

Konstantin K. LIKHAREV
Department of Physics and Astronomy
Stony Brook University (State University of New York)
Stony Brook, NY 11794-3800
Phone +1-631-632-8159, fax +1-631-632-4977
E-mail konstantin.likharev@stonybrook.edu
Web site <https://you.stonybrook.edu/likharev/>

Education

- 1966: Diploma (M.S.) in Physics, from Moscow State University, Russia
- 1969: Candidate of Science (Ph.D.) in Physics, from Moscow State University, Russia
- 1979: Doctor of Science in Physics, from Moscow State University and the Supreme Attestation Committee of the U.S.S.R.

Continuing Appointments

- (i) Department of Physics, Moscow State University, Russia:
 - 1969-1973: Junior Scientist
 - 1973-1987: Senior Scientist
 - 1987-1988: Major Scientist
 - 1988-1991: Head, Laboratory for Cryoelectronics
 - 1991-2007: Adjunct Leading Scientist
- (ii) Department of Physics and Astronomy, Stony Brook University:
 - 1991-2002: Professor
 - 2002-2017: Distinguished Professor
 - 2017- 2020: John S. Toll Professor
 - 2020-present: Distinguished Professor Emeritus

Visiting Positions

- 1996 (Jun. – Jul.): Eminent Visiting Scientist, RIKEN, Japan
- 1998 (Jan. – Jul.): Visiting Professor, Delft University of Technology, The Netherlands

Honors and Awards

- 1976: First Award, Young Scientists Council, Moscow State University
- 1980: Research Award, USSR Ministry for Higher Education
- 1984: Discovery Award, USSR Committee on Inventions and Discoveries
- 1996: Honorary Membership, Russian Metrological Academy
- 1997: Fellowship, American Physical Society
- 2002: Distinguished Professorship, State University of New York
- 2004: Award, IEEE Council for Applied Superconductivity
- 2008: Fellowship, Institute for Electrical and Electronic Engineers
- 2017: John S. Toll Professorship, Stony Brook University

Citations (as of November 27, 2020)

- Google Scholar*: 28,279 citations (including 1,315 in 2019); h-index 69
- Web of Science*: 14,110 citations (including 720 in 2019); h-index 51

MAJOR PUBLICATIONS

A. BOOKS

1. "Systems with Josephson Junctions: Basic Theory" (with B. T. Ulrich). Moscow U. Publishers (1978), 447 pp., in Russian.
2. "Dynamics of Josephson Junctions and Circuits". Gordon and Breach, New York (1986), 634 pp.
3. "Essential Graduate Physics: Lecture Notes and Problems". Open-access online material, available in the Academic Commons library of Stony Brook University (<http://commons.library.stonybrook.edu/egp/>) and on a mirror Web site <https://sites.google.com/site/likharevegp/> (2013), 1,300 pp.
4. "Classical Mechanics: Lecture notes". IOP Publishing (2017), 312 pp.
5. "Classical Mechanics: Problems with solutions". IOP Publishing (2018), 292 pp.
6. "Classical Electrodynamics: Lecture notes". IOP Publishing (2018), 512 pp.
7. "Classical Electrodynamics: Problems with solutions". IOP Publishing (2018), 464 pp.
8. "Quantum Mechanics: Lecture notes". IOP Publishing (2019), 570 pp.
9. "Quantum Mechanics: Problems with solutions". IOP Publishing (2019), 581 pp.
10. "Statistical Mechanics: Lecture notes". IOP Publishing (2019), 289 pp.
11. "Statistical Mechanics: Problems with solutions". IOP Publishing (2019), 286 pp.
12. "Essential Quotes for Scientists and Engineers". Springer (2021), 239 pp.

B. REVIEW PAPERS AND INVITED BOOK CHAPTERS

1. "S-c-S Contacts as Nonlinear Elements of Microwave Receiving Devices" (with A.N. Vystavkin *et al.*). *Rev. Phys. Appl.* **9**, No. 1, pp. 79-109 (1974).
2. "Superconductor Electronics" (with V.N. Gubankov). *Radiotekhnika i Elektronika* **20**, No. 1, pp. 1-27 (1975) - in Russian.
3. "Superconducting Weak Links". *Rev. Mod. Phys.* **51**, No. 1, pp. 101-160 (1979).
4. "Millimeter-Wave Josephson-Junction Receivers" (with V. V. Migulin). *Radiotekhnika i Elektronika* **25**, No. 6, pp. 1121-1150 (1980) [*Radio Eng. and Electron. Phys.* **25**, No. 6, pp. 1-18 (1980)].
5. "Signal and Noise Properties of SQUIDS" (with V. V. Danilov and O. V. Snigirev). In: *SQUID '80*, ed. by H.-D. Hahlbohm and H. Lubbig, Walter de Gruyter, Berlin, pp. 437-507 (1980).
6. "Performance Limits of Microwave Receivers with Josephson Junctions" (with V. P. Zavaleev). *IEEE Trans. Magn.* **17**, No. 1, pp. 830-833 (1981).
7. "Really-Quantum Macroscopic Effects in Weak Superconductivity". *Uspekhi Fiz. Nauk* **131**, No. 1, pp. 169-184 (1983) [*Sov. Phys. - Uspekhi* **26**, No. 1, p. 87 (1983)].
8. "Mutual Phase Locking in Josephson Junction Arrays" (with A.K. Jain *et al.*). *Phys. Repts.* **109**, No. 6, pp. 309-426 (1984).
9. "Secondary Quantum Macroscopic Effects in Weak Superconductivity" (with A. I. Larkin and Yu. N. Ovchinnikov). *Physica B+C* **126**, No. 1-3, pp. 414-422 (1984).

10. "Quantum-Statistical Theory of Microwave Detection Using Superconducting Tunnel Junctions" (with I. A. Devyatov *et al.*). *J. Appl. Phys.* **60**, No. 5, 1808-1828 (1986).
11. "Possibility of Creating Analog and Digital Integrated Circuits Using The Discrete, One Electron Tunneling Effect", *Microelectronika* **16**, No. 3, pp. 195-209 (1987).
12. "Correlated Discrete Transfer of Single Electrons in Ultrasmall Tunnel Junctions". *IBM J. Res. & Develop.* **32**, No. 1, pp. 144-158 (1988).
13. "New Possibilities for Superconductor Electronics" (with V. K. Semenov and A. B. Zorin). In: *Superconducting Devices*, ed. by S. T. Ruggiero and D. A. Rudman, Academic Press, Boston, pp. 1-49 (1990).
14. "Single-Electronics: A Correlated Transfer of Single Electrons and Cooper Pairs in Systems of Small Tunnel Junctions" (with D. V. Averin). In: *Mesoscopic Phenomena in Solids*, ed. by B. Altshuler *et al.* Elsevier, Amsterdam, pp. 173-271 (1991).
15. "Progress and Prospects of the Superconductor Electronics". *Supercond. Sci. Technol.* **3**, No. 7, pp. 325-338 (1990).
16. "Josephson Effect in High- T_c Superconductivity" (with M.Yu. Kupriyanov). *Uspekhi Fiz. Nauk* **160**, No. 5, pp. 49-88 (1990) [*Sov. Phys. Uspekhi.* **33**, No. 5, p. 340 (1990)].
17. "Single-Electronics: Correlated Transfer of Single Electrons in Ultrasmall Junctions, Arrays, and Systems". In: *Granular Nanoelectronics*, ed. by D. Ferry *et al.*, Plenum, New-York, pp. 371-391 (1991).
18. "RSFQ Logic/Memory Family: A New Josephson-Junction Technology for Sub-Terahertz-Clock-Frequency Digital Systems" (with V.K. Semenov). *IEEE Trans. on Appl. Supercond.* **1**, No. 1, pp. 3-26 (1991).
19. "Superconducting Devices and Electronics". In: *Concise Encyclopedia of Magnetic and Superconducting Materials*, ed. by J. Evetts, Pergamon Press, Oxford, pp. 517-525 (1992).
20. "Single Charge Tunneling - Time Correlation of Tunnel Events" (with T. Claeson *et al.*). *Supercond. Sci. Technol.* **4**, pp. 393-400 (1991).
21. "Possible Applications of the Single Charge Tunneling" (with D.V. Averin). In: *Single-Charge Tunneling*, ed. by H. Grabert and M. Devoret, Plenum, New York, pp. 311-322 (1992).
22. "Single-Electronics: Recent Developments" (with D.V. Averin). In: *Single-Electron Tunneling and Mesoscopic Devices*, ed. by H. Koch and H. Lubbig, Springer, Berlin, pp. 3-12 (1992).
23. "Single Electronics" (with T. Claeson). *Scientific American* **266**, pp. 80-85 (1992).
24. "Correlated Tunneling in Mesoscopic Systems". In: *New Phenomena in Mesoscopic Structures, Proceedings of Second Int. Symposium (Maui, Hawaii, December 7-11, 1992)*, pp. 1-8 (1992).
25. "Rapid Single-Flux-Quantum Logic". In: *The New Superconducting Electronics*, ed. by H. Weinstock and R. Ralston, Kluwer, Dordrecht, pp. 423-452 (1993).
26. "Superfast Computation Using Superconductor Circuits". In: *Enabling Technologies for Peta(FL)OPS Computing*, ed. by T. Sterling *et al.*, MIT Press, Cambridge, MA, pp. 19-28 (1994).
27. "Physics and Possible Applications of Single-Electron Devices". *FED Journal* **6**, Suppl. 1, pp. 5-14 (1995) - in Japanese.
28. "Ultrafast Superconductor Digital Electronics: RSFQ Technology Roadmap". *Czech. J. Phys.* **46**, Suppl. S6, pp. 3331-3338 (1996).
29. "Superconductors Speed up Computation". *Phys. World* **10**, No. 5, pp. 39-43 (1997); "Superconductors: Can They Speed up Computing? Reply". *Ibid.* **10**, No. 8, pp. 21-21 (1997).
30. "Novel Silicon-Based Nanoscale Devices for Terabit Memories". In: *GOMAC'98 Digest of Papers*, U.S. Defense Technical Information Center, Arlington, VA, pp. 395-398 (1998).

