



MICHAEL S. SHUR, DR. SC.
PATRICIA W. AND C. SHELDON ROBERTS PROFESSOR
ECSE and Physics
ACTING DIRECTOR, CENTER FOR INTEGRATED ELECTRONICS
DIRECTOR, BROADBAND CENTER
CO-DIRECTOR, NSF I/UCRC "CONNECTION ONE"

Updated 04/05/09

Personal: US citizen Married Two children

Degrees: MSEE (with honors), St. Petersburg Electrotechnical Institute
Ph.D., Physics, A. F. Ioffe Institute of Physics and Technology,
Dr. Phys. Math. Sc. A. F. Ioffe Institute of Physics and Technology, 1992
Honorary Doctorate, St. Petersburg Technical University, 1994

Employment

Rensselaer Polytechnic Institute, Troy, NY	Patricia W. and C. Sheldon Roberts'48 Professor, 1996-present Professor, Electrical, Computer, and Systems Eng. 1996-present Professor, Physics, Applied Physics and Astronomy 1998-present Acting Director Center for Integrated Electronics 2006-present Co-Director, "Connection One" NSF I/UCRC 2004-present Associate Director Center for Integrated Electronics 2002- present Director, Broadband Center 2002 – present Acting Director Center for Integrated Electronics 2000-2002
Technical University of Munich, Germany	Senior Humboldt Research Scholar (visiting) 2003- present
University of Virginia, Charlottesville, VA	Visiting Professor 1996- 2002 John M. Money Professor 1989 - 1996 Director, Applied Electrophysics Labs (elected) 1996 Member, Center Adv. Studies 1989 - 1991
Univ. of Minnesota, Minneapolis, MN	Adjunct Professor 1989 - 1995 Professor, Associate Professor 1979 - 1992
Oakland University, Rochester, MI	Assistant Professor 1978 - 1979
IBM, Yorktown Heights, NY	Visiting Faculty 1979
Cornell University, Ithaca, NY	Visiting Research Associate 1976 - 1980
Wayne State University, Detroit, MI	Research Associate, Assistant Professor 1976 - 1978
A. F. Ioffe, St. Petersburg, Russia	Junior Scientific Worker 1965-1976

Publications, Citations, books, and patents 288 papers cited 10 times or more, 21 papers cited 100 times or more (the highest number is 305); "h-index" is 53. Authored, co-authored, or edited 38 books, 29 book chapters, and over 50 patents or patent applications on solid-state devices.

Consulting: Nanodynamics (2007), Boeing (2004), Northrop-Grumman (1998-2000), Motorola (1994 - 1997), APA Optics (1994 - 1998), DpiX and Xerox PARC (1986 -1997), AT&T Bell Labs (1990 - 1992), Allied Signal (1991), Honeywell (1978 - 1988), Control Data (1990), Sperry Univac (1977-78,1992), General Electric (1988), ARO (1988- 1993), Energy Conversion Devices (1976 - 1986), Ford Microelectronics (1984 - 1985), International Holographics (1978), 3M Canada (1982 - 1984), WPAFB (1991 - 1996) TDI (1998-2000), Technical Expert (Patent firms, 1998 – 2000, Battelle (1996-1999), Cray Research (1983), Sperry (1977 - 1978)

Sponsored Research: More than 150 grants and contracts (over the years) from NSF, ARO, ONR, AFOSR, ARPA, NATO, NRL, SET, Crystal IS, Honeywell, McDonnell Douglas, Ford Microelectronics, Control Data Corporation, M/A COM, Bell Core, IBM, Microelectronics and Information Sciences Center, Supercomputer Institute, VCIT, GE, Motorola, NASA, and other agencies.

Co-founder or founder: Sensor Electronic Technology, Inc., Biomedical and Information Technology, Inc., Advanced Device Technology, Inc.

