method development and optimization. *Nauchnoe Priborostroenie* (in Russ.) 2013, V.23, No. 14, p. 30-37.

29. Russkikh Ya.V., Chernova E.N.,Voyakina E.Yu., Nikiforov V.A., Zhakovskaya Z.A. Analysis of cyanotoxins in aqueous matrix by HPLC-HRMS. *Izvestiya of St.Petersburg State Technological University (in Russ.)* 2012, 17, p.61-66.
30. V.K.Donchenko, Z.A. Zhakovskaya, V.A.Nikiforov. Identification of sources of hazardous substances in Baltic Sea aquatory: project SRCES RAS – HELCOM. *Pure water: problems and solutions (in Russ.)* 2012, no. 1-2, p.25-27.
31. Russkikh Ya.V., Nekrasova L.V., Chernova E.N., Nikiforov V.A., Zhakovskaya Z.A. Analysis of organic pollutants included in HELCOM list with help of chromato-mass-spectrometer LTQ-Orbitrap. *Analytica (in Russ.)* 2012, V. 2, No. 1, p. 24-31.
32. Nekrasova L.V., Russkikh Ya.V., Chernova E.N., Zhakovskaya Z.A., Nikiforov V.A. Ryzhov M.Yu. Parallel analysis of pharmaceutical substances by LC-HRMS. *Analytica (in Russ.)* 2012, V. 3, No. 2, p. 38-45.
33. L. Khoroshko, V.Nikiforov, Z.Zhakovskaya, V.Mamontova, G.Kukhareva. Direct determination of tributyltinchloride in bottom sediments of the Gulf of Finland by GC-MS. *Analytica (in Russ.)* 2012, no. 6, p.24-28.
34. R.I.Dudchuk, V.N.Mamontova, L.O.Khoroshko, Z.A.Zhakovskaya, V.A.Nikiforov. The mass-spectrometric fragmentation rules for Toxaphene congeners. *Regional Ecology (in Russ.)* 2011, No. 3-4, p. 118-129.
35. F.A.Kryuchkov, V.A.Nikiforov. Enantiomer-specific analysis of Polychloropinene congeners. *Ecological Chemistry (in Russ.)* 2010, 19(1), p. 24-30.
36. Vladimir A. Nikiforov. Synthesis of Polychloroalkanes. In: J. de Boer (ed.), *Chlorinated Paraffins, Hdb Env Chem, Springer-Verlag Berlin Heidelberg*. 2010, Vol 10/2010, 41-82.
37. J.Paasivirta, S.Sinkkonen, V. Nikiforov et al. Long-range atmospheric transport of three toxaphene congeners across Europe. Modeling by chained single-box FATEMOD program. *Environ Sci Pollut Res* 2009, 16, 191-205.
38. V. Boyarsky, T. Zhesko, V.Nikiforov et al. Catalytic carbonylation - new method for utilization of polychlorobiphenyls. *Catalysis in Industry (Russ)* 2009, 3, 40-45.
39. Kryuchkov F, Nikiforov V., Sandanger T et al. Polychloropinene – Toxaphene analog produced in the USSR was non-racemic. *Organohalogen Compounds* 2009, 71, p. 2775-2778.
40. Igumnova E. Nikiforov V. Kinetic isotope effect of Hydrogen in hydrodechlorination of polychloronaphthalenes. II. Reaction of PCNs with Zink or Copper in AcOH/AcOD. *Organohalogen Compounds* 2009, 71, p. 2779-2782.
41. Nikiforov V A, Lisitsyn L A, Bazhenov I V. SNAr Hydrolysis in water is not a major degradation pathway of chloroaromatic POPs in the environment. *Organohalogen Compounds* 2009, 71, p. 2897-2901.
42. A. Valkonen, E.Kolehmainen, V. Nikiforov. 2-exo,5-endo,8,8,10-Pentachlorobornane. *Acta Cryst.* 2008, E64, o688
43. S. A . Lanina, V . P . Boyarskii, T. E . Zhesko, V . A . Nikiforov, and T. Ya. Bart. Carbonylation of Polychlorinated Biphenyls over Cobalt Carbonyl Catalyst Modified with Propylene Oxide. *Russian Journal of General Chemistry, Vol. 78, No. 1, 2008, 127-132*
44. Youssouf Djibril Soubaneh, Michel Lebeuf, Bruno Gouteux, Huixiang Xie, Vladimir Nikiforov and Jean-Pierre Gagné. Investigations on the sorption of the model toxaphene congener B7-1450 on marine sediments, *Chemosphere*, 2008, 71(6), p. 1019-1027
45. Alexey Trukhin, Fedor Kruchkov, Lars Kr. Hansen, Roland Kallenborn, Anastasia Kiprianova and Vladimir Nikiforov. Toxaphene chemistry: separation and characterization of selected enantiomers of the polychloropinene mixtures. *Chemosphere*, 2007, Vol. 67, 1695-1700.