31. "Sub-single-electron Charge Transfer and Shot Noise in Nanostructures". In: *Proc. of the 16th Symposium on Energy Engineering Sciences*, ANL, Argonne, IL, pp. 16-23 (1998).
32. "Single-Electron Devices and Their Applications". *Proc. IEEE* **87**, No. 4, pp. 606-632 (1999).
33. "New Prospects for Silicon-Based Terabit Memories and Data Storage Systems". *Nanotechnology* **10**, No. 2, pp. 159-165 (1999).
34. "New Prospects for Terabit Integration". In: *Future Trends in Microelectronics*, ed. by S. Luryi, J. Xu, and A. Zaslavsky, Wiley, New York, pp. 323-338 (1999).
35. "RSFQ Computing: The Quest for Petaflops" (with M. Dorojevets *et al.*). In: *Future Trends in Microelectronics*, ed. by S. Luryi, J. Xu, and A. Zaslavsky, Wiley, New York, pp. 193-206 (1999).
36. "Superconductor Electronics: The Last (But Not Yet Lost) Battle". *FED Journal* **10**, Suppl. 2, pp. 3-4 (1999).
37. "Ultra High-speed Superconductor System Design: Phase 2" (with M. Dorojevets). *Lecture Notes in Computer Science* **1593**, pp. 1179-1182 (1999).
38. "Superconductor Devices for Ultrafast Computing". In: *Applications of Superconductors*, ed. by H. Weinstock, Kluwer, Dordrecht, pp. 247-293 (2000).
39. "New Prospects for Electrostatic Data Storage Systems" (with A. N. Korotkov). In: *Proc. of 8th Goddard Conference and 7th IEEE Symposium on Mass Storage Systems* (NASA, Greenbelt, MD), pp. 197-202 (2000).
40. "NOVORAM: A New Concept for Fast, Bit-Addressable Nonvolatile Memory Based on Crested Barriers". *IEEE Circuits and Devices* **16**, No. 4, pp. 16-21 (2000).
41. "100 GHz Scale Computing with Superconductor Interconnects", *Proc. of 7th Int. Dielectrics and Conductors for ULSI Multilevel Interconnects Conference (DCMIC)*, IMIC, Tampa, FL, pp. 87-104 (2001).
42. "Rapid Single Flux Quantum (RSFQ) Logic". In: *Encyclopedia of Materials: Science and Technology*. Elsevier, Amsterdam, pp. 8970-8975 (2001).
43. "RSFQ Technology: Devices and Circuits" (with P. Bunyk and D. Zinoviev). *Int. J. of High Speed Electronics and Systems* **11**, No. 1, pp. 257-305 (2001).
44. "Dragging Single Electrons". *Nature* **410**, No. 6828, pp. 531, 533 (2001).
45. "Sub-electron Charge Transfer and Multi-electron Avalanches in Single-electron Systems" (with A. Korotkov *et al.*). In: *Proc. of the 19th Symposium on Energy Engineering Sciences*, ANL, Argonne, IL, pp. 71-80 (2001).
46. "Report on UC Berkeley Nanoengineering Workshop" (with A. Majumar, J. Hickman, and A. Shakouri). *Microscale Thermophysical Engineering* **5**, No. 2, pp. 131-154 (2001).
47. "Sub-electron Charge Transport in Nanostructures" (with D. Kaplan *et al.*). In: *Proc. of the 20th Symposium on Energy Engineering Sciences*, ANL, Argonne, IL, pp. 231-240 (2002).
48. "RSFQ: The Fastest Digital Technology". *J. de Phys. IV* **12** (pr. 3), No. 5, p. 155 (2002).
49. "Sub-20-nm Electron Devices". In: *Advanced Semiconductor and Organic Nano-Techniques, Part 1*, ed. by H. Morkoç, Acad. Press, New York, pp. 239-302 (2003).
50. "Electronics Below 10 nm". In: *Nano and Giga Challenges in Microelectronics*, ed. by J. Greer *et al.*, Elsevier, Amsterdam, pp. 27-68 (2003).
51. "Hybrid Semiconductor-Molecular Nanoelectronics". *The Industrial Physicist* **9**, No. 3, pp. 20-23 (2003).
52. "CrossNets: High-Performance Neuromorphic Architectures for CMOL Circuits" (with A. Mayr, I. Muckra, and Ö. Türel). In: *Molecular Electronics III*, ed. by J. Reimers *et al.* (*Ann. New York Acad. Sci.* **1006**), pp. 146-163 (2003).
53. "Neuromorphic CMOL Circuits". In: *Proc. of IEEE-NANO 2003*, pp. 258 1-4 (2003).

54. "SET: Coulomb Blockade Devices". *Nano et Micro Technologies* **3**, No. 1-2, pp. 71-114 (2003).
55. "CMOL: A New Concept for Nanoelectronics". In: *Proc. of the 12th Int. Symp. on Nanostructures Physics and Technology* (St. Petersburg, Russia, 2004).
56. "Single-Electron Devices". In: *Encyclopedia of Nanoscience and Nanotechnology*, American Scientific Publishers, Stevenson Ranch, CA, vol. 9, pp. 865-884 (2004).
57. "Neuromorphic Architectures for Nanoelectronic Circuits" (with Ö. Türel, J. H. Lee, and X. Ma). *Int. J. of Circuit Theory and Applications* **32**, No. 5, pp. 277-302 (2004).
58. "Neuromorphic Architectures for Hybrid Nanoelectronic Circuits" (with J. H. Lee and X. Ma). In: *Proc. of the 8th Joint Conf. on Information Sciences*, pp. 1408-1411 (2005).
59. "CMOL: Devices, Circuits, and Architectures" (with D. Strukov). In: G. Cuniberti *et al.* (eds.), *Introducing Molecular Electronics*, Springer, Berlin, pp. 447-477 (2005).
60. "Afterlife for Silicon: CMOL Circuit Architectures" (with X. Ma, D.B. Strukov, and J. H. Lee). In: *Proc. of IEEE-NANO 2005*, Report TU-P7-1 (2005).
61. "CMOL" (with J. H. Lee, X. Ma, and D. B. Strukov). In: *Proc. of NanoArch'05*, pp. 3.9-3.16 (2005).
62. "CMOL: A Silicon-Based Bottom-Up Approach to Nanoelectronics", *Interface* **14**, No. 1, pp. 43-45 (2005).
63. "Hybrid CMOS/Nanoelectronic Digital Circuits: Devices, Architectures, and Design Automation" (with A. DeHon). In: *Proc. of ICCAD-2005*, IEEE Press, Piscataway, NJ, pp. 375-382 (2005).
64. "CMOL: Second Life for Silicon?", *Microelectronics Journal* **39**, pp. 177-183 (2008) (published online Dec. 4, 2006).
65. "CMOL CrossNets: Possible Neuromorphic Nanoelectronic Circuits" (with J. H. Lee and X. Ma). In: *Advances in Neural Information Processing Systems 18*, ed. by Y. Weiss *et al.*, MIT Press, Cambridge, MA, pp. 755-762 (2006).
66. "CMOL: Silicon's Chance for Reincarnation". In: *Proc. GOMACTech'2006*, pp. 349-352 (2006).
67. "Simplifying Hybrid Semiconductor-Nanodevice Circuits". In: *SPIE Newsroom*, available online at <http://spie.org/x8653.xml> (2006).
68. "Nanoarchitectonics: Advances in Nanoelectronics and Optronics" (with K. Wang *et al.*). In: *CRC Handbook of Nanoscience, Engineering and Technology*, 2nd ed., ed. by W. A. Goddard III *et al.*, CRC Press, pp. 10.1-10.24 (2007).
69. "Hybrid Semiconductor/Nanoelectronic Circuits". In: *Proc. of Nanotech'07* (NSTI, Cambridge, MA), p. 552-555 (2007).
70. "Single- and Few-Electron Memories". In: J. E. Brewer and M. Gill (eds.), *Nonvolatile Memory Technologies with Emphasis on Flash*, Wiley, Hoboken, NJ, pp. 689-696 (2008).
71. "Resistive and Hybrid CMOS/Nanodevice Memories". In: J. E. Brewer and M. Gill (eds.), *Nonvolatile Memory Technologies with Emphasis on Flash*, Wiley, Hoboken, NJ, pp. 696-703 (2008).
72. "NOVORAM/FGRAM". In: J. E. Brewer and M. Gill (eds.), *Nonvolatile Memory Technologies with Emphasis on Flash*, Wiley, Hoboken, NJ, pp. 703-707 (2008).
73. "Integrated Circuits Beyond CMOS". In: A. Korokin and F. Rosei (eds.), *Nanoelectronics and Photonics*, Springer, Berlin, 2008, pp. 5-7.
74. "Design and Defect Tolerance Beyond CMOS" (with X.S. Hu *et al.*). In: *Proc. CODES-ISSS'08*, ACM, pp. 223-229 (2008).
75. "Hybrid CMOS/Nanoelectronic Circuits: Opportunities and Challenges". *J. Nanoelectronics and Optoelectronics* **3**, No. 3, pp. 203-230 (2008).

76. "CrossNets: Neuromorphic Hybrid CMOS/Nanoelectronic Networks". *Science of Advanced Materials* **3**, No. 3, pp. 322-331 (2011).
77. "Reconfigurable Nano-Crossbar Architectures" (with D. B. Strukov). In: R. Waser (ed.), *Nanoelectronics and Information Technology*, 3rd ed., Wiley-VCH, Ch. 23 (2012).
78. "Superconductor Digital Electronics". *Physica C* **482**, pp. 6-18 (2012).
79. "Memory Technologies for Neural Networks" (with F. Merrikh-Bayat *et al.*). In: *Proc. of Int. Memory Workshop*, pp. 61-64 (2015).
80. "Spiking Neuromorphic Networks with Metal-Oxide Memristors" (with M. Prezioso *et al.*). In: *Proc. of ISCAS'2016* (Montreal, Canada, May 2016).
81. "Nanoelectronic Neurocomputing: Status and Prospects" (with L. Ceze *et al.*). In: *Proc. of 74th DRC* (Newark, DE, June 2016).
82. "Roadmap on Emerging Hardware and Technology for Machine Learning" (with K. Berggen *et al.*). *Nanotechnology* **32**, 012002 (2021).

C. ORIGINAL PEER-REVIEWED PAPERS IN JOURNALS AND COLLECTIONS

1. "Experimental Study of Transients in the Parametric Oscillator" (with V. A. Rylov). *Vestnik Moskovskogo Universiteta, Ser. Fiz.-Astr.* No. 5, pp. 31-37 (1964) [*Moscow University Physics Bulletin* **9**, No. 5 (1964)].
2. "On the Excitation Process in the Two-Frequency Parametric Oscillator" (with V. A. Rylov). *Radiotekhnika i Elektronika* **10**, No. 12, pp. 2244-2246 (1965) [*Radio Eng. and Electron. Phys.* **10**, No. 12, p. 1918 (1965)].
3. "Parametric Oscillator Phase Locking at the Difference Frequency". *Radiotekhnika i Elektronika* **11**, pp. 2086-2088 (1965) [*Radio Eng. and Electron. Phys.* **11**, p. 1840 (1966)].
4. "Combinational Mechanism of the Oscillation Growth Limitation at the Parametric Excitation". *Radiotekhnika i Elektronika* **12**, No. 3, pp. 517-519 (1967) [*Radio Eng. and Electron. Phys.* **12**, No. 3, p. 476 (1967)].
5. "Transients in the Three-Stable-State Parametric Oscillator". *Radiotekhnika i Elektronika* **12**, No. 7, pp. 1306-1309 (1967) [*Radio Eng. and Electron. Phys.* **12**, p. 1217 (1967)].
6. "Instability Zones of a Hill Equation" (with E.A. Sharkov). *Vestnik Moskovskogo Universiteta, Ser. Fiz.-Astr.* No. 4, pp. 119-121 (1967) [*Moscow University Physics Bulletin* **12**, No. 4 (1967)].
7. "Parametric Oscillator as a Videoamplifier" (with E. A. Sharkov). *Radiotekhnika i Elektronika* **13**, No. 7, pp. 1321-1324 (1968) [*Radio Eng. and Electron. Phys.* **13**, No. 7, p. 1150 (1968)].
8. "Theory of Dissipative Phenomena in Parametric Oscillators". *Radiotekhnika i Elektronika* **13**, No. 9, pp. 1714-1716 (1968) [*Radio Eng. and Electron. Phys.* **13**, No. 9, p. 1150 (1968)].
9. "Parametric Interactions at the AC Josephson Effect". *Vestnik Moskovskogo Universiteta, Ser. Fiz.-Astr.* No. 5, pp. 104-108 (1968) [*Moscow State University Physics Bulletin* **13**, No. 5, p. 56 (1968)].
10. "Stability of the Parametric Oscillator at the Combinational Mechanism of Limitation" (with O. V. Snigirev). *Vestnik Moskovskogo Universiteta, Ser. Fiz.-Astr.* No. 6, pp. 98-101 (1968) [*Moscow State University Physics Bulletin* **13**, No. 6 (1968)].
11. "To the Theory of the Josephson Junction Detector". *Vestnik Moskovskogo Universiteta, Ser. Fiz.-Astr.* No. 6, pp. 83-91 (1969) [*Moscow State University Physics Bull.* **14**, No. 6, p. 65 (1969)].
12. "Nonlinear Microwave Properties of Superconducting Thin Films" (with V. N. Gubankov and N. M. Margolin). *Zh. Eksp. Teor. Fiz. Pis'ma Red.* **11**, No. 5, pp. 246-250 (1970) [*JETP Lett.* **11**, p. 157 (1970)].

