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Personal Information:

Birth date: October 07, 1988

Place of birth: Irkutsk, USSR/Russia

Marital status: married, 1 child (born 2017)

Education

Sept 2021 - Oct 2021 **Training**, Python language (basics and advanced functions)
iFORM, Toulouse, France
Oct 2010 – Oct 2013 **PhD Student**
Institute of Chemical Biology and Fundamental Medicine, Novosibirsk, Russia
Oct 2010 **Professional training**, Nanobiotechnology
Belgorod State University, Belgorod, Russia
Sep 2005 – Jun 2010 **MS, Chemistry**
Novosibirsk State University, Novosibirsk, Russia

PhD Degree

June 2014 **Multifunctional hybrids of nucleic acid constructions with carbon nanotubes**
PhD thesis (Bioorganic chemistry)
Supervisor: Darya S. NOVOPASHINA, PhD
Defended at: Institute of Chemical Biology and Fundamental Medicine,
Novosibirsk, Russia

Research Experience

Employment

Feb 2020 – Feb 2022 **Marie Skłodowska-Curie Researcher (Individual Fellowship)** at the
Laboratoire de Chimie de Coordination CNRS, Toulouse, France
Aug 2014 – Feb 2020 **Research Associate** at the Laboratory of RNA Chemistry, Institute of Chemical
Biology and Fundamental Medicine (ICBFM), Novosibirsk, Russia
Oct 2010 – Jul 2014 **Junior Researcher** at the Laboratory of RNA Chemistry ICBFM
Apr 2007 – Oct 2010 **Research Assistant** at the Laboratory of RNA Chemistry ICBFM

Short-term scientific visits

2018-2019 **Gíner de los Ríos Invited professor** at the University of Alcalá, Madrid, Spain
(3.5 months in total)
2013-2016 **Visiting researcher** at the Laboratoire de Chimie de Coordination CNRS
Toulouse, France (6 months in total)
2013-2015, 2021 **Visiting researcher** at the University of Lodz, Poland (5 months in total)
2014 **Visiting researcher** at the University of Alcalá, Madrid, Spain (2 months in
total)

Teaching experience

Feb 2019 - present **Assistant professor**, lecturer in Biomaterials: properties, design, applications
(for master and postgraduate students)
Chair of Molecular Biology and Biotechnology, Department of Natural Sciences,
Novosibirsk State University, Novosibirsk, Russia
1 semester per year, 2 h per week