46. E. Kolehmainen, F. Kryuchkov, V. Nikiforov and A. Valkonen 2,2,5,5,6-exo,8,8,9,10,10Decachlorobornane. *Acta Cryst.* (2007). E63, o327–o328. [doi:10.1107/S1600536806053517]

47. K. Laihia, A. Valkonen, E. Kolehmainen, A. Antonov, D. Zhukov, I. Fedosov, V. Nikiforov. ¹H, ¹³C, ¹⁵N NMR, ESI mass spectral and single crystal X-ray structural characterization of three spiro[pyrrolidine-2,30-oxindoles]. *Journal of Molecular Structure* 800 (2006) 100–105.
48. E. Kolehmainen, V. Nikiforov, K. Troshin and A. Valkonen. 2,5-Dimethyl-4'-nitrobiphenyl. *Acta Cryst.* (2006). E62, o4989-o4990 [doi:10.1107/S1600536806040955]
49. M.Lahtinen, J.Paasivirta, V. Nikiforov. Evaluation of entropies of fusion of polychlorinated naphthalenes by model congeners: A DSC study. *Thermochimica Acta* Volume 447, Issue 1, 2006, Pages 5-12.
50. Kruchkov FA, Kuppens T, Kolehmainen E and Nikiforov VA. Structure elucidation of polychloroterpenes obtained from optically active pinenes: 2-endo,5,5,8,8,9,9,10,10,10decachlorofenchane by NMR and (1R,3S,4S,5S,6S,7R)-2,2,3-exo,5-endo,6-exo,8,9,9,10,10decachlorobornane by VCD. *Organohalogen Compounds*, 2006, Vol. 68, pp. 1008-1011.
51. Nikiforov VA, Davydova AP, Kruchkov FA Kinetic isotope effect of hydrogen in hydrodechlorination of polychloronaphthalenes. *Organohalogen Compounds*, 2006, Vol. 68, pp 1474-1477.
52. Katri Laihia, Erkki Kolehmainen, Vladimir Nikiforov and Sergei Miltsov ¹H, ¹³C and ¹⁵N NMR spectral characterization of twenty-seven 1,2-diaryl-(4E)-arylidene-2-imidazolin-5-ones. *Magn. Reson. Chem.* 2006; 44: 895–900.
53. Erkki Kolehmainen, Kari Tuppurainen, Svetlana A. Lanina, Elina Sievänen, Katri Laihia, Vadim P. Boyarskiy, Vladimir A. Nikiforov, Tatiana E. Zhesko. A computationally feasible quantum chemical model for ¹³C NMR chemical shifts of PCB-derived carboxylic acids, *Chemosphere*, 2006, 62, 368–374
54. ¹H, ¹³C NMR spectral and single crystal structural studies of toxaphene congeners. Quantum chemical calculations for preferred conformers of 2,5-endo,6-exo,8,9,9,10,10-octachloro-2bornene and their DFT/GIAO ¹³C chemical shifts. K. Laihia, A. Valkonen, E. Kolehmainen, R. Suontamo, M. Nissinen, V. Nikiforov, S. Selivanov. *Journal of Molecular Structure* 754 (2005) 77-84.
55. Melcher, J.; Olbrich, D.; Marsh, G.; Nikiforov, V.; Gaus, C.; Gaul, S.; Vetter, W. Tetra- and Tribromophenoxyanisoles in Marine Samples from Oceania. *Environ. Sci. Technol.* 2005; 39(20); 7784-7789.
56. Kinetic isotope effects in environmental chemistry: natural distribution of deuterium in different positions of α -pinene and theoretical analysis of isotopic distribution in polychlorobornanes. Vladimir A. Nikiforov, Stanislav I. Selivanov, Ivan S. Podkorytov. *Organohalogen compounds*, 2005, Vol. 67, pp. 1374-1377.