13. "Parametric Conversion and Amplification Using Superconducting Point Contacts" (with A. N. Vystavkin *et al.*) *Radiotekhnika i Elektronika* **15**, No. 11, pp. 2404-2407 (1970) [*Radio Eng. and Electron. Phys.* **15**, No. 11, p. 2121 (1970)].
14. "Theory of Circuits Using Elements with Sharp-Shaped I - V Characteristics" (with A. N. Lagutkin). *Vestnik Moskovskogo Universiteta, Ser. Fiz.-Astr.* No. 1, pp. 82-85 (1971) [*Moscow University Physics Bulletin* **15**, No. 1 (1971)].
15. "Nonlinear Microwave Properties of Superconducting Thin Films in the Mixed State" (with V. N. Gubankov). *Fiz. Tverd. Tela* **13**, No. 1, 125-130 (1971) [*Sov. Phys.-Solid State* **13**, No. 1 p. 99 (1971)].
16. "Linear Electrodynamics of Superconducting Thin Film Strips of a Finite Width". *Izv. Vyssh. Uchebn. Zaved. - Radiofizika* **14**, No. 6, pp. 909-918 (1971) [*Radiophys. and Quant. Electron.* **15**, p. 714 (1972)].
17. "Formation of Mixed State in Plane Superconducting Thin Films". *Izv. Vyssh. Uchebn. Zaved. - Radiofizika* **14**, No. 6, pp. 919-925 (1971) [*Radiophys. and Quant. Electron.* **14**, No. 6, p. 722 (1972)].
18. "Nonlinear Electrodynamics of Narrow Superconducting Thin Films". *Izv. Vyssh. Uchebn. Zaved. - Radiofizika* **14**, No. 8, 1232-1241 (1971) [*Radiophys. and Quant. Electron.* **14**, No. 8, p. 964 (1972)].
19. "Vortex Motion and Josephson Effect in Superconducting Thin Film Bridges". *Zh. Eksp. Teor. Fiz.* **61**, pp. 1700-1711 (1971) [*Sov. Phys. - JETP* **34**, p. 906 (1972)].
20. "Electrodynamic Properties of Superconducting Point Contacts" (with V. K. Semenov). *Radiotekhnika i Elektronika* **16**, No. 11, pp. 2167-2172 (1971) [*Radio Eng. and Electron. Phys.* **16**, p. 1917 (1971)].
21. "Viscous Motion of Vortices in the Type II Superconductors" (with M. Yu. Kupriyanov). *Pis'ma Zh. Eksp. Teor. Fiz.* **15**, No. 6, pp. 349-353 (1972) [*JETP Lett.* **15**, p. 247 (1972)].
22. "Fluctuation Spectrum in Superconducting Point Contacts" (with V. K. Semenov) *Pis'ma Zh. Eksp. Teor. Fiz.* **15**, No. 10, pp. 625-629 (1972) [*JETP Lett.* **15**, p. 442 (1972)].
23. "Peculiarities of the Parametric Regeneration in Superconducting Point Contacts" (with A. N. Vystavkin *et al.*) *Radiotekhnika i Elektronika* **17**, No. 4, pp. 896-899 (1972) [*Radio Eng. and Electron. Phys.* **17**, p. 705 (1972)].
24. "Properties of Superconducting Point Contacts" (with V. N. Gubankov and N. M. Margolin). *Fiz. Tverd. Tela* **14**, No. 4, pp. 953-960 (1972) [*Sov. Phys.-Solid State* **14**, p. 819 (1972)].
25. "Properties of the Superconducting Point Contact in a Resonator" (with V. K. Semenov). *Radiotekhnika i Elektronika* **17**, No. 9, pp. 1983-1986 (1972) [*Radio Eng. and Electron. Phys.* **17**, p.1586 (1972)].
26. "Nonlinear Microwave Properties of Narrow Superconducting Films" (with V. N. Gubankov and N. B. Pavlov). *Fiz. Tverd. Tela* **14**, No. 11, pp. 3186-3191 (1972) [*Sov. Phys.-Solid State* **14**, p. 2721 (1973)].
27. "Observation of an Anomalous Microwave Impedance of Superconducting Point Contacts" (with A. N. Vystavkin *et al.*) *Pis'ma Zh. Eksp. Teor. Fiz.* **17**, No. 6 pp. 284-288 (1973) [*JETP Lett.* **17**, p. 204 (1973)].
28. "Effect of Fluctuations on the Microwave Impedance of Superconducting Point Contacts" (with V. K. Semenov). *Radiotekhnika i Elektronika* **18**, No. 8, pp. 1757-1759 (1973) [*Radio Eng. Electron. Phys.* **18**, p. 1290 (1973)].
29. "Characteristics of the Josephson-Effect Detector with a Superconducting Point Contact. I. Wide-Band Mode of Operation" (with V. K. Semenov). *Radiotekhnika i Elektronika* **18**, No. 11, pp. 2390-2397 (1973) [*Radio Eng. and Electron. Phys.* **18**, p. 1734 (1973)].
30. "Characteristics of the Josephson Effect Detector with a Superconducting Point Contact. II. Selective Modes" (with V. K. Semenov). *Radiotekhnika i Elektronika* **18**, No. 12, pp. 2595-2602 (1973) [*Radio Eng. and Electron. Phys.* **18**, pp. 1892 (1973)].

31. "Spectral Density of Fluctuations in Superconducting Point Contacts" (with V. K. Semenov). *Vestnik Moskovskogo Universiteta. Ser. Fiz.-Astr.* No. 4, pp. 493-496 (1974) [*Moscow University Physics Bulletin* **19**, No. 4 (1974)].
32. "Downconversion with a Superconducting Point Contact: Self-Pumping" (with V. N. Gubankov). *Radiotekhnika i Elektronika* **19**, No. 2, pp. 388-394 (1974) [*Radio Eng. and Electron. Phys.* **19**, No. 2, p. 101 (1974)].
33. "Downconversion with a Superconducting Point Contact: External Pumping" (with V. N. Gubankov). *Radiotekhnika i Elektronika* **19**, No. 3, pp. 583-589 (1974) [*Radio Eng. and Electron. Phys.* **19**, No. 3, p. 92 (1974)].
34. "Theory of Self-Phase-Locking in Parametric Oscillators" (with A. N. Lagutkin). *Vestnik Moskovskogo Universiteta. Ser. Fiz.-Astr.* No. 5, pp. 565-570 (1973) [*Moscow University Physics Bulletin* **18**, No. 5 (1973)].
35. "Coherent Vortex Motion in Superconducting Bridges of Large Size" (with V. N. Gubankov, V. P. Koshelets, and G.A. Ovsyannikov). *Zh. Eksp. Teor. Fiz. Pis'ma Red.* **18**, No. 5, pp. 292-295 (1973) [*JETP Lett.* **18**, p. 171 (1973)].
36. "Nonlinear Properties of Granular Superconducting Films". *Fiz. Tverd. Tela* **15**, No. 8, pp. 2524-2527 (1973) [*Sov. Phys.-Solid State* **15**, p. 1679 (1974)].
37. "Resistance of Superconductor in the Dynamic Mixed State" (with V. V. Danilov and M. Yu. Kupriyanov). *Fiz. Tverd. Tela* **16**, No. 2, pp. 935-938 (1974) [*Sov. Phys.-Solid State* **16**, 602 (1974)].
38. "Properties of a Superconducting Ring Closed with a Weak Link as a Device with Several Stable States" *Radiotekhnika i Elektronika* **19**, No. 7, pp. 1494-1502 (1974) [*Radio Eng. and Electron. Phys.* **19**, No. 7, p. 109 (1974)].
39. "Edge Barrier Effect on the Critical Current of Superconducting Thin Films" (with M. Yu. Kupriyanov). *Fiz. Tverd. Tela* No. 10, pp. 2829-2832 (1974) [*Sov. Phys. - Solid State* **16**, No. 10, p. 1835 (1975)].
40. "Isothermal Domains in Quasi-One-Dimensional Superconductors". *Pis'ma Zh. Eksp. Teor. Fiz.* **20**, No. 11, pp. 730-733 (1974) [*JETP Lett.* **20**, p. 338 (1974)].
41. "On Some Aspects of the SQUID Optimization" (with B. V. Vasiliev and V. V. Danilov). *IEEE Trans. on Magn.* **11**, No. 2, pp. 743-748 (1975).
42. "Properties of a Josephson Junction Triode". *Radiotekhnika i Elektronika* **20**, No. 3, pp. 660-662 (1975) [*Radio Eng. and Electron. Phys.* **20**, No. 3, p. 135 (1975)].
43. "Steady-State Properties of Superconducting Bridges" (with L. A. Yakobson). *Zh. Tekhn. Fiz.* **45**, No. 7, pp. 1503-1509 (1975) [*Sov. Phys.-Tekhn. Phys.* **20**, p. 950 (1975)].
44. "Dynamic Properties of Superconducting Filaments of a Finite Length" (with L. A. Yakobson). *Zh. Eksp. Teor. Fiz.* **68**, No. 3, pp. 1150-1160 (1975) [*Sov. Phys.-JETP* **41**, p. 570 (1976)].
45. "Dynamic Properties of the Variable Thickness Bridges" (with L. A. Yakobson). *IEEE Trans. Magn.* **11**, No. 2, pp. 860-865 (1975).
46. "Ultimate Performance of a Superconducting Quantum Magnetometer" (with V. V. Danilov). *Zh. Eksp. Teor. Fiz.* **45**, No. 5, pp. 1110-1116 (1975) [*Sov. Phys.-Tekhn. Phys.* **20**, p. 697 (1975)].
47. "Microwave Impedance of Superconductors in the Mixed State" (with M. Yu. Kupriyanov). *Zh. Eksp. Teor. Fiz.* **68**, No. 3, pp. 1506-1513 (1975) [*Sov. Phys.-JETP* **41**, p. 755 (1976)].
48. "Transition Between Abrikosov and Josephson Vortices". *Fiz. Tverd. Tela* **17**, No. 9, pp. 2787-2789 (1975) [*Sov. Phys.-Solid State* **17**, p. 1856 (1976)].