11 Prizes and Awards since 2009

Complete list of publications¹

Research articles

- M.V. Karachevtsev, E.K. Apartsin, D. S. Novopashina. *Immobilization of single-strand of siRNA with sticky end on single-walled carbon nanotubes for delivery systems design and biosensing: Molecular Dynamics simulation. (submitted)*
- N. Knauer, V. Arkhipova, G. Li, M. Hewera, E. Pashkina, P.-H. Nguyen, M. Meschaninova, V. Kozlov, D. Hänggi, W. Zhang, J.-P. Majoral, A.-M. Caminade, E. Apartsin*, U.D. Kahlert. *In vitro validation of the therapeutic potential of dendrimer-based nanoformulations against tumor stem cells. (on revision in Int. J. Mol. Sci.)*
- 1. E. Poonaki, A.-C. Nickel, M.S. Ardestani, L. Rademacher, M. Kaul, E. Apartsin, S.G. Meuth, A. Gorji, C. Janiak, U.D. Kahlert. *CD133-functionalized gold nanoparticles as a carrier platform for Telaglenastat (CB-839) against tumor stem cells. Int. J. Mol. Sci. 2022. (accepted)*
- 2. K. Sztandera, M. Gorzkiewicz, M. Bątal, V. Arkhipova, N. Knauer, J. Sánchez-Nieves, F. J. de la Mata, R. Gómez, E. Apartsin, B. Klajnert-Maculewicz. *Triazine-carbosilane dendrimersomes enhance cellular uptake and phototoxic activity of rose bengal in basal cell skin carcinoma cells. Int. J. Nanomedicine. 2022. 17, pp. 1139-1154. DOI: 10.2147/IJN.S352349*
- 3. E.K. Apartsin*, N. Knauer, U.D. Kahlert, A.-M. Caminade. *Amphiphilic triazine-phosphorus metalloidendrons possessing anti-cancer stem cell activity. Pharmaceutics. 2022. 14(2). Paper ID: 393 (14 pages). DOI: 10.3390/pharmaceutics14020393.*
- 4. E. Apartsin*, A. Venyaminova, J.-P. Majoral, A.-M. Caminade. *Dendriplex-impregnated hydrogels with programmed release rate. Front. Chem. 2022, 9. Paper ID: 780608 (7 pages). DOI: 10.3389/fchem.2021.780608*
- 5. L.I. Karpenko, E.K. Apartsin, S.G. Dudko, E.V. Starostina, O.N. Kaplina, D.V. Antonets, E.A. Volosnikova, B.N. Zaitsev, A.Y. Bakulina, A.G. Venyaminova, A.A. Ilyichev, S.I. Bazhan. *Cationic polymers for the delivery of the Ebola DNA vaccine encoding artificial T-cell immunogen. Vaccines. 2020. 8(4), Paper ID: 718 (14 pages). DOI: 10.3390/vaccines8040718*
- 6. E. Apartsin*, N. Knauer, V. Arkhipova, E. Pashkina, A. Aktanova, J. Poletaeva, J. Sánchez-Nieves, F. J. de la Mata, R. Gómez. *pH-sensitive dendrimersomes of hybrid triazine-carbosilane dendritic amphiphiles-smart vehicles for drug delivery. Nanomaterials. 2020. 10(10), Paper ID: 1899 (15 pages). DOI: 10.3390/nano10101899*
- 7. I.S. Dovydenko, Y.A. Laricheva, A.E. Grigoryeva, E.I. Ryabchikova, N.B. Kompankov, A.L. Gushchin, E.K. Apartsin, M.N. Sokolov. *Interaction of hydrophobic trinuclear tungsten cluster complexes with a phospholipid bilayer. J. Phys. Chem. B. 2019. 123(41), pp. 8829-8837. DOI: 10.1021/acs.jpcc.9b06006*
- 8. T. Serchenya, D. Shcharbin, I. Shyrochyna, O. Sviridov, M. Terekhova, V. Dzmitruk, E. Apartsin, S. Mignani, J.-P. Majoral, M. Bryszewska. *Immunoreactivity changes of human serum albumin and alpha-1-microglobulin induced by their interaction with dendrimers. Coll. Surf. B. 2019. 179, pp. 226-232. DOI: 10.1016/j.colsurfb.2019.03.065*
- 9. O.A. Krasheninina, E.K. Apartsin*, E. Fuentes, A. Szulc, M. Ionov, A.G. Venyaminova, D. Shcharbin, F.J. de la Mata, M. Bryszewska, R. Gómez. *Complexes of pro-apoptotic siRNAs and carbosilane dendrimers: formation and effect on cancer cells. Pharmaceutics. 2019. 11(1), Paper ID: 25 (15 pages). DOI: 10.3390/pharmaceutics11010025*
- 10. E.K. Apartsin*, A. Malrin-Fournol, A.E. Grigoryeva, A.G. Venyaminova, E.I. Ryabchikova, S. Mignani, A.-M. Caminade, J.-P. Majoral. *Hydrogels of polycationic acetohydrazone-modified phosphorus dendrimers for biomedical applications: gelation studies and nucleic acid loading. Pharmaceutics. 2018. 10(3), Paper ID: 120 (13 pages). DOI: 10.3390/pharmaceutics10030120*
- 11. Ju. Poletaeva, I. Dovydenko, A. Epanchintseva, K. Korchagina, D. Pyshnyi, E. Apartsin, E. Ryabchikova, I. Pyshnaya. *Non-covalent associates of siRNAs and AuNPs enveloped with lipid layer and doped with amphiphilic peptide for efficient siRNA delivery. Int. J. Mol. Sci. 2018. 19(7), Paper ID: 2096 (19 pages). DOI: 10.3390/ijms19072096.*
- 12. E.K. Apartsin*, A.G. Venyaminova, S. Mignani, A.-M. Caminade, J.-P. Majoral. *Synthesis of dissymmetric phosphorus dendrimers using an unusual protecting group. New J. Chem. 2018. 42(11), pp. 8985-8991. DOI: 10.1039/C8NJ01229F*

¹ * - corresponding author

13. C. Gutiérrez Ulloa, M. Buyanova, E. Apartsin*, A. Venyaminova, F. J. de la Mata., R. Gómez. *Carbon nanotubes decorated with cationic carbosilane dendrons and their hybrids with nucleic acids*. ChemNanoMat. 2018. 4(2), pp. 220-230. DOI : 10.1002/cnma.201700351. (Cover image: ChemNanoMat. 2018. 4(2), p. 150. DOI : 10.1002/cnma.201700381)
14. I.S. Dovydenko, M.S. Kupryushkin, D.V. Pyshnyi, E.K. Apartsin*. *A convenient solid phase approach to obtain lipophilic phosphoramidate derivatives of DNA and RNA oligonucleotides*. Nucleosides Nucleotides Nucleic Acids. 2018. 37(2), pp. 102-111. DOI: 10.1080/15257770.2017.1421765.
15. A. Ihnatsyeu-Kachan, V. Dzmitruk, E. Apartsin, O. Krasheninina, M. Ionov, S. Loznikova, A. Venyaminova, K. Milowska, D. Shcharbin, S. Mignani, M.A. Muñoz-Fernández, J.-P. Majoral, M. Bryszewska. *Multi-target inhibition of cancer cell growth by siRNA cocktails and 5-fluorouracil using effective piperidine-terminated phosphorus dendrimers*. Colloids Interfaces. 2017. 1(1), Paper ID: 6 (18 pages). DOI: 10.3390/colloids1010006
16. C.E. Gutierrez-Ulloa, M.Yu. Buyanova, E.K. Apartsin*, A.G. Venyaminova, F.J. de la Mata, M. Valiente, R. Gómez. *Amphiphilic carbosilane dendrons as a novel synthetic platform toward micelle formation*. Org. Biomol. Chem. 2017. 15 (35), pp. 7352-7364. DOI: 10.1039/C7OB01331K
17. E.S. Permyakova, D.S. Novopashina, A.G. Venyaminova, E.K. Apartsin*. *Non-covalent anchoring of oligonucleotides on single-walled carbon nanotubes via short biodegradable linker*. RSC Adv. 2017; 7(46), pp. 29212-29217. DOI: 10.1039/C7RA04933A
18. E. O. Fedorovskaya, E. K. Apartsin*, D. S. Novopashina, A. G. Venyaminova, A. G. Kurennya, L. G. Bulusheva, A. V. Okotrub: *RNA-modified carbon nanotube arrays recognizing RNA via electrochemical capacitance response*. Mater. Design 2016; 100, pp. 67-72. DOI: 10.1016/j.matdes.2016.03.110
19. M. Ionov, J. Lazniewska, V. Dzmitruk, I. Halets, S. Loznikova, D. Novopashina, E. Apartsin, O. Krasheninina, A. Venyaminova, K. Milowska, O. Nowacka, R. Gomez-Ramirez, F. J. de la Mata, J.-P. Majoral, D. Shcharbin, M. Bryszewska: *Anticancer siRNA cocktails as a novel tool to treat cancer cells. Part (A). Mechanisms of interaction*. Int. J. Pharm. 2015; 485(1-2), pp. 261-269. DOI: 10.1016/j.ijpharm.2015.03.024
20. E. K Apartsin*, M. Yu Buyanova, D. S. Novopashina, E. I Ryabchikova, A. V Filatov, M. A Zenkova, A. G Venyaminova: *Novel multifunctional hybrids of single-walled carbon nanotubes with nucleic acids: synthesis and interactions with living cells*. ACS Appl. Mater. Interfaces 2014; 6(3), pp. 1454-1461. DOI:10.1021/am4034729
21. D. S. Novopashina, E. K. Apartsin, A. G. Venyaminova: *Fluorescently labeled bionanotransporters of nucleic acid based on carbon nanotubes*. Ukr. J. Phys. 2012; 57(7), pp. 718-722.
22. E. K. Apartsin, D. S. Novopashina, Yu. V. Nastaushev, A. G. Ven'yaminova: *Fluorescently labeled single-walled carbon nanotubes and their hybrids with oligonucleotides*. Nanotechnol. Russ. 2012; 7(3-4), pp. 99-109. DOI: 10.1134/S1995078012020024
23. D. S. Novopashina, S. A. Kholodar, E. K. Apartsin, M. I. Meshchaninova, E. N. Voronina, M. L. Filipenko, A. G. Venyaminova. *New tools for point mutation detection*. Bulletin Novosib. State Univ. Series: Biol. Clin Med. 2011; 9(1). pp.15-20 (in Russian)