Professional and Honorary Societies: MRS (Fellow), IET (Fellow), IEEE (Fellow), American Physical Society (Fellow and Life Member); Electrochemical Society (Fellow), World Innovation Foundation (Fellow), AAAS (Fellow), Electron

Device Society; Microwave Theory and Technique Society (Life Member), Eta Kappa Nu; Tau Beta Pi; Sigma Xi (Life Member), SPIE (Life member), ASEE, Electromagnetic Academy (Fellow), US Commission D, International Union of Radio Science (elected), USNC Member-at-Large (elected 2000-2003), International Network for Engineering Education and Research (iNEER), Humboldt Society (Life Member), EuMA Associate member, Humboldt Society of America (life member)

Editor: Editorial Board Member of The Open Condensed Matter Physics Journal (ISSN: 1874-186X) (2008-present)
 Member, Advisory Board, Journal of Nanoelectronics and Optoelectronics, published by American Scientific Publishers (2007-present)
 Regional Editor (for North America) of *physica status solidi* (2005-present), Member, Editorial Board, *physica status solidi* (a) and *physica status solidi* (c) (2005- present)
 Editor-in-Chief, International Journal of High-Speed Electronics and Systems (1995-present)
 Co-Editor-in-Chief, Member, Editorial Board, International Journal of High Speed Electronics and System (1990-1995)
 Editor, Book series, Special Topics in Circuits and Systems (1995-present)
 Associate Editor, IEEE Transactions on Electron Devices (1990-1993)
 Member, Honorary Editorial Board, Solid State Electronics (1996-present)
 Member, International Advisory Committee, Journal of Semiconductor Technology and Science (1999-present)

Special Issues and Proceedings:

M. S Shur, Paul Maki, and James Kolodzey, Editors, Advanced Semiconductor Devices, Proceedings of the 2006 Lester Eastman Conference, Cornell, Ithaca, NY, USA 26 August 2006, Selected Topics in Electronics and Systems - Vol. 45, World Scientific, ISBN 978-981-270-858-8 (2007)
 Mehdi Anwar, Anthony J. DeMaria, Michael S. Shur, Editors, Proceedings of SPIE -- Volume 6772: Terahertz Physics, Devices, and Systems II (2007)
 Yue Kuo, Dieter G. Ast, Michael Shur, Proceedings of 2007 International Conference on semiconductor Technology for Ultra Large Scale Integrated Circuits and Thin Film Transistors (ULSIC vs. TFT), ECS Transactions, Volume 8, No. 1 (2007), ISSN 1938-6737 (online), ISSN 1938-5862 (print)
 Co-Editor (with A. Korokin et al) The Proceedings of the 2nd International Symposium on Nano- and Giga-Challenges in Microelectronics, Microelectronics Engineering, Vol. 81/4, August (2005)
 Co-Editor (with T. Wilson and D. Urban) Mat. Res. Soc. Proc, MRS, Warrenton, PA, (2003),
 Guest Editor (with Y. S. Park and W. Tang), International Journal of High Speed Electronics and Systems, (2003)
 Guest Editor (with V. Lumelsky and S. Wagner), Special Issue on "Sensitive Skin," International Journal of High Speed Electronics and Systems (2001)
 Guest Editor (with Y. S. Park et al), International Journal of High Speed Electronics and Systems, (2000)
 Guest Editor, Special Issue on "Beyond Silicon. Advanced Device and Circuit Simulators, International Journal of High Speed Electronics and Systems, (2000)
 Guest Editor, Special Issue on "Compound Semiconductor Technology. The Age of Maturity", International Journal of High Speed Electronics and Systems, (2000)
 Co-Editor (with T. H. Myers, R. M. Feenstra, H. Amano) Mat. Res. Soc. Proc, vol. 595, MRS, Warrenton, PA, (2000)
 Guest co-Editor (with Simon Sze and Jimmy Xu), Special Issue on Future and Present Trends in Microelectronics, IEEE Transactions on Electron Devices, October, 1996
 Co-Editor (with Steve DenBaars, John Palmour, and Michael Spencer) Mat. Res. Soc. Proc, vol. 512, MRS, Warrenton, PA, (1998)
 Co-Editor, Proceedings of the International Symposium on Compound Semicond., Sep. (1996)
 Co-Editor, Proceedings of the 21st Army Electronics Research Conference, June (1996)
 Co-Editor (with T. Fjeldly), Proceedings of Symposium on Supercomputer Simulation of Semiconductor Devices, Comp. Phys. Comm., Special Issue, August 1991
 Co-Editor), Proceedings of Symposium on Supercomputer Simulation of Semiconductor Devices, Comp. Phys. Comm., Special Issue, August 1991

Honors:

Foreign Member of the Lithuanian Academy of Sciences (2009)
 MRS Fellow (2009)
 Paper of the Month designation for paper published in Electronics Letters in November of 2008
 The IEEE Sensors Council 2008 Technical Achievement Award (2008)
 Best Reliability Paper Award at the 26th International Conference on Microelectronics (MIEL 2008)
 Keynote Speaker, IRMMW-08
 Electromagnetic Academy Fellow (2007)
 IET Fellow (2007)
 IEEE Donald Fink Best Paper Award (2007)

IEEE Leon K. Kirchmayer Graduate Teaching Award (2007)
 Keynote Speaker, SPIE THz Conference, August (2006)
 Honorary Chair and Plenary Speaker, IEEE International Caracas Conference on Devices Circuits and Systems (2006)
 Fellow, AAAS (2005)
 Plenary Speaker, Joint Plenary Session ESSDERC-ESSCRC, Grenoble, France, September 14, 2005
 Plenary Speaker, IEEE Conferencia De Dispositivos Electronicos (2005 Spanish Conference on Electronic Devices), Tarragona, Spain (2005)
 Fellow, World Innovation Foundation (2004)
 Fellow, Electrochemical Society (2004)
 Distinguished Microwave Lecturer, IEEE MTT (2004-2006)
 Pioneer Award from Semiconductor Semi (2003)
 Distinguished Lecturer, IEEE, EDS (2003-present)
 RPI School of Engineering Research Award (2003)
 Plenary Speaker, European Microwave Week (2003)
 Humboldt Senior Research Prize (2002)
 WOFE-02 two Best Poster Awards (First Place for A. Žukauskas, R. Vaicekauskas, F. Ivanauskas, M. S. Shur and R. Gaska, Optimization of white all-semiconductor lamp for solid-state lighting applications, in Proceedings of WOFE-02, IJHSES and shared Third-Fourth Place for S. L. Rummyantsev, M. S. Shur, R. Gaska and M. E. Levinshtein, Low frequency noise in GaN/AlGaIn heterostructure field effect transistors, in Proceedings of WOFE-02, IJHSES)
 Highly Cited Researcher Commendation (from ISI International) 2000
 Plenary Speaker at ECSCRM2000
 1999 Materials Research Society Best Poster Award
 1999 van der Ziel Award from ISDRS-99
 Plenary speaker at DCIS-99, Palma de Majorca, November 1999
 Commendation for excellence in Technical Communications from Laser Focus World (joint with Asif Khan), June 1999
 Outstanding paper award from GOMAC'98
 A. F. Ioffe Prize for "New hydrodynamic phenomena in 2D electron fluid (joint with A. P. Dmitriev, M. I. Dyakonov, A. S. Furman, V. Yu. Kachorovskii, and G. G. Samsonidze), 1996
 Plenary Speaker at the International Symposium on Compound Semiconductors, Sep. (1996)
 Patricia W. and C. Sheldon Roberts Chair in Solid State Electronics, Rensselaer, Aug. (1996)
 Key Note Speaker, 21st Army Electronics Research Conference, June (1996)
 Fellow APS (1995)
 Distinguished Lecturer, University of California, San Diego, May (1995)
 Honorary Doctorate, St. Petersburg State Technical University (1994)
 John Marshall Money Chair Professorship, University of Virginia (1989)
 Fellow IEEE (1989)
 Member of Center for Advanced Studies, University of Virginia (1989-1991)
 Eta Kappa Nu, Tau Beta Pi, Sigma Xi
 Prizes for the best papers of A. F. Ioffe Institute: 1968-1973
 Gold Medal of the Russian Ministry of Education, 1959

Awards received by student advisees:

Martin Schubert, NNIN Winter School in India Invitation (2008)
 Kai Liu, Founders Award, Rensselaer Polytechnic Institute (2008)
 Martin Schubert, \$30K Lemelson MIT-RPI Prize for invention of polarized light LEDs (2008)
 Dmitry Veksler, One of the 10 finalists of the Best Student Paper Competition in the 5th IEEE International Conference on Sensors (for the paper entitled "GaN Heterodimensional Schottky Diode for THz Detection" (2006)
 Dmitry Veksler, Founders Award, Rensselaer Polytechnic Institute (2006)
 Shayla Sawyer, The Walter Lincoln Hawkins '32 conference, Best Research Paper Award (2005)
 William Stillman, IGERT Fellowship (2006)
 Dmitry Veksler, IGERT Fellowship (2005)
 Dmitry Veksler, Newport Prize, Rensselaer Polytechnic Institute (2004)
 Shayla Sawyer, Homeland Security Fellowship (2003)
 Y. Deng, Allen B. DuMont prize, Rensselaer Polytechnic Institute (2004)
 Y. Deng, Founders Award, Rensselaer Polytechnic Institute (2002)
 Y. Deng, Saxena Fellowship, Rensselaer Polytechnic Institute (2002)
 Peter Necludov, The Allen B. DuMont Prize'69) given to an EE major graduate student, "who made a substantial contribution to his/her field of study" (2002)
 Nezhil Pala, Founders Award, Rensselaer Polytechnic Institute (2000)
 Peter Necludov, Saxena Fellowship, Rensselaer Polytechnic Institute (2000)
 J. Deng, Founders Award, Rensselaer Polytechnic Institute (1999)

Peter Necludov, Founders Award, Rensselaer Polytechnic Institute (1999)
 Yves Ngu, Faculty for the Future Program Award (1999)
 Ling Wang, Founders Award, Rensselaer Polytechnic Institute (1998)
 Holly Slade, MRS Graduate Student Award Winner (1996)
 Holly Slade, Beckman Memorial Award Winner, ECS (1995)
 Edgar Martinez, Best Student Paper Award Winner, ISDRS-93 (1993)

Reviewer: NSF, ARO, ONR, SDIO, Solid State Electronics, J. Appl. Phys, Appl. Phys. Lett., IEEE Electron Device Letters, IEEE Transactions Electron Devices, IEEE Trans. MTT, Electronics Letters, IEEE Trans CAD, Phys. Rev., Phys. Rev. Lett., Rev. Radio Science, Microwave Technology Letters, National Research Council of Canada, National Research Council (US), "Micro" program (University of California), US CRDF

Professional Activities:

Organizing Committee Member, Thin Film Transistor Technologies IX, The Electrochemical Society's 214th Meeting Honolulu, Hawaii, Oct. 12-17, 2008
 Member of Advisory Committee of 16th International Symposium "Nanostructures: Physics and Technology", Vladivostok (2008)
 Liaison, Committee Member, International Symposium on Flexible Electronics, Tarragona, April (2008)
 General Chair, Lester Eastman Conference on High Speed Devices (2008)
 Committee Member, ISDRS-07, Washington DC
 Member of Advisory Committee of 15th International Symposium "Nanostructures: Physics and Technology", Novosibirsk (2007)
 Co-Chair, Terahertz Physics, Devices, and Systems II, Photonics East (2007)
 Co-Chair, International Conference on Semiconductor Technology for Ultra Large Integrated Circuits and Thin Film Transistors, July 29 - August 3, 2007 <http://www.engconfintl.org/7av.html>
 Chair, Workshop on Frontiers in Electronics, Playa del Carmen, Mexico, December (2007)
 Co-Chair, The 3-d Asia-Pacific Workshop on Wide band gap Semiconductors, <http://www.apws2007.org/index.htm> (2007)
 Committee member, International Display Manufacturing Conference & Exhibition (IDMC'07) Taipei International Convention Center, Taiwan, 3 to 6 July 2007.
 Program Chair Lester Eastman Conference on High Speed Devices (2006)
 International Advisory Committee Member, IEEE 2006 Sensor Conference
 Session Organizer, IEEE 2006 Sensor Conference
 Engineering Conferences International, Affiliate Member
 Co-Chair, Photonics East 2006, Terahertz Devices, Systems and Applications
 Member, Technical Program Committee, 8th International Conference on Solid-State and Integrated-Circuit Technology, October 23-26, 2006, Shanghai, China
 Program Chair, Lester Eastman Conference on High Speed Devices (2006)
 Past Chair, IEEE Prize Papers/Scholarships Award Committee, 2006
 Chair, IEEE Prize Papers/Scholarships Award Committee, 2004-2005
 Program Committee Member, FaN 2005 - SPIE Conference on Noise in Devices and Circuits
 Honorary Chair, IEEE International Caracas Conference on Devices Circuits and Systems (2006)
 Member of the International Advisory Committee, International Symposium on Blue Laser and Light Emitting Diodes (ISBLED-2006), Montpellier-France, May 14-19 2006
 Member, International Advisory Committee, International Workshop on Physics of Semiconductor Devices (2005)
 Program Committee Member, International Workshop on Nitride Semiconductors (IWN), Kyoto, Japan, Oct 22-27, 2006
 Program Committee Member, 2005 MicroMEMS Symposium, Device and Process Technologies for Microelectronics, MEMS, and Photonics Conference (AU-03) 2005
 Program Committee Member, International Display Manufacturing Conference & Exhibition) 2005
 Program Committee Member, SPIE Conference 5470 Noise in Electronic Devices and Circuits 2004
 Committee member of ICSICT 2004, Beijing (2004)
 Co-organizer, MRS Symposium, Devices on Flexible Substrates, Fall (2005)
 Chair, Workshop on Frontiers in Electronics (WOFE), Aruba, (2004)
 Local Chair, Lester Eastman Conference on High Speed Devices (2004)
 Member of the International Program Committee for ICNS-6
 Technical Program Committee Member, 2004 International Conference on Solid-State and Integrated-Circuit Technology (ICSICT) Beijing, China, Oct. 18-21, 2004 (website: www.ime.pku.edu.cn/icsict)
 Co-Organizer, Thin Film Transistor Technologies VII. ECS 206th Meeting Honolulu, Hawaii 10/3-8, 2004
 Member of International Advisory Committee, ISPSA2004, Gyeongju, Korea, March 14 ~ 16, 2004
 Vice-President for publications, Sensor Council, 2003 (elected)
 Member, Organizing Committee, ISDRS 2003