49. "The $I(\varphi)$ Relationship, Abrikosov Vortices and Josephson Vortices in the Variable Thickness Bridges" (with M. Yu. Kupriyanov and L.A. Maslova). In: *Proc. of the 14-th Conf. on Low Temp. Phys.*, ed. by M. Krusius and M. Vuorio, North-Holland, Amsterdam, **4**, pp. 104-107 (1975).
50. "Non-Josephson Radiation from a Cavity Containing a Superconducting Point Contact Junction" (with A. N. Vystavkin *et al.*). *IEEE Trans. Magn.* **11**, No. 2, pp. 834-837 (1975).
51. "Quantum Interferometer Signal in the Hysteretic Mode of Operation" (with B. V. Vasiliev and V. V. Danilov). *Zh. Tekhn. Fiz.* **46**, No. 11, pp. 2409-2414 (1976) [*Sov. Phys.-Tekhn. Phys.* **21**, p. 1419 (1976)].
52. "Microwave Receiver with a Josephson Junction Detector in a Self-Selection Mode" (with V. A. Kulikov). *Izv. Vyssh. Uchebn. Zaved. - Radiofizika* **19**, No. 4, pp. 543-556 (1976) [*Radiophys. Quant. Electron.* **19**, No. 4, p. 383 (1976)].
53. "Critical Currents of Variable Thickness Bridges" (with G. M. Lapir, L. A. Maslova, and V. K. Semenov). In: *Proc. of the 14-th Int. Conf. on Low Temp. Phys.*, ed. by M. Krusius and M. Vuorio, North-Holland, Amsterdam **4**, 108-111 (1975); *Fiz. Nizk. Temp.* **1**, No. 10, 1235-1243 (1975) [*Sov. J. Low Temp. Phys.* **1**, 590 (1976)].
54. $I(\varphi)$ Relationship for SNS Variable Thickness Bridges". *Pis'ma Zh. Tekhn. Fiz.* **2**, No. 1, pp. 29-34 (1976) [*Sov. Phys.-Tech. Phys. Lett.* **2**, p. 12 (1977)].
55. "Channeling of Magnetic Field in Josephson Junctions". *Fiz. Nizk. Temp.* **2**, No. 12, pp. 209-211 (1976) [*Sov. J. Low Temp. Phys.* **2**, No. 12, p. 104 (1977)].
56. "Dynamics of Some Single Flux Quantum Devices. I. Parametric Quantron". *IEEE Trans. Magn.* **13**, No. 1, pp. 242-244 (1977).
57. "Dynamics of Some Single Flux Quantum Devices. II. Inhomogeneous Flux Shuttle". *IEEE Trans. Magn.* **13**, No. 1, pp. 245-247 (1977).
58. "Current Dependence of the Microwave Conductivity of Superconducting Thin Films" (with V. P. Andratskii *et al.*). *Zh. Eksp. Teor. Fiz.* **70**, No. 1, pp. 292-299 (1976) [*Sov. Phys. JETP* **43**, p. 151 (1977)].
59. "Josephson Vortices in the Variable Thickness Bridges" (with M. Yu. Kupriyanov and V. K. Semenov). *Fiz. Nizk. Temp.* **2**, No. 6, pp. 706-718 (1976) [*Sov. J. Low Temp. Phys.* **2**, p. 346 (1976)].
60. "Phenomenological Approach to Nonstationary Nonlinear Phenomena in Superconductors" (with M. Yu. Kupriyanov) In: *Proc. of the 14-th Int. Conf. Low Temp.*, ed. by M. Krusius and M. Vuorio, North-Holland, Amsterdam, vol. 2, pp. 357-360 (1975); *Fiz. Tverd. Tela* **18**, No. 7, 1947-1953 (1976) [*Sov. Phys.-Solid State* **18**, p. 1133 (1976)].
61. " I - V Curves of Low-Capacitance Josephson Junctions" (with A. B. Zorin). *Fiz. Nizk. Temp.* **3**, No. 2, pp. 148-151 (1977) [*Sov. J. Low Temp. Phys.* **3**, p. 70 (1977)].
62. "Properties of the Quasi-Autonomous Josephson Junction" (with L. S. Kuzmin). *Radiotekhnika i Elektronika* **22**, No. 8, pp. 1689-1698 (1977) [*Radio Eng. and Electron Phys.* **22**, No. 8, p. 109 (1977)].
63. "Performance Limits of the Two-Junction Magnetic Flux Detector" (with V. V. Danilov, O. V. Snigirev, and E. S. Soldatov). *IEEE Trans. Magn.* **13**, No. 1, 240-241 (1977); *Radiotekhnika i Elektronika* **22**, No. 11, pp. 2383-2391 (1977) [*Radio Eng. and Electron Phys.* **22**, No. 11 (1977)].
64. "Single-Frequency Parametric Amplifier Using Self-Pumped Josephson Junction" (with A. N. Vystavkin *et al.*). *IEEE Trans. Magn.* **13**, No. 1, 233-236 (1977); *Radiotekhnika i Elektronika* **22**, No. 6, pp. 1306-1309; No. 7, pp. 1530-1533 (1977) [*Radio Eng. Electron. Phys.* **22**, No. 6, p. 144; No. 7, p. 144 (1977)].
65. "Boundary Between the Static and Dynamic States in Long Josephson Junctions" (with M. Yu. Kupriyanov and V. K. Semenov). *Fiz. Nizk. Temp.* **2**, No. 10, pp. 1252-1256 (1976) [*Sov. J. Low Temp. Phys.* **2**, p. 610 (1976)].

66. "Properties of Josephson Junction in Wide-Band External Circuits" (with V. P. Zavaleev). *Radiotekhnika i Elektronika* **23**, No. 5, pp. 1061-1071 (1978) [*Radio Eng. and Electron Phys.* **23**, No. 5, p. 113 (1978)].
67. "Performance Limits of Some Wide-Band Devices with Josephson Junctions" (with V. P. Zavaleev). *Radiotekhnika i Elektronika* **23**, No. 6, pp. 1268-1278 (1978) [*Radio Eng. and Electron Phys.* **23**, No. 6, p. 120 (1978)].
68. "Applicability of the Theory of Josephson Effect in Tunnel Junctions to Weak Links" (with A. B. Zorin). *J. Phys.* **39**, No. 8 (Suppl. C6) pp. 573-574 (1978); *Fiz. Nizk. Temp.* **4**, No. 6, pp. 713-718 (1977) [*Sov. J. Low Temp. Phys.* **4**, 340 (1978)].
69. "Boundary Conditions for the Usadel Equations and Properties of Dirty SNS Sandwiches" (with Z. G. Ivanov *et al.*). *J. Phys.* **39**, No. 8 (Suppl. C6), pp. 556-557 (1978); *Fiz. Nizk. Temp.* **7**, No. 5, pp. 560-574 (1981) [*Sov. J. Low Temp. Phys.* **7**, No. 5, 274 (1981)].
70. "Single-Frequency Nondegenerate Regeneration in Parametric Circuits with External Pumping" (with V. N. Radzikhovskii). *Radiotekhnika i Elektronika* **24**, No. 8, pp. 1701-1703 (1979) - in Russian.
71. "Superconducting Quantum Interferometer with a Separate Drive Coil" (with S. S. Tinchev and O. V. Snigirev). *Radiotekhnika i Elektronika* **24**, No. 5, pp. 1087-1088 (1979) [*Radio Eng. and Electron Phys.* **24**, No. 5, p.143 (1979)].
72. "Properties of an Externally Pumped Josephson Junction" (with V. P. Zavaleev). *Radiotekhnika i Elektronika* **24**, No. 8, pp. 1630-1639 (1979) [*Radio Eng. and Electron Phys.* **24**, No. 8, p. 103 (1979)].
73. "A Simple Method of RF-SQUID Analysis and its Application to a SQUID with a Separate Pumping Coil" (with V. V. Tinchev and O. V. Snigirev). *IEEE Trans. Magn.* **15**, No. 1, pp. 439-442 (1979); *Radiotekhnika i Elektronika* **24**, No 8, pp. 1640-1648 (1979) [*Radio Eng. and Electron Phys.* **24**, No. 8, 110 (1979)].
74. "Josephson Junction with Lateral Current as a Vortex Transistor" (with V. K. Semenov, O. V. Snigirev, and B.N. Todorov). *IEEE Trans. Magn.* **15**, No. 1, pp. 420-423 (1979).
75. "Properties of Parametric Amplifiers Using Josephson Junctions with External Pumping" (with L. S. Kuzmin and V.V. Migulin). *IEEE Trans. Magn.* **15**, No. 1, pp. 454-457 (1979).
76. "Dynamic and Fluctuations Parameters of ac SQUIDs" (with V. V. Danilov). *Radiotekhnika i Elektronika* **25**, No. 8, pp. 1725-1735 (1980) [*Radio Eng. and Electron Phys.* **25**, No. 8, p. 112 (1980)].
77. "Dynamic and Fluctuation Parameters of dc SQUIDs" (with V. V. Danilov). *Radiotekhnika i Elektronika* **26**, No. 4, 842-851 (1982) - in Russian.
78. "High-Resistance Superconducting Microbridges with a Bismuth Span" (with A. L. Gudkov *et al.*). *Pis'ma Zh. Tekhn. Fiz.* **5**, No. 19, pp. 1206-1212 (1979) [*Sov. Phys.- Techn. Phys. Lett.* **5**, No. 10, p. 506 (1979)].
79. "The Sign of the Quasiparticle-Pair Interference Current in Superconducting Tunnel Junctions" (with A. B. Zorin, I. O. Kulik, and J. R. Schrieffer). *Fiz. Nizk. Temp.* **5**, No. 10, pp. 1138-1157 (1979) [*Sov. J. Low Temp. Phys.* **5**, p. 537 (1979)].
80. "Characteristics of Single-Frequency Nondegenerate Parametric Amplifier Using Externally Pumped Josephson Junction" (with L. S. Kuzmin and V. V. Migulin). *Radiotekhnika i Elektronika* **25**, No. 10, pp. 2195-2203 [*Radio Eng. and Electron Phys.* **25**, No. 10, p. 108 (1980)].
81. "Characteristics of Two-Frequency Degenerate Parametric Amplifier Using Externally Pumped Josephson Junction" (with L.S. Kuzmin and V. V. Migulin). *Radiotekhnika i Elektronika* **25**, No. 10, pp. 2204-2215 (1980) [*Radio Eng. and Electron Phys.* **25**, No. 10, p. 115 (1980)].
82. "Down-Conversion with the Josephson Junction at Large Values of the Intermediate Frequency" (with V. P. Dyakov and M. A. Tarasov). *Radiotekhnika i Elektronika* **25**, No. 8, pp. 1736-1744 (1980) [*Radio Eng. and Electron Phys.* **25**, No. 8, p.122 (1980)].