Reviews

1. E. Apartsin*, A.-M. Caminade. *Supramolecular self-associations of amphiphilic dendrons and their properties (review)*. Chem. Eur. J. 2021; 27(72). pp. 17976-17998. DOI: 10.1002/chem.202102589 (Frontispiece: Chem. Eur. J. 2021; 27(72). DOI: 10.1002/chem.202187261)
2. N. Knauer, E. Pashkina, E. Apartsin*. *Topological aspects of the design of nanocarriers for therapeutic peptides and proteins (review)*. Pharmaceutics. 2019. 11(2), Paper ID: 91 (18 pages). DOI: 10.3390/pharmaceutics11020091
3. V. Dzmitruk, E. Apartsin, A. Ihnatsyeu-Kachan, V. Abashkin, D. Shcharbin, M. Bryszewska. *Dendrimers show promise for siRNA and microRNA therapeutics (review)*. Pharmaceutics. 2018. 10(3), Paper ID: 126 (25 pages). DOI: 10.3390/pharmaceutics10030126
4. O.A. Krasheninina, D.S. Novopashina, E.K. Apartsin, A.G. Venyaminova. *Recent advances in nucleic acids targeting probes and supramolecular constructs based on pyrene-modified oligonucleotides (review)*. Molecules. 2017. 22(12), Paper ID: 2108 (48 pages). DOI: 10.3390/molecules22122108
5. E.K. Apartsin*, N.Yu. Knauer. *Methods of gene delivery and perspectives of their application in the gene therapy (review)*. Genes Cells 2016; 9(2). pp. 32-41. (in Russian)
6. E. K. Apartsin, D. S. Novopashina, A. V. Okotrub, A.G. Venyaminova. *Carbon nanotube-based electrochemical biosensors of nucleic acids (review)*. Bulletin Novosib. State Univ. Series: Biol. Clin Med. 2012; 10(1). pp.181-190 (in Russian)

Patents

1. J.P. Majoral, E. Apartsin, A. Venyaminova, M. Bryszewska, M. Ionov, D. Shcharbin, V. Dzmitruk, A. Ihnatsyeu-Kachan. *Synthesis of new phosphorous dendrimers and use thereof*. WIPO/PCT publication number WO 2018/025074 A1 (priority date 01.07.2017). Published on the 08.02.2018.
2. M. Bryszewska, M. Ionov, D. Shcharbin, V. Dzmitruk, A. Ihnatseu-Kachan, J.P. Majoral, E. Apartsin, A. Venyaminova. *Method for obtaining phosphorous dendrimers (AE2G3H+/AE2G4H+) and their application as effective siRNA carriers to neoplastic cells*. Polish patent application PL418170 (priority date 01.08.2016). Published on the 12.02.2018.
3. E. O. Fedorovskaya, E. K. Apartsin, D. S. Novopashina, A. G. Venyaminova, L. G. Bulusheva, A. V. Okotrub. *Detection method of specific sequences of nucleic acids (variants), and device for its implementation*. Patent RU2509157C2 (priority date 26.10.2011)