Member, International Advisory Committee, Twelfth International Workshop on the Physics of Semiconductor Devices (IWPSD-2003) in Madras, Dec 16-20, 2003.

Technical Committee Member, FaN 2003 - SPIE Conference on Noise in Devices and Circuits

Committee Member, Lester Eastman Conference on High Speed Devices (2002)

Co-organizer, MRS Symposium on Electronics on Unconventional Substrates, December 2002

Technical Program Committee co-Chair, IEEE Sensor-02, Orlando, Florida, June 2-14, 2002

Co-organizer, THIN FILM TRANSISTOR TECHNOLOGIES VI, ECS 202nd Meeting, Salt Lake City, Utah, October 20-25, 2002

Co-organizer, MRS Symposium, Devices on Flexible Substrates, Fall (2002)

Member, International Advisory Committee, 11th Seoul International Symposium on the Physics of Semiconductors and Applications (ISPSA-2002), Cheju Island, Korea, August 20-23, 2002.

Member, Program Committee, International Workshop on Nitride Semiconductors, Aachen, Germany, 2-25 July 2002

Member and past Chair, Organizing Committee, ISDRD-2001

Member, Organizing Committee, ISSSE'01

Member, Program Committee, Solid State Lighting Conference, Denver (2001)

Chair, Workshop on Frontiers in Electronics (WOFE), Virgin Islands, (2002)

Member, Organizing Committee, ISDRS-01, Charlottesville, VA

Member, Program Committee, International conference on Nitride Semiconductors, Denver (2001)

Co-organizer, MRS Symposium on Wide Band Gap Semiconductors for High power, high temperature applications, 2000

Member, Organizing Committee, 9th International Symposium on Nanostructures, St Petersburg, 18-22 June 2001

Member, IEEE Prize Papers/Scholarships Award Committee, 1999-2003

Co-organizer, MRS Symposium on Wide Band Gap Semiconductors for high power, high temperature applications, 1999

Member, Scientific Program Committee, ESSDERC'99

Co-Chair, Workshop on Frontiers in Electronics, (1999)

Past Senior Chair and Member, Organizing Committee, ISDRS-99, Charlottesville, VA

Member, Scientific Program Committee, ESSDERC'98

Co-organizer, MRS Symposium on Wide Band Gap Semiconductors for High power, high temperature applications, 1998

Member, 6th IEEE Terahertz Electronics Conference, Technical Program Committee (1998)

Co-Chair, Workshop on Frontiers in Electronics, (1999)

Program Chair, Workshop on Frontiers in Electronics, Canary Islands, January (1997)

Member, Scientific Program Committee, ESSDERC'97, Germany

Member, Program Committee, Optoelectronic Integrated Circuits, SPIE West, Feb. 1997