83. "Phase Modulation and New Circuits of ac SQUIDs" (with S. A. Belonogov, O. V. Snigirev and S. S. Tinchev). *Radiotekhnika i Elektronika* **25**, No. 12, pp. 2639-2646 (1980) [*Radio Eng. and Electron Phys.* **25**, No. 12, p. 116 (1980)].
84. "Microwave-Biased SQUID with the High- Q Dielectric Resonator" (with E. S. Soldatov, V. A. Khanin, V. K. Kornev and O. V. Snigirev). *Radiotekhnika i Elektronika* **25**, No. 12, pp. 2647-2655 (1980) [*Radio Eng. and Electron Phys.* **25**, No. 12, p.116 (1980)].
85. "Size of the Current Steps in Microwave-Irradiated Josephson Junctions" (with A. B. Zorin). *Pis'ma Zh. Tekhn. Fiz.* **6**, No. 2, pp. 96-101 (1980) [*Sov. Phys.-Techn. Phys. Lett.* **6**, No. 1, p. 43 (1980)].
86. "Impedance of a Josephson Junction with Small Capacitance" (with A. B. Zorin). *Radiotekhnika i Elektronika* **26**, No. 4, p. 834 (1981) [*Radio Eng. and Electron Phys.* **26**, No. 4 (1981)].
87. "Pulses with Preoscillations in a Time-Delay Structure with a Josephson Junction" (with V. K. Kornev). *Radiotekhnika i Elektronika* **25**, No. 3, 656-659 (1980) - in Russian.
88. "Performance Limits of Wideband Mixer Using the Externally Pumped Josephson Junction" (with V.P. Zavaleev). *Radiotekhnika i Elektronika* **26**, No. 7, pp. 1554-1563 (1981) [*Radio Eng. and Electron Phys.* **26**, No. 7 (1981)].
89. "Mutual Phase Locking of Josephson Junctions" (with L. S. Kuzmin and G. A. Ovsyannikov). *Radiotekhnika i Elektronika* **26**, No. 5, pp. 1067-1076 (1981) [*Radio Eng. and Electron Phys.* **26**, No. 5 (1981)]; *IEEE Trans. Magn.* **17**, No. 1, pp. 111-114 (1981).
90. "Dynamic and Fluctuational Parameters of DC SQUIDs" (with V. V. Danilov). *Radiotekhnika i Elektronika* **26**, No. 4, pp. 842-851 (1981) [*Radio Eng. and Electron Phys.* **26**, No. 4, pp. 122-129 (1981)].
91. "DC SQUID as a Microwave Generator" (with V. V. Danilov). *Radiotekhnika i Elektronika* **26**, No. 7, pp. 1545-1553 (1981) [*Radio Eng. and Electron Phys.* **26**, No. 7 (1981)].
92. "Microwave Receivers Using SQUIDs and Josephson Junction Arrays" (with L. S. Kuzmin and V. V. Migulin). *IEEE Trans. Magn.* **17**, No. 1, pp. 822-825 (1981).
93. "Dynamics of the Long Josephson Junctions" (with V. K. Semenov, S. A. Vasenko). *IEEE Trans. Magn.* **17**, No. 1, pp. 800-803 (1981); *Zh. Eksp. Teor. Fiz.* **81**, No. 4, pp. 1444-1455 (1981) [*Sov. Phys.-JETP* **54**, p. 766 (1981)].
94. "Macroscopic Quantum Tunneling and Dissipation in Josephson Junctions and SQUIDs". *Physica* **108B**, No. 1, pp. 1079-1080 (1981).
95. "Influence of Effective Electron Interaction on Critical Current of Josephson Weak Links" (with M. Yu. Kupriyanov and V. F. Lukichev).
 - (a) *Physica* **108B**, No. 1-3, pp. 1001-1002 (1981).
 - (b) *Zh. Eksp. Teor. Fiz.* **83**, No. 1, pp. 431-441 (1982) [*Sov. Phys. JETP*, **56**, No. 1, pp. 235-240 (1982)].
96. "Classical and Quantum Limitations on Energy Consumption in Computation". *Int. J. Theor. Phys.* **21**, No. 2/3, pp. 311-326 (1982).
97. "Low Frequency Behavior of Coupled Josephson Junctions Near Phase Locking" (with A. K. Jain *et al.*). *Appl. Phys. Lett.* **41**, No. 6, p. 566 (1982).
98. "Effect of Boundary Conditions upon the Phase Distribution in Two-Dimensional Josephson Junctions" (with A. Barone *et al.*). *J. Appl. Phys.* **53**, No. 8, pp. 5802-5809 (1982).
99. "Quantum Noise in SQUIDs" (with V. V. Danilov and A. B. Zorin). *IEEE Trans. Magn.* **19**, No. 3, pp. 572-575 (1983).
100. "Quantum Noise in Josephson-Effect Parametric Amplifiers" (with L. S. Kuzmin, V. V. Migulin, and A. B. Zorin). *IEEE Trans. Magn.* **19**, No. 3, pp. 618-621 (1983).

101. "Dynamics of Josephson Tunnel Junctions with a Finite-Width Riedel Peak" (with S. I. Turovets and A. B. Zorin). *IEEE Trans. Magn.* **19**, No. 3, pp. 629-632 (1983).
102. "Magnetic Field Distribution in Two-Dimensional Josephson Junctions" (with S. A. Vasenko and V. K. Semenov). *IEEE Trans. Magn.* **19**, No. 3, pp. 1027-1030 (1983); *Zh. Eksp. Teor. Fiz.* **86**, pp. 1132-1140 (1984) [*Sov. Phys.-JETP* **59**, p. 662 (1984)].
103. "Ultimate Sensitivity of Microwave Mixers Using Superconducting Tunnel Junctions" (with A. B. Zorin). *Radiotekhnika i Elektronika* **30**, No. 6, pp. 1200-1210 (1985) [*Radio Eng. and Electron Phys.* **30**, No. 6 (1985)].
104. "A Possible Standard of Current Based on the Secondary Quantum Macroscopic Effects in Superconductivity" (with A. B. Zorin). *Preprint No. 7/1984*, Department of Physics, Moscow State University.
105. "Bloch Oscillations in the Small Josephson Junctions" (with A. B. Zorin). In: *Proc. LT-17: Contributed Papers*. ed. by U. Eckern *et al.*, pp. 1153-1154 (1984).
106. "Bloch Oscillations in the Small Josephson Junctions: Possible Fundamental Standard of DC Current and Other Applications", (with A. B. Zorin). *IEEE Trans. Magn.* **21**, No. 2, pp. 943-946 (1985).
107. "Order Parameter Concept, and Phase Transitions in Linear Arrays of Josephson Junctions" (with W. Krech and K.-H. Bertel). In: *Proc. LT-17: Contributed Papers*, ed by U. Eckern *et al.*, pp. 909-910 (1984).
108. "Superconducting Properties of the Granular Pb-Bi-Alloy Variable-Thickness Microbridges" (with O. V. Snigirev and E. S. Soldatov). In: *Proc. LT-17: Contributed Papers*, ed by U. Eckern *et al.*, pp. 915-916 (1984).
109. "Electronic Simulation of Multi-Josephson-Junction Circuits" (with V. K. Kornev and K. Yu. Platov). *IEEE Trans. Magn.* **21**, No. 2, pp. 586-589 (1985).
110. "Reversible Conveyer Computation in Array of Parametric Quantrons" (with S. V. Rylov and V. K. Semenov). *IEEE Trans. Magn.* **21**, No. 2, pp. 947-950 (1985).
111. "Theory of the Bloch-Wave Oscillations in Small Josephson Junctions" (with A. B. Zorin). *J. Low Temp. Phys.* **59**, No 5/6, pp. 347-382 (1985).
112. "Probable Coherent Oscillations at Single-Electron Tunneling" (with D. V. Averin). In: *SQUID '85*, ed. by H.-D. Hahlbohm and K. Lübbig, W. de Gruyter, Berlin, pp. 197-200 (1985).
113. "Quantum Fluctuations at Quadratic Videodetection of Microwave Radiation Using Superconducting Junctions" (with I.A. Devyatov and A.B. Zorin). *Ibid*, pp. 1011-1016 (1985).
114. "Mutual Phase Locking in Arrays of the Josephson Tunnel Junctions" (with V. K. Kornev *et al.*). *Ibid*, 1059-1064 (1985).
115. "X-band Parametric Amplifier and Microwave SQUID Using Single-Tunnel-Junction Superconducting Interferometer" (with L.S. Kuzmin *et al.*). *Ibid*, pp. 1023-1034 (1985).
116. "Resistive Single Flux Quantum Logics for the Josephson- Junction Digital Technology" (with O. A. Mukhanov and V.K. Semenov). *Ibid*, pp. 1103-1108 (1985).
117. "Coulomb Blockade of Tunneling, and Coherent Oscillations in Small Tunnel Junctions" (with D. V. Averin). *J. Low Temp. Phys.* **62**, No. 3/4, pp. 345-372 (1986).
118. "High-Performance Edge-Type Josephson Junctions Nb-Si*-Nb" (with A. L. Gudkov and V. I. Makhov). *Pis'ma Zh. Tekhn. Fiz.* **11**, No. 23, pp. 1423-1427 (1985) [*Sov. J. Techn. Phys. Lett.* **11**, No. 12, p. 1423 (1985)].
119. "Single-Electron Transistors: Electrostatic Analogs of the DC SQUIDS". *IEEE Trans. Magn.* **23**, No. 2, pp. 1142-1145 (1987).