57. Vladimir A. Nikiforov. Synthesis and characterization of polychlorinated naphthalenes. VI. PCNs 39, 41, 60, 61, 62. *Organohalogen compounds*, 2005, Vol. 67, pp. 681-684.
58. K. Laihia, E. Kolehmainen, E. Wegelius, S. Miltsov, V.A. Nikiforov and V.S. Karavan, NMR Spectroscopic and X-ray Structural Characterizations of Two Diaryl Derivatives of (4-Cyano-6methyl-3,8-dioxo-2,3,5,6,7,8-hexahydro-pyrido[3,4-c]pyridazin-6-yl)hydrazono-acetic Acid Ethyl Ester, *Heterocyclic Commun.*, 10, 35 - 42 (2004).
59. Alexei Trukhin, Lars Kr. Hansen, Roland Kallenborn, Anastasia Kiprianova and Vladimir Nikiforov. An enantiomerically pure potential toxaphene congener: (1R,2S,3S,4R,7S)-2-endo,3-exo,5,5-tetrachloro-7-(chloromethyl)-1,7-bis(dichloromethyl)bicyclo[2.2.1]heptane. *Acta Crystallographica E*, E60, o1089-o1091 (2004) [doi:10.1107/S1600536804012437].
60. Vladimir A. Nikiforov, Alexei Trukhin, Fedor Kruchkov, Anastasia Kiprianova, Vladimir Karavan, Sergei Miltsov, Lars Kr. Hansen and Roland Kallenborn. Isolation of pure enantiomers of Toxaphene congeners via hydrochlorination and chlorination of pinene and composition of soviet polychloropinene. *Organohalogen Compounds*, 2004, Vol. 66, p. 467-472.
61. Vladimir A. Nikiforov, Vadim P. Boyarskiy, Tatiana E. Zhesko, Svetlana A. Lanina, Erkki Kolehmainen and Elina Virtanen. Destruction of PCBs and other polyhalogenated polyaromatic compounds via

- carbonylation on a modified cobalt catalyst. III. PCB-mono- and polycarboxylic acids and carbonylation of 2,4,8-TricDF, PCNs and PBDE-99. *Organohalogen Compounds*, Vol. 63(2003), pp. 268-271.
62. Vladimir A. Nikiforov, Vladimir S. Karavan and Sergei A. Miltsov. Synthesis and characterization of methoxy- and hydroxy- polybromodiphenyl ethers. *Organohalogen Compounds*, Vol. 61(2003), pp. 115-118
 63. Vladimir A. Nikiforov, Vladimir S. Karavan, Sergei A. Miltsov, Stanislav I. Selivanov, Erkki Kolehmainen, Elina Wegelius, Maija Nissinen. Hypervalent iodine compounds derived from onitriodobenzene and related compounds: syntheses and structures. *ARKIVOC*, 2003, (vi) 191-200, URL: http://www.arkat-usa.org/ark/journal/2003/I06_Varvoglis/AV-744A/744A.pdf.
 64. Vladimir A. Nikiforov. Production of polychloroterpenes in the USSR. *Organohalogen compounds*, Vol.59(2002), p. 315-318.
 65. Vladimir A. Nikiforov, Vadim P. Boyarsky, Tatiana E. Zhesko, Svetlana A. Lanina, Erkki Kolehmainen and Elina Virtanen. Destruction of PCBs and other polyhalogenated polyaromatic compounds via carbonylation on a modified cobalt catalyst. II. Structural study of PCB-carboxylic acids and carbonylation of sovtol. *Organohalogen Compounds*, Vol. 56(2002), pp. 409-412.
 66. J. Koivisto, E. Kolehmainen, V. Nikiforov, M. Nissinen, J. Linnanto, M. Lahtipera, S.A. Miltsov and V.S. Karavan, A New Potential Toxaphene Congener: Synthesis, GC/EI-MS Study, Crystal Structure, NMR Analysis, and ab initio Calculations of 3-endo-,5-endo-Dichloro-7,7-bis(chloromethyl)-4-dichloromethyl-tricyclo[2.2.1.02.6]heptane, *Chemosphere*, 44, 671-679 (2001).
 67. Vladimir A. Nikiforov, Vladimir S. Karavan and Sergei A. Miltsov Relative retention times of 122 polychloroterpenes. *Organohalogen Compounds*, 2001, Vol. 50, 268-271.