Book Chapters

- I. Vinković Vrček, E. Apartsin* (eds.) *Handbook for physicochemical characterisation of nanopharmaceuticals. Fundamentals, protocols, tips and tricks for facilitating quality, efficacy and safety evaluation of nano-enabled medical products (book proposal submitted)*
- 1. E. K. Apartsin*, M. Yu Buyanova, D. S. Novopashina, A. G. Venyaminova: *Hybrids of siRNA with Carbon Nanotubes as RNA Interference Instruments*. Nanobiophysics: Fundamentals and Applications, Edited by V. Karachevtsev. 2015: chapter 2; P. 33-57. Pan Stanford Publishing., ISBN: 9789814613972
- 2. E. K. Apartsin, M. Yu. Buyanova, D. S. Novopashina, E. I. Ryabchikova, A. G. Venyaminova: *Non-Covalent Immobilization of Oligonucleotides on Single-Walled Carbon Nanotubes*. Nanomaterials Imaging Techniques, Surface Studies, and Applications, Edited by O. Fesenko, L. Yatsenko, M. Brodin. 2013: chapter 20; P. 291-307. Springer Science+Business Media., ISBN: 9781461476740

Edited proceedings

- I. Vinković Vrček, E. Apartsin* (eds.) *Book of abstracts. COST ACTION CA17140 Working Group 2 Online Conference "Characterisation of nanomaterials towards safe and efficient nanodrugs"*, June 22-23, 2021. DOI: 10.18778/BOA

Conference Proceedings (oral presentations are marked in **bold**)

1. A. Edr, E. Apartsin, J. Kalasová, J. Malý and T. Strašák. *Carbosilane Dendritic Amphiphiles for Cancer Nanomedicine Drug Delivery*. COST Action CA17140 NANO2CLINIC 1st STSM virtual conference, March 16, 2022
2. V. Arkhipova, N. Knauer, E. Pashkina, A. Aktanova, J. Sánchez- Nieves, F. J. de la Mata, R. Gómez, E. Apartsin. *Synthesis of amphiphilic carbosilane dendrons for cancer nanomedicine*. COST Action CA17140 NANO2CLINIC 1st STSM virtual conference, March 16, 2022
3. N. Knauer, V. Arkhipova, R. Gómez, J. Sánchez-Nieves, E. Pashkina, V. Kozlov, E. Apartsin, U. Kahlert. *Dendrimers for microRNA delivery into human glioblastoma stem-like cells*. COST Action CA17140 NANO2CLINIC 1st STSM virtual conference, March 16, 2022
4. E. Poonaki, A.-C. Nickel, M. S. Ardestani, A. Gorji, S. G. Meuth, E. Apartsin, C. Janiak, U. Kahlert. *CD-133 functionalized gold nanoparticles loaded CB839 targeted drug delivery suppressed Glioblastoma stem cells*. COST Action CA17140 NANO2CLINIC 1st STSM virtual conference, March 16, 2022
5. N. Knauer, E. Pashkina, V. Kozlov, R. Gomez, A.-M. Caminade, U. Kahlert, E. Apartsin. *Antitumor effects of cationic dendritic molecules and their complexes with microRNA in glioblastoma stem-like cells*. ESMO TAT 2022, online, 7-8 March 2022.
6. N. Knauer, V. Arkhipova, R. Gómez, J. Sánchez-Nieves, E. Pashkina, P.-H. Nguyen, V. Kozlov, D. Hänggi, E. Apartsin, U. Kahlert. *Amphiphilic triazine-carbosilane dendrons as perspective agents for glioblastoma treatment*. COST ACTION 17140 Working Group 2 Online conference "Characterisation of nanomaterials towards safe and efficient nanodrugs" June 22–23, 2021
7. N. Knauer, E. Pashkina, O. Boeva, V. Arkhipova, A. Venyaminova, V. Kozlov, F. J. de la Mata, R. Gomez, E. Apartsin. *Dendrimer-mediated microRNA delivery impacts leukemia cells viability*. Abstract Book. 25th Congress of European Hematology Association Annual Congress. The Netherlands, The Hague, 2020.
8. V. Arkhipova, N. Knauer, E. Pashkina, O. Boeva, A. Venyaminova, J. Sánchez-Nieves, F. J. de la Mata, R. Gomez, E. Apartsin. *Self-organizing stimulus-sensitive dendrimersomes as a drug delivery platform*. Abstracts. Supramolecular strategies in chemistry, biology and medicine: fundamental aspects and perspectives. 2nd School-conference for young scientists. Kazan, Russia, 19-21.10.2020.