US Coordinator, Program Committee Member and Co-Secretary, 23d International Symposium on Compound Semiconductors, Russia, 1996

Member, Scientific Program Committee, ESSDERC'96, Bologna, Italy, 1996

Session Convener, General Assembly of URSI, Lille, France, 1996

Committee Member and Past Junior Chair, International Semiconductor Device Research Symp., 1995

Member, Scientific Program Committee, ESSDERC'95, Hague

Member, Program Committee, International Caracas Confer. on Electronics and Photonics, 1995

Member, Program Committee, MRS, 1995

Organizer, Special Session, APS March Meeting, 1995

Co-Secretary, 22d Intern. Symposium on Compound Semiconductors, Cheju Island, Korea, 1995

Technical Program co-Chairman, ISSSE, San Francisco, 1995

Chairman, Vice Chairman, Secretary US Commission D, URSI (1987 - 1996)

USNC, URSI, Member (ex-officio) 1994 - 1996. URSI Correspondent, 1994 - 1996

Member, Org. Committee of Topical Workshop on Heterostr. Microelectronics, Japan, Aug. 1994

Member, IEEE Prize Papers/Scholarships Award Committee (1992-1994)

Member, MRS Program Committee, Fall 1994

Committee Member, 3rd International Conference on VLSI and CAD, Taejon, Korea, Nov. 1993

Co-convener, Session on Device Modeling, URSI General Assembly, Kyoto, Japan, August 1993

Lecturer, Short Course on Compound Semiconductor Modeling, Leeds, Great Britain, April 1993

Conference Chairman, International Semicond. Device Research Symposium, 1993

Local Chairman, Optoelectronics Workshop, Charlottesville, Nov. 17-19, 1992

Local Chairman, Workshop on SiC Materials and Devices, Charlottesville, Sep. 9-11, 1992

Committee Member, 8th Vilnius Symp. on Ultrafast Phenomena. in Semicon., Vilnius, Sep, 1992

Session Chairman, ISSSE, Paris, Sep. 1992

Program Committee Chairman, International Semicond. Device Research Symposium, 1991

Member, Tech. Program Comm., APS-IEEE-URSI Conf., London, Ontario, June 1991

Session Chairman, APS-IEEE-URSI Conference, London, Ontario, June 1991

Co-organizer, Symposium " Supercomputer simulation of Semicond. Dev.", Minneapolis, MN, Nov. 1990

University of Minnesota Senator, 1989

Session Chair and Program Comm. Member, Intern. Symposium on Circuits and Systems, Nuremberg, 1989
 Session Organizer, 1988 IEEE ISCS, Helsinki (1988)
 Lecturer, Short Course on Compound Semiconductor Devices, Columbia University, 1988
 Member, IEDM Program Committee, Los Angeles and Washington (1986 and 1987)
 Session Chairman, IEDM, Los Angeles and Washington, 1986 and 1987
 Session Chairman, SSDM Tokyo, Japan, 1986

Books authored or co-authored

10. Gang Bu, Daumantas Ciplys, and Michael Shur "Surface Acoustic Waves and Acousto-Optical Effects in Nitrides", VDM Verlag Dr. Müller (December 12, 2008), ISBN 978-3-639-09686-6
9. A. Žukauskas, M. S. Shur, and R. Gaska, Introduction to Solid State Lighting, John Wiley and Sons, 2002
8. T. Fjeldly, T. Ytterdal, and M. S. Shur, *Introduction to Device Modeling and Circuit Simulation*, Wiley and Sons, 1998
7. M. S. Shur, *Introduction to Electronic Devices*, John Wiley, New York, 1996
6. K. Lee, M. S. Shur, T. Fjeldly, T. Ytterdal, *Semiconductor Device Modeling for VLSI*, Prentice, 1993
5. M. S. Shur, *Physics of Semiconductor Devices*, Prentice Hall, New Jersey, 1990 (translated into Russian and Korean, Publishing House "MIR", Moscow, 1993), also published in India in 1996
4. M. S. Shur, *GaAs Devices and Circuits*, Plenum Publishing Corporation, 1987 (translated into Russian, Publishing House "MIR", Moscow, 1991)
3. M. E. Levinshtein, Yu. K. Pozhela, M. S. Shur, *Gunn Effect*, Sov. Radio, Moscow, 1975
2. M. S. Shur, *Gunn Effect*, Energia, St. Petersburg, 1971.
1. G. A. Smolenskii, V. A. Bokov, B. A. Isupov, N. N. Krainik, R. E. Pasyukov, M. S. Shur, *Ferroelectrics and Antiferroelectrics*, Nauka, St. Petersburg, 1971.