 68. Vadim P. Boyarsky, Tatiana E. Zhesko, Svetlana A. Lanina and Vladimir A. Nikiforov. Destruction of PCBs and other polyhalogenated polyaromatic compounds via carbonylation on a modified cobalt catalyst. *Organohalogen Compounds*, 2001, Vol. 54, 226-229.
 69. Jari J. Koivisto, Erkki T. Kolehmainen, Vladimir A. Nikiforov, Maija J. Nissinen, Kari A. Tupurainen, Mikael Perakyla, Sergei A. Miltsov and Vladimir S. Karavan. Synthesis, structures and spectroscopy of polychlorinated dihydrocamphenes. An experimental and theoretical study. *ARKIVOC*, 2001 Part(iii), 95-113. URL: www.arkat-usa.org/ark/journal/Volume2/Part3/Pihlaja/KP-127A/127A.pdf
 70. Villeneuve D L; Kannan K; Khim J S; Falandysz J; Nikiforov V A; Blankenship A L; Giesy J P Relative potencies of individual polychlorinated naphthalenes to induce dioxin-like responses in fish and mammalian in vitro bioassays. *Arch. Environ. Contam. Toxicol.* (2000), 39(3), 273-81.
 71. V. Nikiforov, V. Karavan, S. Miltsov, Relative retention times of chlorinated terpenes. *Chemosphere* 41, 467-472, (2000).
 72. Vladimir A. Nikiforov, Sergei A. Miltsov, Vladimir S. Karavan and V.V. Varentsov. Synthesis and characterization of polychlorinated naphthalenes. V. Selective reduction of PCNs with zinc. *Organohalogen Compounds*, 2000, 47, 171-173.
 73. Daniel L. Villeneuve, Jong Seong Khim, Kurunthachalam Kannan, Jerzy Falandysz, Vladimir A. Nikiforov, Alan L. Blankenship, John P. Giesy. Relative potencies of individual polychlorinated naphthalenes to induce dioxin-like response in fish and mammalian in vitro bioassays. *Organohalogen Compounds*, 2000, 47, 5-8.
 74. Erkki Kolehmainen, Jari Koivisto, Vladimir A. Nikiforov, Katri Laihia, Reijo Kauppinen, Kari Tuppurainen, Mikael Perakyla, Sergei A. Miltsov and Vladimir S. Karavan, NMR Spectroscopy in Environmental Chemistry: ¹H and ¹³C NMR Parameters of Chlorinated Dibenzothiophenes Based on Two Dimensional NMR Techniques and ab initio MO and DFT/GIAO calculations. *Magn. Reson. Chem* 37, 743-747 (1999).
 75. V. Nikiforov, V. Karavan, S. Miltsov, Relative retention times of chlorinated terpenes. *Organohalogen Compounds* 1999, 41, 605-609.
 76. V. Nikiforov, V. Karavan, S. Miltsov, Composition of Camphechlor. *Organohalogen Compounds* 1999, 41, 601-604.

77. S. Miltsov, V. Karavan, V. Nikiforov, V. Tribulovich, V. Varentsov, Selective reduction of polychloronaphthalenes with zinc. *Zh. Org. Khim (rus)* vol.5, pp.724-727, 1999.
78. V. Karavan, V. Nikiforov, Formation of thiazoles by reaction of 2-alkoxy-2-trifluoromethyl-3-phenyloxyranes with thiourea derivatives. *Zh. Org. Khimii(rus)* vol. 5, 1999.
79. V. Nikiforov, V. Karavan, S. Miltsov, V. Tribulovich, Synthesis and Characterization of Polychlorinated naphthalenes. IV. C-13 Labelled Compounds. *Organohalogen Compounds* 1998, 35, 159-162.
80. V. Nikiforov, V. Tribulovich, V. Karavan, S. Miltsov, On the Internal Rotation of Toxaphene Congeners. *Organohalogen Compounds* 1997, 33, 53-56.
81. V. Nikiforov, R. Wightman, Reaction of nitroarenes and arenesulfonylchlorides with hexachlorocyclopentadiene. *Chimia* 1997, 7, 452.
82. V. Nikiforov, V. Tribulovich, S. Bolshakov, Structure-Behaviour Relationships for Toxaphene Congeners. I. Gas Chromatography of Chlorinated Bornanes. *Organohalogen Compounds* 1996, 28, 355-358.
83. V. Tribulovich, V. Nikiforov, S. Bolshakov, Isolation and Structure Elucidation of Polychlorodihydrocamphenes - Potential Constituents of Toxaphene Residues. *Organohalogen Compounds* 1996, 28, 385-388.