9. O. Boeva, N. Knauer, E. Pashkina, A. Aktanova, V. Arkhipova, J. Sanchez-Nieves, F.J. de la Mata, R. Gomez, E. Apartsin. *Evaluation of hemolytic properties of amphiphilic triazine-carbosilane dendrons*. Abstracts. 7th International conference of young scientists OpenBio2020. Koltsovo, Novosibirsk region, Russia. 27-30.10.2020.
10. V. Arkhipova, N. Knauer, E. Pashkina, O. Boeva, A. Venyaminova, J. Sanchez-Nieves, F.J. de la Mata, R. Gomez, E. Apartsin. *Triazine-carbosilane dendrimersomes as prospective platform for drug delivery*. Abstracts. 7th International conference of young scientists OpenBio2020. Koltsovo, Novosibirsk region, Russia. 27-30.10.2020.
11. E. Apartsin, V. Arkhipova, J. Sánchez-Nieves, F. J. de la Mata, R. Gómez. ***Amphiphilic Hybrid Triazine-Carbosilane Dendrons: Synthesis and Self-Organization***. Abstract Book IDS11 –11th International Dendrimer Symposium. 14th – 18th July 2019 Funchal, Madeira Island, Portugal. P.79
12. N. Knauer, E. Pashkina, E. Apartsin, E. Fuentes, C.E. Gutierrez-Ulloa, M. Buyanova, F.J. de la Mata, R. Gómez. *Topology-Driven Effects of Carbosilane Dendrimers and Dendrons on Immune Cells*. Abstract Book IDS11 –11th International Dendrimer Symposium. 14th – 18th July 2019 Funchal, Madeira Island, Portugal. P.125
13. E. K. Apartsin, A. G. Venyaminova, F. J. de la Mata, R. Gómez. *Biomaterials based on cationic carbosilane dendritic molecules as nanocarriers for anti-cancer nucleic acids*. COST Action CA 17140 “Cancer Nanomedicine from the Bench to the Bedside” Working Group 1 Meeting. July 12-13, 2019 Universidade da Madeira, Funchal, Portugal. P. 20
14. E.K. Apartsin, V.I. Arkhipova, J. Sánchez-Nieves, A. G. Venyaminova, F. J. de la Mata, R. Gómez. *Smart amphiphilic dendrimer vesicles for drug delivery*. Abstracts. Russia-UK Workshop for Cell and Drug Delivery, 17th -19th September 2019, Manchester Metropolitan University, UK. P.22.
15. Dyrkheeva NS, Apartsin EK, Zakharenko AL, Ilina ES, Zakharova OD, Luzina OA, Ryabchikova EA, de la Mata FJ, Gómez R, Venyaminova AG, Salakhutdinov NF, Lavrik OI. *Development of the Tdp 1 inhibitors as drug precursors*. Abstracts. Russia-UK Workshop for Cell and Drug Delivery, 17th -19th September 2019, Manchester Metropolitan University, UK. P.27.
16. Yu.A. Laricheva, I.S. Dovydenko, E.K. Apartsin. *Interaction of hydrophobic trinuclear tungsten clusters with phospholipid bilayers: a route towards functional hybrid materials*. Abstracts. Russia-UK Workshop for Cell and Drug Delivery, 17th -19th September 2019, Manchester Metropolitan University, UK. P.30.
17. E. Apartsin, N. Knauer, E. Pashkina, V. Arkhipova, O. Boeva, J. Sánchez-Nieves, A. Venyaminova, F. Javier de la Mata, R. Gómez. *pH-Sensitive Triazine-Carbosilane Dendrimersomes for Anti-Cancer Drug Delivery*. Abstracts. First CA17140 COST Conference “Cancer Nanomedicine – from the Bench to the Bedside”, October 15-17, 2019, Bellevue Park Hotel, Riga, Latvia. P. 42.
18. N. Knauer, E. Pashkina, A. Aktanova, I. Mirzaeva, E. Kovalenko, N. Pronkina, E. Apartsin, V. Kozlov. *Evaluation of Cytotoxic Effects of Complexes of Cucurbit[7]uril and Antitumor Pt(II)-Derived Drugs*. Abstracts. First CA17140 COST Conference “Cancer Nanomedicine – from the Bench to the Bedside”, October 15-17, 2019, Bellevue Park Hotel, Riga, Latvia. P.82.
19. V. Arkhipova, E. Apartsin, J. Sánchez-Nieves, F. Javier de la Mata, R. Gómez. *Amphiphilic Triazine-Carbosilane Dendrons Containing Chargeable and Non-Chargeable Interior*. Abstracts. First CA17140 COST Conference “Cancer Nanomedicine – from the Bench to the Bedside”, October 15-17, 2019, Bellevue Park Hotel, Riga, Latvia. P.83.
20. V. Arkhipova, E. Apartsin, J. Sánchez-Nieves, F.J. de la Mata, R. Gómez. *Amphiphilic triazine-carbosilane dendrons forming pH-sensitive supramolecular associates*. Abstracts of the International congress of young scientists on pharmacy “Drug Research”. 22-23.10.2019. Kazan, Russia. P.5.
21. Arkhipova V., Apartsin E., Sánchez-Nieves J., Venyaminova A., de la Mata F.J., Gomez R. *Synthesis of amphiphilic triazine-carbosilane dendrons for drug delivery*. Modern Problems of Polymer Science. Program and Abstract Book of 15th International Saint Petersburg Conference of Young Scientists. October 28 – 31, 2019 Saint Petersburg. P. 207.
22. E.K. Apartsin, A.E. Grigoryeva, A.G. Venyaminova, A.-M. Caminade, J.-P . Majoral. *Biocompatible hydrogels based on phosphorus dendrimers as carriers for therapeutic nucleic acids*. VI International Biodendrimer Symposium (2018, Urbino, Italy). Book of abstracts. P.20
23. E. K. Apartsin. *Interaction of hydrophobic trinuclear tungsten clusters with phospholipid bilayers: a route towards functional hybrid materials*. International Workshop of the Medical Imaging Alliance Siberia-UK, Novosibirsk, Russia, 22-25 November, 2018 Book of abstracts. P.26-27
24. E. Apartsin, A. Ihnatsyey-Kachan, V. Dzmitruk, O. Krasheninina, M. Ionov, S. Loznikova, A. Venyaminova, D. Shcharbin, K. Milowska, S. Mignani, M.A. Muñoz-Fernández, J.-P. Majoral,