Books edited

34. Mehdi Anwar, Anthony J. DeMaria, Michael S. Shur, Editors, Proceedings of SPIE -- Volume 6772: Terahertz Physics, Devices, and Systems II (2007)
33. Dwight L Woolard, James O Jensen, R Jennifer Hwu, and Michael S Shur, in Selected Topics in Electronics and Systems Vol. 46, Terahertz science and technology for military and security applications (2007), also in International Journal of High Speed Electronics and Systems, Vol. 17, No 2 (2007)
32. M. S Shur, Paul Maki, and James Kolodzey, Editors, Advanced Semiconductor Devices, Proceedings of the 2006 Lester Eastman Conference, Cornell, Ithaca, NY, USA 26 August 2006, Selected Topics in Electronics and Systems - Vol. 45, World Scientific, ISBN 978-981-270-858-8 (2007)
31. M. S. Shur, S. L. Romyantsev and M. E. Levinshtein, Editors, SiC Materials and Devices – vol. 2, World Sci. (2007) ISBN 981-270-383-5
30. H. Iwai, Y. Nishi, M. S. Shur, and H. Wong, Editors, Frontiers in Electronics, Proceedings of WOFE-04, World Scientific, Selected Topics in Electronics and Systems, Vol. 41 (2006), ISBN 981-256-884-0
29. M. S. Shur, S. L. Romyantsev and M. E. Levinshtein, Editors, SiC Materials and Devices – vol. 1, World Sci. (2006) ISBN 981-256-835-2
28. A. Korkin, A. Burian, J. Labanowski, S. Luryi, N. Perov, M. Shur, M. Szymonski, Guest Editors, The Proceedings of the 2nd International Symposium on Nano- and Giga-Challenges in Microelectronics, Microelectronics Engineering, Vol. 81/4, August (2005)
27. M.S. Shur, P. Wilson, and M. Stutzmann, *Editors, Giant-Area Electronics on Nonconventional Substrates*, (Mater. Res. Soc. Symp. Proc. **870E**, Warrendale, PA, 2005), <http://www.mrs.org/publications/epubs/proceedings/spring2005/h/>
26. M. S. Shur and A. Žukauskas. Editors, *UV Solid-State Light Emitters and Detectors*. Proc. NATO ARW, Series II, Vol. 144, ed. by, Kluwer, Dordrecht, 2004 ISBN 1-4020-2034-1 (ISBN 1-4020-2103-8 (e-book))
25. M. S. Shur and R. Davis, GaN-based Materials and Devices: Growth, Fabrication, Characterization and Performance, World Scientific, ISBN 981-238-844-3 (2004)
24. D. Woolard, W. Loerop, and M. S. Shur, and, Editors, Terahertz Sensing Technology, Volume II. Emerging Scientific Applications and Novel Device Concepts, World Scientific (2003) ISBN 981-238-611-4
- 23 D. Woolard, W. Loerop, and M. S. Shur, and, Editors, Terahertz Sensing Technology, Volume I. Electronic Devices & Advanced Technology, World Scientific (2003) ISBN 981-238-334-4
22. Y. S. Park, M. S. Shur, and W. Tang, Editors, Frontiers in Electronics: Future Chips Proceedings of the 2002 Workshop on Frontiers in Electronics (WOFE-02) St. Croix, Virgin Islands, World Scientific Pub Co; (January 15, 2003), ISBN: 9812382224
21. M. S. Shur, T. Wilson Nguyen, Dick Urban, Electronics on Unconventional Substrates – Electrotexiles and Giant Area Circuits, MRS Proceedings, Vol. 736 (2003)
20. T. A. Fjeldly and Michael S. Shur, Editors, LAB-on-the WEB, Microelectronics experiments on the Internet, John Wiley and Sons, ISBN: 0-471-41375-5 (2003)