84. L. Alder, R. Palavinskis, V. Nikiforov, V. Tribulovich, Relative Response Factors for Toxaphene Components Using Different Detectors. *Organohalogen Compounds* 1996, 28, 423-428.
85. V. Nikiforov, V. Tribulovich, V. Karavan, Experience in Isolation and Identification of Toxaphene Congeners and Prospects of Congener-specific Analysis of Environmental Samples. *Organohalogen Compounds* 1995, 26, 379-382.
86. V. Tribulovich, V. Nikiforov, V. Karavan, Use of Chlorobornanes as Analytical Standards for Toxaphene Analysis. *Organohalogen Compounds* 1995, 26, 389-392.
87. V. Nikiforov, V. Tribulovich, V. Karavan, On the Nomenclature of Toxaphene Congeners. *Organohalogen Compounds* 1995, 26, 393-396.
88. V. Tribulovich, V. Nikiforov, V. Karavan, S. Miltsov, S. Bolshakov, Synthesis and Characterization of Toxaphene Congeners. *Organohalogen Compounds* 1994, 19, 97-101.
89. S. Miltsov, V. Nikiforov, V. Karavan, V. Tribulovich, S. Bolshakov, Synthesis and Characterisation of Polychlorinated Dibenzothiophenes. *Organohalogen Compounds* 1994, 19, 133-135.
90. V. Nikiforov, S. Miltsov, V. Karavan, V. Tribulovich, S. Vlasov, R. Wightman, Synthesis and Characterization of Polychlorinated Naphthalenes. III. Gas Chromatography. *Organohalogen Compounds* 1994, 19, 137-138.
91. V. Nikiforov, V. Karavan, S. Miltsov, V. Tribulovich, Synthesis and Characterization of Polychlorinated Naphthalenes. II. Laterally Substituted Congeners. *Organohalogen Compounds* 1993, 14, 229-230.
92. V. Nikiforov, M. Malayiandi, D. Williams, Isolation, structure elucidation and isomorphism of Toxicant B. *Chemosphere* 1993, 27.
93. V. Nikiforov, P. Auger, R. Wightman, M. Malayiandi, D. Williams. Synthesis and Characterization of Polychlorinated Naphthalenes. *Organohalogen Compounds*, 1992, 8, 123-124.
94. V. S. Karavan, V. G. Tribulovich, V. A. Nikiforov. Two-stage mechanism of formation of α -methoxyketone by reaction of α -bromobenzyltrifluoromethylketone with sodium methylate in methanol. *Zhurnal Organicheskoi Khimii*, Vol. 28, Issue 7., pp. 1455-1459, 1992.
95. T. Ya. Bart, V. S. Karavan, A. L. Grekovich, N. A. Ampilogova, V. E. Yurinskaya, V. A. Nikiforov, Lewis acids as anion-selective ligands in ion-selective film electrodes. *Zhurnal Analiticheskoi Khimii*, Vol. 45, No. 7, pp. 1364-1371, 1990 (English translation – 1991, pp. 987-992).
96. V. S. Karavan, V. A. Nikiforov, N. A. Ampilogova. Effect of electrophilicity of substituted trifluoroacetophenones on anion exchange extraction of acetate ion. *Zhurnal Analiticheskoi Khimii*, Vol. 44, No. 5, pp. 944-946, 1989 (English translation – 1989, pp. 773-775).

97. N.A.Ampilogova, V.S.Karavan, M.A.Moskalenko, V.A.Nikiforov. Synthesis of guanidinium salts and possibilities of their use as anion exchangers. Zhurnal Analiticheskoi Khimii, Vol. 44, No. 4, pp.620-623, 1989 (English translation – 1989, pp.503-506).

Patents

1. T.E. Zhesko, V.P. Boyarsky, S.A. Lanina and V.A. Nikiforov. Method of remediation of PCBs. 2002, Patent RUS 2215729 from 01.04.2002, 2002108276/04(008593).
2. N.A. Ampilogova, V.S. Karavan, V.A. Nikiforov, R.A. Bogatkin. Guanidine enanthic acid ester hydrochloric salts as hydrophobic Aniono-exchangers. Pat. RU 1708810 A1. 30.01.1992
3. V.S.Karavan, V.A.Nikiforov, V.G.Tribulovich. Method for preparation of benzyltrifluoromethylketone derivatives. Pat. SU 1664782 A1. 22.03.1991.