- M. Bryszewska. *Novel cationic phosphorous dendrimers as carriers for siRNA*. Abstracts. The 10-th International dendrimer symposium. 5-9 August 2017, Weihai, China. P.54**
25. Ihnatsyeu-Kachan A., Dzmitruk V., Michlewska S., Apartsin E., Maroto-Díaz M., Shcharbin D., Ionov M., Gómez-Ramírez R., de la Mata F.J., Muñoz-Fernández M.A., Majoral J.-P., Bryszewska M. *Novel dendrimers as delivery platform for gene drugs: in vitro examination*. Book of abstracts of the international conference "Vaccines and Vaccination", Moscow, September 27 - October 1, 2017. P. 23.
 26. E.K. Apartsin, S. Mignani, A.G. Venyaminova, J.-P. Majoral. *Synthesis of amphiphilic phosphorous dendrons for drug delivery*. Book of abstracts. International conference on Modern trends in dendrimer chemistry and applications. October 1-4, 2017, Moscow, Russia. P.56
 27. O. Krasheninina, E. Fuentes, E. Apartsin, A. Venyaminova, F. J. de la Mata, R. Gómez. *Binding of pro-apoptotic siRNAs by carbosilane dendrimers and dendrons*. Book of abstracts. International conference on Modern trends in dendrimer chemistry and applications. October 1-4, 2017, Moscow, Russia. P.57
 28. Cornelia E. Peña-González, Javier Sánchez-Nieves, Olga A. Krasheninina, Evgeny K. Apartsin, Alya G. Venyaminova, Rafael Gómez, F. Javier de la Mata. *Dendronized cationic gold nanoparticles: synthesis and siRNA binding*. XI Spanish-Portuguese Conference on Controlled Drug Delivery (Granada, Spain, 21-23.01.2016). Conference book of abstracts. P.79
 29. E. Apartsin, M. Buyanova, C. Gutiérrez, A. Venyaminova, F.J. de la Mata, R. Gómez. *siRNA complexation by carbosilane dendron micelles*. Abstracts. International scientific conference "Molecular, membrane and cell fundamentals of biosystems functioning". Minsk, Belarus, 28-30.06.2016. Part 1. P.204-206.
 30. E. Apartsin, C. Gutiérrez, M. Buyanova, A. Venyaminova, F.J. de la Mata, R. Gómez. *Carbon nanotubes decorated with cationic carbosilane dendrons and their hybrids with siRNA*. Abstracts. International scientific conference "Molecular, membrane and cell fundamentals of biosystems functioning". Minsk, Belarus, 28-30.06.2016. Part 1. P.207-209
 31. Apartsin E., Majoral J.-P., Gómez R., Shcharbin D., Bryszewska M., Venyaminova A. *The design of dendritic systems for the delivery of therapeutic nucleic acids*. Abstracts. International conference "Chemical Biology-2016". Novosibirsk, Russia 24-28.07.2016. P.79.
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 34. O. Krasheninina, E. Fuentes, E. Apartsin, M. Buyanova, D. Novopashina, A. Venyaminova, M. Ionov, A. Szulc, F. J. de la Mata, R. Gómez, D. Shcharbin, M. Bryszewska. *Complexes of pro-apoptotic siRNAs and carbosilane dendrimers*. Abstracts. International Roundtable on Nucleosides, Nucleotides and Nucleic Acids. Poznan, Poland. 2014. P. 236
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 36. E. Fedorovskaya, A. Okotrub, L. Bulusheva, E. Apartsin. *Biosensors based on composites of aligned carbon nanotubes and RNA*. International Conference "Advanced Carbon Nanostructures" Abstracts of Lectures & Young Scientists Contributed Papers. July 3, 2013 St. Petersburg, Russia P.605
 37. Apartsin E.K., Buyanova M.Yu., Novopashina D.S., Venyaminova A.G. *Fluorescent PEGylated single-walled carbon nanotubes and their hybrids with oligonucleotides*. Proceedings of the Annual World Conference on Carbon (Carbon 2012, June 17-22, 2012, Krakow, Poland) Extended Abstract CD (ISBN 978-83-60958-99-5). P.1-3
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 39. Apartsin E., Novopashina D., Venyaminova A. *Non-covalent hybrids of carbon nanotubes with oligonucleotides*. Coll. Symp. Ser. Chemistry of Nucleic Acid Components. 2011. V.12. P.421-423.;
 40. Apartsin E.K., Novopashina D.S., Venyaminova A.G. *Multifunctional hybrids of oligonucleotides with carbon nanotubes*. Hybrid Materials 2011 (6-10 March, 2011, Strasbourg, France). B.1.2.23;

41. E. Apartsin, D. Novopashina, A. Venyaminova. *Hybrids of pyrene-modified oligonucleotides with fluorescent carbon nanotubes*. XIX International Roundtable on Nucleosides, Nucleotides and Nucleic Acids (2010). Abstracts.
 42. E. Apartsin, D. Novopashina. Novel approach to obtain hybrids of carbon nanotubes and nucleic acids. Abstracts. 47th International Student Scientific Conference. Novosibirsk, Russia, 2009. P.30.
 43. Novopashina D., Kholodar S., Krasheninina O., Apartsin E., Meschaninova M., Venyaminova A. Pyrene conjugates of oligo(2'-O-methylribonucleotides) as a basis for design of fluorescent probes and nanoconstructions. Joint Symposium of 5th Annual Meeting of Oligonucleotide Therapeutics Society and the 19th Antisense Symposium (November 3-6, 2009, Fukuoka, Japan).
- + Several oral and poster contributions at young scientists' congresses and student conferences.