120. "New Results of the Theory of SET and Bloch Oscillations in Small Tunnel Junctions". *IEEE Trans. Magn.* **23**, No. 2, pp. 1138-1141 (1987).
121. "Experimental Study of Mutual Phase Locking in Josephson Tunnel Junctions" (with L. S. Kuzmin and E. S. Soldatov). *IEEE Trans. Magn.* **23**, No. 2, pp. 1051-1053 (1987).
122. "Experimental Realization of a Resistive Single Flux Quantum Logic Circuit" (with V. P. Koshelets *et al.*). *IEEE Trans. Magn.* **23**, No. 2, pp. 755-758 (1987).
123. "Ultimate Performance of the RSFQ Logic Circuits" (with O.A. Mukhanov and V. K. Semenov). *IEEE Trans. Magn.* **23**, No. 2, pp. 759-762 (1987).
124. "Josephson A/D Converters Using Differential Coding" (with S.V. Rylov and V. K. Semenov). *IEEE Trans. Magn.* **23**, No. 2, pp. 735-738 (1987).
125. "Effect of Dimensions of Josephson Junctions on Their Macroscopic Quantum Properties" (with S. A. Vasenko). *Fiz. Nizk. Temp.* **13**, No. 7, 755-758 (1987) [*Sov. J. Low Temp. Phys.* **13**, No. 7, 432 (1987)].
126. "Direct Observation of the Correlated Discrete Single-Electron Tunneling" (with L. S. Kuzmin). *Pis'ma Zh. Eksp. Teor. Fiz.* **45**, No. 8, pp. 389-390 (1987) [*JETP Lett.* **45**, No. 8, pp. 495-496 (1987)]; *Jpn. J. Appl. Phys.* **26** (Suppl. 3), pp. 1387-1389 (1987).
127. "Microscopic Structure and Contact Properties of the High- T_c Super-conducting Ceramics (with A. V. Varlashkin *et al.*). *Pis'ma Zh. Eksp. Teor. Fiz.* **46** (suppl.), pp. 59-62 (1987) [*JETP Lett.* **46** (suppl.), p. S52 (1987)]; In: Ext. Abstr. ISEC'87, Tokyo, p. 410 (1987).
128. "Simultaneous Quantization of Current and Voltage in Small Super-conducting Tunnel Structures" (with A. B. Zorin). *Jpn. J. Appl. Phys.* **26** (Suppl. 3), 1407-1408 (1987).
129. "Electrical, Magnetic and Structure Properties of the YBaCuO Single Crystals" (with L. Z. Avdeev *et al.*). *Pis'ma Zh. Eksp. Teor. Fiz.* **46**, No. 5, pp. 196-199 (1987) [*JETP Lett.* **46**, No. 5 (1987)].
130. "Experimental Study of the RSFQ Logic Circuits" (with V. K. Kaplunenko *et al.*). In: *Ext. Abstr. ISEC'87*, Tokyo, pp. 127-130 (1987).
131. "DC Powered Parametric Quantron" (with S. V. Rylov and V. K. Semenov). *Ibid*, pp. 135-137 (1987).
132. "Possible Logic Circuits Based on the Correlated Single-Electron Tunneling in Ultrasmall Junctions" (with V.K. Semenov). *Ibid*, pp. 182-185 (1987).
133. "Properties of Josephson Junctions with an Amorphous Silicon Interlayer" (with A. L. Gudkov and M. Yu. Kupriyanov). *Zh. Eksp. Teor. Fiz.* **94**, No. 7, pp. 319-332 (1988) [*Sov. Phys. - JETP* **68**, No. 1, p. 1478 (1988)].
134. "Josephson Effect and Macroscopic Quantum Interference in High- T_c Superconducting Thin-Film Weak Links at 77 K" (with A. I. Golovashkin *et al.*). *Pis'ma Zh. Tekhn. Fiz.* **14**, No. 14, 1256-1260 (1988) [*Sov. Techn. Phys. Lett.* **14**, No. 7, 549 (1988); *IEEE Trans. Magn.* **25**, No. 2, 943-945 (1989)].
135. "Magnetic Properties and Critical Current of Superconducting Thin Films RBaCuO (R = Y, Eu, Ho)" (with L. Z. Avdeev *et al.*). *Pis'ma Zh. Eksp. Teor. Fiz.* **47**, No. 10, pp. 508-510 (1988) [*JETP Lett.* **47**, No. 10, p. 594 (1988)].
136. "Reproduction of the Single Flux Quantum Pulses in Josephson Junction Systems" (with O. A. Mukhanov and V. K. Semenov). *Mikroelektronika* **17**, No. 2, pp. 147-154 (1988) [*Sov. Microelectronics* **17**, No. 2 (1988)].
137. "Single-Electron Tunnel Junction Array: An Electrostatic Analog of the Josephson Transmission Line" (with N. S. Bakhvalov *et al.*). *IEEE Trans. Magn.* **25**, No. 2, 1436-1439 (1989); *Zh. Eksp. Teor. Fiz.* **95**, No. 3, pp. 1010-1021 (1989) [*Sov. Phys.-JETP* **68**, No. 3, pp. 581-587 (1989)].

138. "Experimental Study of the RSFQ Logic Elements" (with V. K. Kaplunenko *et al.*). *IEEE Trans. Magn.* **25**, No. 2, pp. 1436-1439 (1989).
139. "Single-Electron Charging Effects in 1-D Arrays of Ultrasmall Tunnel Junctions" (with L. S. Kuzmin *et al.*). *Phys. Rev. Lett.* **62**, No. 21, pp. 2539-2541 (1989).
140. "Superconducting Electronics: New Prospects" (with V. K. Semenov and A. B. Zorin). *IEEE Trans. Magn.* **25**, No. 2, pp. 1290-1293 (1989).
141. "Single-Electron Charging Effects in Arrays of Ultra-Small Tunnel Junctions" (with L. S. Kuzmin *et al.*). In: *Ext. Abstr. ISEC'89, Tokyo*, pp. 549-552 (1989).
142. "Effect of High-Frequency Environment on the Single Electron Tunneling in Ultrasmall Junctions" (with P. Delsing *et al.*). *Phys. Rev. Lett.* **63**, No. 11, pp. 1180-1184 (1989).
143. "Two Fundamental Results from Low-Temperature Experiments with One-Dimensional Arrays of Ultrasmall Tunnel Junctions" (with T. Claeson *et al.*). In: *Proc. of 3rd Int. Conf. on Found. of Quantum Mechanics (ISQM-Tokyo'89)*, pp. 255-262 (1989).
144. "Time-Correlated Single-Electron Tunneling in One-Dimensional Arrays of Ultrasmall Tunnel Junctions" (with P. Delsing *et al.*). *Phys. Rev. Lett.* **63**, No. 17, pp. 1861-1865 (1989).
145. "Statics and Dynamics of Single-Electron Solitons in Two-Dimensional Arrays of Ultrasmall Tunnel Junctions" (with N.S. Bakhvalov *et al.*), *Physica B* **173**, pp. 319-328 (1991).
146. "Two Ways Toward Experimental Observation of the Bloch Oscillations in Ultrasmall Josephson Junctions" (with A. B. Zorin and L. S. Kuzmin). *Physica B* **165&166**, pp. 933-934 (1990).
147. "Single-Electron Charging of the Quantum Wells and Dots" (with A. N. Korotkov and D. V. Averin). *Physica B* **165&166**, pp. 927-928 (1990).
148. "Experimental Implementation of an Analog-to-Digital Converter Based on the Reversible Ripple Counter" (with L. V. Filippenko *et al.*). *IEEE Trans. Magn.* **27**, No. 2, pp. 2464-2467 (1990).
149. "Observation of the Single-Electron-Tunneling Oscillations" (with P. Delsing *et al.*). *Phys. Rev. B* **42**, No. 12, pp. 7439-7453 (1990).
150. "1-D Array Implementation of the Resistively-Coupled Single-Electron Transistor" (with P. Delsing *et al.*). *IEEE Trans. Magn.* **27**, No. 2, pp. 2581-2584 (1991).
151. "Towards the Quantitative Theory of the High- T_c Josephson Junctions" (with M. Yu. Kupriyanov). *IEEE Trans. Magn.* **27**, No. 2, pp. 2460-2463 (1991).
152. "Single-Electron Transistors as Ultrasensitive Electrometers" (with A. N. Korotkov and S. A. Vasenko). In: *Single-Electron Tunneling and Mesoscopic Devices*, ed. by H. Koch and H. Lübbig, Springer, Berlin, 45-60 (1992).
153. "New Results on SET-Oscillations in One-Dimensional Arrays of Tunnel Junctions" (with P. Delsing *et al.*). In: *Single-Electron Tunneling and Mesoscopic Devices*, ed. by H. Koch and H. Lübbig, Springer, Berlin, 97-103 (1992).
154. "Wigner Lattice Dynamics and SET Oscillations in 1D Electron Channels" (with D. V. Averin). In: *Nanostructures and Mesoscopic Systems*, ed. by W. Kirk and M. Reed, Acad. Press, Boston, pp. 283-295 (1992).
155. "Theory of Single-Electron Charging of the Quantum Wells and Dots" (with D. V. Averin and A. N. Korotkov). *Phys. Rev. B* **44**, No. 12, pp. 6199-6211 (1991).
156. "Experimental Evidence for the Coulomb Blockade of Cooper Pair Tunneling and Bloch Oscillations in Single Josephson Junctions" (with D. Haviland *et al.*). *Z. Phys. B* **85**, No. 2, pp. 339-347 (1991).

157. "New RSFQ Circuits" (with S. V. Polonsky *et al.*). *IEEE Trans. on Appl. Supercond.* **3**, No. 1, pp. 2566-2577 (1993).
158. "Single-Electron Quantization of Electric Field Domains in Slim Semiconductor Superlattices". *Appl. Phys. Lett.* **62**, No. 24, pp. 3282-3284 (1993).
159. "Combined Bloch and Single-Electron Tunneling Oscillations in One-Dimensional Arrays of Small Tunnel Junctions" (with A. N. Korotkov and D. V. Averin). *Physica B* **194-196**, pp. 1333-1334 (1994). *Phys. Rev. B* **49**, No. 3, pp. 1915-1918 (1994).
160. "Development of Sensitive SFQ-Counting Converter" (with J. C. Lin *et al.*). In: *Ext. Abstr. ISEC'93*, NIST, Boulder, CO, pp. 90-91 (1993).
161. "Photoresponse and Photosensitivity of Single-Electron Tunneling Systems" (with I. A. Devyatov). *Physica B* **194-196**, pp. 1341-1342 (1994).
162. "Single Electron Tunneling in Single Junctions and Multi-Junction Systems" (with P. D. Dresselhaus *et al.*). *Physica B* **194-196**, pp. 1335-1336 (1994).
163. "Single-Electron Coulomb Exclusion on the Atomic Level" (with D. V. Averin *et al.*). *Appl. Phys. Lett.* **64**, No. 1, pp. 126-128 (1994).
164. "Statistical Properties of Continuous-Wave Bloch Oscillations in Double-Well Semiconductor Heterostructures" (with A. N. Korotkov and D. V. Averin). *Phys. Rev.* **B 49**, No. 11, pp. 7548-7556 (1994).
165. "Measurement of Single Electron Lifetimes in a Multijunction Trap" (with P. Dresselhaus *et al.*). *Phys. Rev. Lett.* **72**, No. 16, pp. 3226-3229 (1994).
166. "TASERs: Possible DC-Powered Terahertz Lasers Using Interwell Transitions in Semiconductor Heterostructures" (with A. N. Korotkov and D. V. Averin). *Appl. Phys. Lett.* **65**, No. 15, pp. 1865-1867 (1994).
167. "Comparison of Single Electron Traps in the Superconducting and Normal States" (with J. E. Lukens *et al.*). *Physica B* **203**, pp. 354-360 (1994).
168. "High-Speed Single-Flux-Quantum Circuit Using Planarized Niobium-Trilayer Josephson Junction Technology" (with P. I. Bunyk *et al.*). *Appl. Phys. Lett.* **66**, No. 5, pp. 646-648 (1995).
169. "Design of SFQ-Counting Analog-to-Digital Converter" (with J. C. Lin and V. K. Semenov). *IEEE Trans. Appl. Supercond.* **5**, No. 2, pp. 2252-2259 (1995).
170. "Rapid Single Flux Quantum Random Access Memory" (with S. V. Polonsky *et al.*). *IEEE Trans. Appl. Supercond.* **5**, No. 2, pp. 3000-3005 (1995).
171. "Signal Resolution of RSFQ Comparators" (with T. V. Filippov *et al.*). *IEEE Trans. Appl. Supercond.* **5**, No. 2, pp. 2240-2243 (1995).
172. "Numerical Study of the Dynamics and Statistics of Single Electron Systems" (with L. R. C. Fonseca *et al.*). *J. Appl. Phys.* **78**, No. 5, pp. 3238-3251 (1995); "SENECA: a new program for the analysis of single-electron devices", *VLSI Design* **6**, No. 1-4, pp. 57-60 (1998).
173. "Possible Performance of Capacitively-Coupled Single-Electron Transistors in Digital Circuits" (with R. H. Chen and A. N. Korotkov). *J. Appl. Phys.* **78**, No. 4, pp. 2520-2530 (1995).
174. "Electron-Electron Interaction in Linear Arrays of Small Tunnel Junctions" (with K. Matsuoka). *Appl. Phys. Lett.* **67**, No. 21, pp. 3037-3039 (1995).
175. "All-High- T_c Superconductor Rapid-Single-Flux-Quantum Circuit Operating at ~ 30 K" (with S. Shokhor *et al.*). *Appl. Phys. Lett.* **67**, No. 19, pp. 2869-2871 (1995).