Prizes and Awards

<i>Aug 2019</i>	Newton Fund Researcher Links Scholarship, Manchester Metropolitan University, UK
<i>Aug 2018</i>	Giner de los Rios Scholarship, University of Alcalá, Madrid, Spain
<i>Aug 2017</i>	Prize of the International Dendrimers and Hyperbranched Polymers Application and Innovation Competition, Weihai, China
<i>Mar 2016</i>	Scholarship of the President of the Russian Federation
<i>Sep 2014</i>	The US Navy Award for the Researchers of the Future
<i>Jan 2013</i>	Scholarship of the President of the Russian Federation
<i>Dec 2011</i>	Personal Scholarship of the Government of the Novosibirsk region of the Russian Federation
<i>Dec 2011</i>	Silver distinction sign of the Government of the Novosibirsk region of the Russian Federation for young researchers "For significant achievements in scientific research"
<i>Apr 2011</i>	Winner of the competition for young scientists on innovations in science, Novosibirsk, Russia
<i>Apr 2010</i>	Winner of the 4th All-Russian student competition in nanotechnologies, Moscow, Russia
<i>Dec 2009</i>	Winner of the 1st Regional student competition in nanotechnologies, Novosibirsk, Russia

Term papers and MSc theses supervision

2018-2021	Valeria ARKHIPOVA , student of the Novosibirsk State University (Chemistry) MSc thesis <i>“Amphiphilic triazine-carbosilane dendrons for drug delivery”</i>
2016	Audrey MALRIN-FOURNOL , M1 student of the Ecole des Mines Albi-Carmaux (France), intern at the Institute of Chemical Biology and Fundamental Medicine (ICBFM), Novosibirsk, Russia Term paper <i>“Dendrimer-based hydrogels as carriers for therapeutic nucleic acids”</i>
2015	Evgeny GULYAK , student of the Novosibirsk State University (Chemistry) Term paper <i>“Assessment of the critical micelle concentration of carbosilane dendrons bearing palmitic acid residues in the focal point”</i>
2015	Yulia NUMEROTSKAYA , student of the Novosibirsk State University (Chemistry) Term paper <i>“Assessment of the critical micelle concentration of carbosilane dendrons bearing hexanoic acid residues in the focal point”</i>
2014-2016	Marina KUDROVA , student of the Novosibirsk State University (Chemistry) MSc thesis <i>“Complexes of cationic phosphorus dendrimers with siRNA and microRNA”</i>
2010-2015	Marina BUYANOVA , student of the Novosibirsk State University (Chemistry), then PhD student at ICBFM MSc thesis <i>“Multifunctional hybrids of siRNA-containing constructions with carbon nanotubes”</i>

Other supervising experience

2021	Antonín EDR , PhD student of the Institute of Chemical Processes Fundamentals (Prague, Czech Republic), intern at LCC CNRS
2019-2020	Olga BOEVA , student of the Novosibirsk State University (Medicine)
2019	Sergey DUDKO , student of the Novosibirsk State University (Physics)
2018-2019	Maxim ARKHIPOV , student of the Novosibirsk State University (Chemistry)
2017-2018	Yuliya SAMEYSHCHEVA , student of the Novosibirsk State University (Chemistry)
2015	Tania LOZANO DE LA CRUZ , PhD student of the University of Alcala (Madrid, Spain), intern at ICBFM
2015	Silvia MORENO , PhD student of the University of Alcala (Madrid, Spain), intern at ICBFM
2014, 2015	Cornelia E. PEÑA GONZÁLEZ , PhD student of the University of Alcala (Madrid, Spain), intern at ICBFM
2014	Carlos E. GUTIÉRREZ ULLOA , PhD student of the University of Alcala (Madrid, Spain), intern at ICBFM
2014	Olga NOWACKA , PhD student of the University of Lodz (Lodz, Poland), intern at ICBFM
2013, 2014	Joanna LAZNIEWSKA , PhD student of the University of Lodz (Lodz, Poland), intern at ICBFM

Third-party funds raised

Beneficiary

1. Marie Skłodowska-Curie Individual Fellowship EUREKA “Design of multifunctional phosphorous dendritic systems for drug delivery”, grant agreement No 844217 financed by European Union Horizon 2020 research and innovation programme (2020-2022)

Project leader

2. Grant of the President of the Russian Federation No. MK-2278.2019.4 “Complexes of microRNA with dendrimers and their immunomodulating properties” (2019-2020)
3. Grant of Russian Foundation for Basic Research (RFBR) for leading young research teams No. 18-33-20109 “Stimuli-sensitive dendrimer-based soft biomaterials for drug delivery” (2018-2020)
4. Grant of Russian Scientific Foundation No. 16-15-10156 “Bioinspired multi-level nanoconstructions for the delivery of nucleic acid into cells” (2016-2018) (among 3 co-proposers)
5. Grant of the President of the Russian Federation for young scientists No. 882.2016.4 “Novel types of supramolecular constructions for the transport of therapeutic nucleic acids into cells” (2016-2018)
6. Grant of Russian Foundation for Basic Research (RFBR) for prospective young scientists No. 16-33-60152 “Novel dendrimer-based biomaterials as carriers for therapeutic nucleic acids” (2016-2018)
7. RFBR Grant for Russia-Belarus joint young scientists groups No. 15-54-04068 “Complexes of pro-apoptotic microRNA with dendrimers for cancer gene therapy” (2015-2016)
8. RFBR Grant for young researchers No. 14-03-31691 “Multifunctional hybrids of nucleic acid constructions with carbon nanotubes for the delivery of therapeutic nucleic acids into cells” (2014-2015)
9. Grant of the President of the Russian Federation for young scientists No. 6266.2013.4 “Hybrids of nucleic acid constructions with carbon nanotubes for the design of RNA detection systems and the delivery of therapeutic nucleic acids into cells” (2013-2015)
10. Grant of the Foundation for Assistance to Small Innovative Enterprises of the Russian Federation for young innovators in science “Multifunctional hybrids of pyrene conjugates of oligonucleotides with carbon nanotubes” (2011-2012) (industry project)

Total amount raised: 196707 EUR [1] + 32000000 RUB (~550000 EUR²) [2-10] = ~750000 EUR

Research networks

1. **Secondary proposer and Vice-chair of a Working Group** in the COST Action CA17140 NANO2CLINIC “Cancer nanomedicine - from the bench to the bedside” (2018-2023) (>260 teams from 42 countries).
2. **Vice-chair of the ICBFM team** in the FP7-PEOPLE-IRSES NANOGENE Consortium “Nanomaterials-driven anti-cancer therapy” (2013-2016) (6 teams, 5 countries).

Participation in research projects

Participant in >15 national (RFBR grants, Federal Target Programmes of the Russian Government etc.) projects and international (Russian-French RFBR-CNRS joint projects) networks. Member of the Russian-American Laboratory of Biomedical Chemistry (ICBFM SB RAS, created in the frame of the MEGA-grant of the Russian government) lead by Prof. Sidney Altman (Yale University, US, Nobel Prize winner).

² Grant amounts were converted from RUB to EUR using conversion rates actual for the year of getting a grant.

List of academic cooperation partners

- **Dr. Anne-Marie Caminade, Dr. Jean-Pierre Majoral** (Laboratoire de Chimie de Coordination CNRS, Toulouse, France) - Design of multifunctional phosphorus dendrimers for drug delivery
- **Prof. Rafael Gómez, Prof. F. Javier de la Mata** (University of Alcalá, Madrid, Spain) - Design of carbosilane dendrimers and dendrons for drug delivery
- **Prof. Barbara Klajnert** (University of Łódź, Poland) - Intracellular delivery of photosensitizers for photodynamic therapy of skin cancers
- **Prof. Maria Bryszewska, Prof. Maksim Ionov** (University of Łódź, Poland), **Dr. Dzmitry Shcharbin** (Institute of Biophysics and Cell Engineering NASB, Minsk, Belarus) - Intracellular delivery of apoptosis-inducing short regulatory nucleic acids
- **Prof. Dr. Ulf Kahlert** (University Hospital Magdeburg, Germany) - Dendrimer-mediated drug delivery for anti-glioblastoma therapy
- **Dr. Ekaterina Pashkina** (Research Institute of Fundamental and Clinical Immunology, Novosibirsk, Russia) - Dendrimer-based constructions for immunotherapy and anti-cancer therapy
- **Prof. Larisa Karpenko** (Research Center of Virology and Biotechnology “Vector”, Novosibirsk region, Russia) - Dendrimer-mediated delivery of DNA/RNA vaccines against viral infectious diseases (Ebola virus, COVID-19)

Honorary activities

- | | |
|-------------------------------|---|
| <i>Editorial boards</i> | <ul style="list-style-type: none"> - Topic Editor of <i>Pharmaceutics</i> (MDPI) - Topic Editor of <i>Frontiers in Drug Delivery</i> (Frontiers) - Member of the Reviewer Board of <i>Cancers</i> (MDPI) |
| <i>Scientific memberships</i> | <ul style="list-style-type: none"> - Russian National Committee of Biochemists and Molecular Biologists - International Society for Nucleosides, Nucleotides and Nucleic Acids |

Service to the academic community

- | | |
|--|---|
| <i>Organisation of scientific meetings</i> | Co-chair, COST NANO2CLINIC Online Conference: Characterization of nanomaterials towards safe and efficient nanodrugs, June 22-23, 2021 |
| <i>Peer-review activity</i> | <p><i>Journals:</i> Biomolecules (MDPI), Cancers (MDPI), Chemosphere (Elsevier), International Immunopharmacology (Elsevier), International Journal of Molecular Sciences (MDPI), Journal of Drug Delivery Science and Technology (Elsevier), Journal of Functional Biomaterials (MDPI), Journal of Materials Chemistry B (RSC), Materials (MDPI), Molecules (MDPI), Nanoscale (RSC), Pharmaceutics (MDPI). >20 manuscripts in 2018-2021</p> <p><i>Monographs/Book proposals:</i> Taylor and Francis – CRC Press</p> |

Social activities

- | | |
|----------------------------------|---|
| <i>Popularization of science</i> | <ul style="list-style-type: none"> - Facebook page “Dendrimers at home” sharing recent advances in dendrimer science
https://www.facebook.com/dendrimersathome - Video “Dendrimers for nanomedicine” in the frame of French Science Festival “Fête de la Science 2020”
https://www.youtube.com/watch?v=pgnhqXFC6rk&feature=emb_logo - Interview “Voyage au coeur des pilules du futur” in the frame of European Researchers Night
https://exploreur.univ-toulouse.fr/voyage-au-coeur-des-nanomedicaments-avec-evgeny-apartsin |
| <i>Dissemination</i> | Administrator of the YouTube channel of the COST NANO2CLINIC Consortium
https://www.youtube.com/channel/UCoj8Co96qGHBmAceQqkRDfg |