176. "Analysis of Q_0 -independent single-electron systems" (with A. N. Korotkov). In: *Abstr. of Int. Workshop on Comput. Electron.* (Tampe, AZ, Oct. 30 - Nov. 2, 1995), p. 42.
177. "Ultradense Hybrid SET/FET Dynamic RAM: Feasibility of Background-Charge-Independent Room-Temperature Single-Electron Digital Circuits" (with A. N. Korotkov). In: *Proc. ISDRS'95*, pp. 355-358 (1995); *VLSI Design* **6**, pp. 341-344 (1998).
178. "Single-Electron Parametron: Reversible Computation in a Discrete State System" (with A.N. Korotkov). *Science* **273**, No. 5276, pp. 763-765 (1996); *VLSI Design* **6**, pp. 43-46 (1998).
179. "A Numerical Study of the Accuracy of Single-Electron Current Standards" (with L. R. C. Fonseca and A. N. Korotkov), *J. Appl. Phys.* **79**, No. 12, pp. 9115-9125 (1996).
180. "Single-Electron-Transistor Logic" (with R. H. Chen and A. N. Korotkov). *Appl. Phys. Lett.* **68**, No. 14, pp. 1954-1956 (1996).
181. "Accuracy of the Single-electron Pump Using an Optimized Step-like RF Drive Waveform" (with L. R. C. Fonseca and A. N. Korotkov), *Appl. Phys. Lett.* **69**, No. 13, pp. 1858-1860 (1996).
182. "Hybrid Technology Multithread Architecture" (with G. Gao *et al.*). In: *Proc. of 6th Symp. on the Frontiers of Massively Parallel Computation (Frontiers '96)*, IEEE Comput. Soc. Press, pp. 98-105 (1996).
183. "Feasibility Study of RSFQ-based Self-Routing Nonblocking Digital Switches" (with D.Yu. Zinoviev). *IEEE Trans. on Appl. Supercond.* **7**, No. 2, 3155-3163 (1997).
184. "SFQ Balanced Comparators at Finite Sampling Rate" (with V. K. Semenov *et al.*). *IEEE Trans. on Appl. Supercond.* **7**, No. 2, 3617-3621 (1997).
185. "Single Electron Traps: A Quantitative Comparison of Theory and Experiment" (with K. A. Matsuoka *et al.*). *J. Appl. Phys.* **81**, No. 5, p. 2269 (1997).
186. "Effect of Screening on Shot Noise of Diffusive Mesoscopic Conductors" (with Y. Naveh and D. Averin). *Phys. Rev. Lett.* **79**, No. 18, pp. 3482-3485 (1997).
187. "Nanoscale Field-Effect Transistors: An Ultimate Size Analysis" (with F. Pikus). *Appl. Phys. Lett.* **71**, No. 25, pp. 3661-3663 (1997).
188. "Multiple-Junction Single-Electron Transistors for Digital Applications" (with R. Chen). *Appl. Phys. Lett.* **72**, No. 1, pp. 61-63 (1998).
189. "Noise Properties and AC Conductance of Mesoscopic Diffusive Conductors with Screening" (with Y. Naveh and D. Averin). *Phys. Rev.* **B 59**, No. 4, pp. 2848-2860 (1999).
190. "Shot Noise of Single-electron Tunneling in One-dimensional Arrays" (with K. A. Matsuoka). *Phys. Rev. B* **57**, No. 24, pp. 15613-15622 (1998).
191. "Shot Noise in Diffusive Conductors: A Quantitative Analysis of Electron-Phonon Interaction Effects" (with Y. Naveh and D. Averin). *Phys. Rev. B* **58**, No. 23, pp. 15371-15374 (1998).
192. "Single-Electron-Parametron-Based Logic Devices" (with A. N. Korotkov). *J. Appl. Phys.* **84**, No. 11, pp. 6114-6126 (1998).
193. "Layered Tunnel Barriers for Nonvolatile Memory Devices". *Appl. Phys. Lett.* **73**, No. 15, pp. 2137-2139 (1998).
194. "Superconductor Digital Frequency Divider Operating up to 750 GHz" (with W. Chen *et al.*). *Appl. Phys. Lett.* **73**, No. 19, pp. 2817-2819 (1998).
195. "Rapid Single Flux Quantum T-Flip Flop Operating up to 770 GHz" (with W. Chen *et al.*). *IEEE Trans. on Appl. Supercond.* **9**, No. 2, pp. 3212-3215 (1999).

196. "RSFQ Front-end for a Software Radio Receiver" (with E. B. Wikborg and V. K. Semenov). *IEEE Trans. on Appl. Supercond.* **9**, No. 2, pp. 3615-3618 (1999).
197. "Pulse Jitter and Timing Errors in RSFQ Circuits" (with A. V. Rylyakov). *IEEE Trans. on Appl. Supercond.* **9**, No. 2, pp. 3539-3544 (1999).
198. "CNET: RSFQ Switching Network for Petaflops-Scale Computing" (with L. Wittie, D. Yu. Zinoviev, and G. Sazaklis). *IEEE Trans. on Appl. Supercond.* **9**, No. 2, pp. 4034-4039 (1999).
199. "COOL-0: Design for RSFQ Subsystem for Petaflops Computing" (with M. Dorojevets, P. Bunyk, and D. Zinoviev). *IEEE Trans. on Appl. Supercond.* **9**, No. 2, pp. 3606-3614 (1999).
200. "Shot Noise Suppression in Multimode Ballistic Fermi Conductors" (with Y. Naveh and A. N. Korotkov). *Phys. Rev. B* **60**, No. 4, pp. R2169-2172 (1999).
201. "Possible Cooling by Resonant Fowler-Nordheim Emission" (with A. N. Korotkov). *Appl. Phys. Lett.*, **75**, No. 16, pp. 2491-2493 (1999); *Physica B* **284-288**, pp. 2030-2031 (2000).
202. "Resonant Fowler-Nordheim Tunneling and its Possible Applications" (with A. N. Korotkov). In: *IEDM Techn. Dig.*, pp. 223-226 (1999).
203. "Shrinking Limits of Silicon MOSFETs: Numerical Study of 10-nm-scale Devices" (with Y. Naveh). *Superlatt. and Microstruct.* **27**, No. 2/3, pp. 111-123 (2000).
204. "Superconductor Electronic Devices for Petaflops Computing" (with M. Dorojevets *et al.*). *FED Journal* **10**, No. 3, pp. 3-14 (2000) – in Japanese.
205. "COOL-1: The Next Step in RSFQ Computer Design" (with M. Dorojevets *et al.*). *Physica B* **280**, pp. 495-496 (2000).
206. "Modeling of 10-nm-scale Ballistic MOSFETs" (with Y. Naveh). *IEEE Electron. Dev. Lett.* **21**, No. 5, pp. 242-244 (2000).
207. "Shot Noise Suppression at 1D Hopping" (with A. N. Korotkov). *Phys. Rev. B* **61**, No. 23, pp. 15975-15987 (2000).
208. "Universal Distribution of Transparencies in Highly Conductive Nb/AlO_x/Nb junctions" (with Y. Naveh *et al.*). *Phys. Rev. Lett.* **85**, No. 25, pp. 5404-07 (2000).
209. "Composite Flux/Charge Qubit". In: *Proceeding of PIERS 2000*, The Electromagnetics Academy, Cambridge, MA, p. 891 (2000).
210. "Cooling by Resonant Fowler-Nordheim Emission through A-few-nm-thick Films" (with A. N. Korotkov). In: *Heat Transfer and Transport Phenomena in Microscale*, ed. by G. P. Celata, Begell House, New York, pp. 331-334 (2000).
211. "Shot Noise Suppression at 2D Hopping" (with V. Sverdlov and A. Korotkov). *Phys. Rev. B* **63**, No. 8, pp. R081302 1-4 (2000).
212. "Physics of High- j_c Josephson Junctions and Prospects of their RSFQ VLSI Applications" (with Y. Naveh and D. Averin). *IEEE Trans. on Appl. Supercond.* **11**, No. 1, pp. 1056-1060 (2001).
213. "Single-electron Soliton Avalanches in Tunnel Junction Arrays" (with V. Sverdlov, D. Kaplan, and A. Korotkov), *Phys. Rev. B* **64**, No. 4, pp. R041302 1-4 (2001).
214. (a) "Single-Electron Latching Switches as Nanoscale Synapses" (with S. Fölling and Ö. Türel). In: *Proc. of the Int. Joint Conference on Neural Networks* (Int. Neural Network Society, Mount Royal, NY), pp. 216-221 (2001);

- (b) “Self-Evolving Neuromorphic Networks with Single-Electron Switching Latches as Synaptic Nodes” (with S. Fölling and Ö. Türel). In: *Proc. of the 15th Eur. Conf. on Circuit Theory and Design*, vol. 1 (Helsinki Univ. of Technology, Espoo, Finland), pp. I-177-180 (2001).
215. “Nanoscale SOI Ballistic MOSFETs: An Impending Power Crisis” (with V. Sverdlov and Y. Naveh). In: *Proc. of 2001 IEEE Int. SOI Conf.* (IEEE, Piscataway, NJ), pp. 151-152 (2001).
216. (a) “Temperature Scaling of Nanoscale Silicon MOSFETs” (with V. Sverdlov and Y. Naveh). *J. de Phys. IV* **12**, No. Pr3, pp. 19-22 (2002);
- (b) “Temperature Scaling of CMOS Circuit Power Consumption” (with V. Sverdlov and Y. Naveh). *Physica E* **18**, No. 1-2, pp. 151-152 (2002).
217. “Sub-electron Transport in Single-electron-tunneling Arrays” (with D. Kaplan and V. Sverdlov). *Phys. Rev. B* **65**, No. 19, art. 193309 (2002).
218. “Quantum Fluctuations in Josephson Junction Comparators” (with T. J. Walls and T. V. Filippov). *Phys. Rev. Lett.* **89**, No. 21, art. 217004 (2002).
219. “Effective Boundary Conditions for Carriers in Ultrathin SOI Channels” (with V. Sverdlov and X. Oriols). *IEEE Trans. on Nanotechnology* **2**, No. 1, 59-63 (2003).
220. “CrossNets: Possible Neuromorphic Networks Based on Nanoscale Components” (with Ö. Türel). *Int. J. of Circuit Theory and Applications* **31**, No. 1, pp. 37-53 (2003).
221. “Tunneling Properties of Barriers in Nb/Al/AlO_x/Nb junctions” (with S. K. Tolpygo *et al.*). *IEEE Trans. on Appl. Supercond.* **13**, No. 2, pp. 99-102 (2003).
222. (a) “MOSFETs Below 10 nm: Quantum Theory” (with T. J. Walls and V. A. Sverdlov). *Physica E* **19**, No. 1-2, pp. 23-27 (2003);
- (b) “Nanoscale Silicon MOSFETs: A Theoretical Study” (with V. A. Sverdlov and T. J. Walls). *IEEE Trans. on Electron Devices* **50**, No. 9, pp. 1926-1933 (2003).
223. (a) “CrossNets: Neuromorphic Networks for Nanoelectronic Implementation” (with Ö. Türel). *Lect. Notes on Comp. Sci.* **2714**, pp. 753-760 (2003).
- (b) “Possible Neuromorphic Implementation of Neuromorphic Networks” (with Ö. Türel and I. Muckra). In: *Proc. of the Int. Joint Conf. on Neural Networks* (Portland, OR), pp. 365-370 (2003).
224. “Coulomb Gap, Coulomb Blockade, and Dynamic Activation Energy in Frustrated Single-Electron Arrays” (with D. Kaplan and V. Sverdlov). *Phys. Rev. B* **68**, No. 4, pp. 045321 1-6 (2003).
225. “Quantum Mechanical Modeling of Advanced Sub-10-nm MOSFETs” (with T. J. Walls and V. A. Sverdlov). In: *Proc. of IEEE NANO*, pp. 338 1-4 (2003).
226. “Shot Noise in Frustrated Single-Electron Arrays” (with D. Kaplan and V. Sverdlov). *Appl. Phys. Lett.* **83**, No. 13, pp. 2662-2664 (2003).
227. “Shot Noise at 2D Hopping” (with Y. A. Kinkhabwala, V. A. Sverdlov, and A. N. Korotkov). *J. Phys. Soc. Jpn.* **72**, Suppl. A, pp. 149-150 (2003).
228. “Nanoelectronic Neuromorphic Networks (CrossNets): New Results” (with Ö. Türel, J. H. Lee, and X. Ma). In: *Proc. of Int. Joint Conf. on Neural Networks* (Budapest, Hungary), pp. 389-394 (2004);
229. “Nanoscale SOI MOSFETs: A Comparison of Two Options” (with T. J. Walls and V. A. Sverdlov), *Solid State Electronics* **48**, No. 6, pp. 857-865 (2004).
230. “Aluminum Oxide Layers as Possible Components for Layered Tunnel Barriers” (with E. Cimpoiasu *et al.*). *J. Appl. Phys.* **96**, No. 2, pp. 1088-1093 (2004).

231. “Architectures for Nanoelectronic Implementation of Artificial Neural Networks: New Results” (with Ö. Türel, J. H. Lee, and X. Ma). *Neurocomputing* **64**, No. 1, pp. 271-283 (2005).
232. “Prospects for Terabit-scale Nanoelectronic Memories” (with D. B. Strukov). *Nanotechnology* **16**, No. 1, pp. 137-148 (2005).
233. “CMOL FPGA: A Reconfigurable Architecture for Hybrid Digital Circuits with Two-terminal Nanodevices” (with D. B. Strukov). *Nanotechnology* **16**, No. 6, pp. 888-900 (2005).
234. “CrossNets as Pattern Classifiers (with J. H. Lee). *Lecture Notes in Computer Science* **3512**, pp. 446-454 (2005).
235. “Nanoscale SOI MOSFETs: In Search for the Best Geometry” (with J. Li and T. J. Walls). In: *SOI Technology and Devices XII*, ed. by G. K. Celler, ECS, Pennington, NJ, pp. 11-20 (2005).
236. “A Numerical Study of Transport and Shot Noise at 2D Hopping” (with Y. A. Kinkhabwala, V. A. Sverdlov, and A. N. Korotkov), *J. Phys.: Condens. Mat.* **18**, No. 6, pp. 1999-2012 (2006).
237. “A Numerical Study of Coulomb Interaction Effects on 2D Hopping Transport” (with Y. A. Kinkhabwala and V. A. Sverdlov), *J. Phys.: Condens. Mat.* **18**, No. 6, pp. 2013-2027 (2006).
238. “Sub-electron Charge Relaxation via 2D Hopping Conductors” (with Y. Kinkhabwala), *J. Phys.: Condens. Mat.* **18**, No. 20, pp. 4895-4905 (2006).
239. “A Reconfigurable Architecture for Hybrid CMOS/Nanodevice Circuits” (with D. B. Strukov). In: *Proc. FPGA '06*, pp. 131-140 (2006).
240. “Global Reinforcement Learning in Neural Networks with Stochastic Synapses” (with X. Ma). In: *Proc. IJCNN'06*, pp. 47-53 (2006).
241. “In Situ Training of CMOL CrossNets” (with J. H. Lee). In: *Proc. IJCNN'06*, pp. 5026-5034 (2006).
242. “Fabrication and characterization of novel crosspoint structures for molecular electronic integrated circuits” (with W. Chen *et al.*). *J. Vac. Sci. Technol. B* **24**, No. 6, pp. 3217-3220 (2006).
243. “CMOL FPGA Circuits” (with D. B. Strukov). In: *Proc. of WorldComp '06/CDES'06*, pp. 213-219 (2006).
244. “Architectures for Defect-Tolerant Nanoelectronic Crossbar Memories” (with D. B. Strukov). *J. of Nanoscience and Nanotechnology* **7**, No. 1, pp. 151-167 (2007).
245. “Global Reinforcement Learning in Stochastic Neural Networks” (with X. Ma). *IEEE Trans. on Neural Networks* **18**, No. 2, pp. 573-577 (2007).
246. “High-Quality Aluminum Oxide Tunnel Barriers for Scalable, Floating-Gate Random-Access Memories (FGRAM)” (with X. Liu *et al.*). In *Proc. ICMTD'07*, pp. 235-237 (2007).
247. “Defect-tolerant Nanoelectronic Pattern Classifiers” (with J. H. Lee). *Int. J. of Circuit Theory and Applications* **35**, No. 3, pp. 239-264 (2007).
248. “Reconfigurable Hybrid CMOS/Nanodevice Circuits for Image Processing” (with D. B. Strukov). *IEEE Trans. on Nanotechnology* **6**, No. 6, pp. 696-710 (2007).
249. (a) “CMOL Technology Development Roadmap” (with D. B. Strukov). In: *Proc. of the 4th Workshop on Non-Silicon Computing*, pp. 73-80 (2007).
- (b) “Prospects for the Development of Digital CMOL Circuits” (with D. B. Strukov). In: *Proc. of IEEE/ACM Symp. on Nanoscale Architectures (NanoArch'07)*, pp. 109-116 (2007).
250. “Josephson Junction Comparator as a Quantum-Limited Detector for Flux Qubit Readout” (with T. J. Walls and D. V. Averin). *IEEE Trans. on Appl. Supercond.* **17**, pp. 136-141 (2007).
251. “Negative Differential Resistance at Sequential Single-Electron Tunneling through Atoms and Molecules” (with N. Simonian and J. Li). *Nanotechnology* **18**, art.. 424006, pp. 1-11 (2007).

-
252. “Hybrid Semiconductor/Nanoelectronic Circuits: Freeing Advanced Lithography from the Alignment Accuracy Burden”. *J. Vac. Sci. Technol. B* **25**, No. 6, pp. 2531-2536 (2007).
253. “Aluminum-Oxide Tunnel Barriers with High Field Endurance” (with Z. Tan *et al.*). *Appl. Phys. Lett.* **93**, No. 24, art. 242109 (2008).
254. “2D Quantum Effects in “Ultimate” Nanoscale MOSFETs” (with T. J. Walls). *J. Appl. Phys.* **104**, No. 12, art. 124307 (2008).
255. “Experimental Study of Resistive Bistability in Metal Oxide Junctions” (with Z. Tan *et al.*). *Appl. Phys. A* **103**, No. 2, pp. 293-300 (2011).
256. “All-NDR Crossbar Logic” (with D. B. Strukov), In: *Proc. of IEEE NANO*, pp. 865-868 (2011).
257. “Design and Simulation of Molecular Nonvolatile Single-electron Resistive Switches” (with N. Simonian and A. Mayr). *J. Appl. Phys.* **113**, No. 1, art. 044504 (2013).
258. “Self-Organization in Autonomous, Recurrent, Firing-Rate CrossNets with Quasi-Hebbian Plasticity” (with T. J. Walls). *IEEE Trans. on Neural Networks and Learning Systems* **25**, No. 4, pp. 819-824 (2014).
259. (a) “Training and Operation of an Integrated Neuromorphic Network Based on Metal-Oxide Memristors” (with M. Prezioso *et al.*). *Nature* **521**, No. 7550, pp. 61-64 (2015).
- (b) “Modeling and Implementation of Firing-Rate Neuromorphic-Network Classifiers with Bilayer Pt/Al₂O₃/TiO_{2-x}/Pt Memristors” (with M. Prezioso *et al.*). *IEDM Techn. Dig.*, pp. 455-458 (2015).
260. “Redesigning Commercial Floating-Gate Memory for Analog Computing Applications” (with F. Merrikh Bayat *et al.*). In: *Proc. of ISCAS*, pp. 1921-1924 (2015).
261. “Self-Adaptive Spike-Time-Dependent Plasticity of Metal-Oxide Memristors” (with M. Prezioso *et al.*). *Sci. Rep.* **6**, art. 21331 (2016).
262. “Model-Based High-Precision Tuning of NOR Flash Memory Cells for Analog Computing Applications” (with F. Merrikh Bayat *et al.*). In: *Proc. of 74th DRC* (Newark, DE, June 2016)
263. (a) “Fast, Energy-Efficient, Robust, and Reproducible Mixed-Signal Neuromorphic Classifier Based on Embedded NOR Flash Memory Technology” (with X. Guo *et al.*). In: *IEDM Techn. Dig.*, pp. 6.5.1-6.5.4 (2017).
- (b) “High-Performance Analog Neurocomputing with Nanoscale Floating-Gate Memory Cell Arrays” (with F. Merrikh Bayat *et al.*). *IEEE Trans. on Neural Networks and Learning Systems* **29**, pp. 4782-4790 (2018).
264. “Capacity, Fidelity, and Noise Tolerance of Associative Spatial-Temporal Memories Based on Memristive Neuromorphic Networks” (with D. Gavrilov and D. Strukov). *Front. Neurosci.* **12**, art 195 (2018).
265. “Mixed-Signal Neuromorphic Inference Accelerators: Recent Results and Future Prospects” (with M. Bavandpour *et al.*). *IEDM Techn. Dig.*, pp. 20.4.1-20.4.4 (2018).
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