19. F. Ren, S. J. Pearton, J. C. Zolper, F. L. Schuermeyer, M. Shur, V. Swaminathan, D. N. Buckley, S. N. G. Chu, C. R. Abernathy, and R. E. Sah, Compound Semiconductor Power Transistors and State-of-the-Art Program on Compound Semiconductors XXIX, PV 98-12, Boston, Massachusetts, Fall 1998, hardbound, ISBN 1-56677-222-2
18. G. Wetzel, M. S. Shur, U. K. Mishra, B. Gil, and K. Kishino, GaN and Related Alloys – 2000, Materials Research Society Symposium Proceedings, Vol. 639, G7.3, Editors (2001)
17. E. Borovitskaya and M. S. Shur, Introduction, in E. Borovitskaya and M. S. Shur, Editors, Quantum Dots, World Scientific, Ltd., Singapore, 2002; also to be published as Special Issue of IJHSES
16. M. E. Levinshstein, S. L. Rumyantsev, and M. S. Shur, Editors, “Properties of Advanced Semiconductor Materials: GaN, AlN, InN, BN, and SiGe“, John Wiley and Sons, ISBN 0-471-35827-4, New York (2001)
15. T. H. Myers, R. M. Feenstra, M. S. Shur, H. Amano, Editors, GaN and Related Alloys – 1999, Mat. Res. Soc. Proc, vol. 595, MRS, Warrenton, PA, (2000)
14. V. Lumelsky, M. S. Shur, and S. Wagner, Editors, Sensitive Skin, World Scientific, ISBN 981-02-4369-3, 2000.
13. M. S. Shur and T. A. Fjeldly, Editors, “Silicon and Beyond. Advanced Device Models and circuit simulators, World Scientific, 2000
12. Y. S. Park, S. Luryi, M. S. Shur, J. Xu, and A. Zaslavsky, Proceedings of Advanced Workshop on 'Frontiers in Electronics' (WOFE-99), World Scientific, 2000
11. M. E. Levinshstein, S. Rumyantsev, and M. S. Shur, Editors, *Handbook of Semiconductor Material Parameters*, vol. 2, World Scientific, 1999
10. Steve DenBaars, John Palmour, Michael Shur, and Michael Spencer. Wide band Gap Semiconductors for High Power, High Frequency, and High Temperature, Mat. Res. Soc. Proc, vol. 512, MRS, Warrenton, PA, (1998)
9. M. E. Levinshstein and M. S. Shur, Editors, Semiconductor Technology. Processing and Novel Fabrication Techniques, John Wiley and Sons, New York, ISBN 0-471-12792-2, 1997
8. Michael S. Shur and R. Suris, Editors, the Proceedings of 23d International Symposium on GaAs and Related Compounds, St. Petersburg, Russia, Sep. 22-28, 1996, Institute Phys. Conference Series, No. 155, English Book xxxvi, Bristol : Philadelphia : Institute of Physics Pub., ISBN: 0750304529
7. G. S. Pomrenke, F. Schuermeyer, M. S. Shur, and J. Xu, Editors, 1997 Advanced Workshop on Frontiers in Electronics (WOFE 97) Proceedings, ISBN 0-7803-4059-0, IEEE, Catalog Number 97TH8292, Puerto de la Cruz, Tenerife, Spain, pp. 105-108, January (1997)
5. Richard Chait, Catherine Kominos, Michael S Shur, Michael Stroschio, and James J Valdes, Editors, Twelfth Army Science Conference, Award Winning Papers, ISBN 981-02-3178-4, World Scientific, 1997
5. M. S. Shur, Editor, *Compound Semiconductor Technology. The Age of Maturity*, World Sci, 1996
4. M. E. Levinshstein, S. Rumyantsev, and M. S. Shur, Editors, Handbook of Semiconductor Material Parameters, vol. 1, World Scientific, 1996
3. M. E. Levinshstein and M. S. Shur, Editors, Best of Soviet Semiconductor Physics and Technology (1989-1990), World Scientific, 1995
2. M. E. Levinshstein and M. S. Shur, Editors, *Best of Soviet Semiconductor Physics and Technology (1987-1988)*, Key Papers in Physics, American Institute of Physics, 1991
1. M. Shur and T.A. Fjeldly, editors, *Supercomputer Simulation of Semiconductor Devices*, Proceedings of a Symposium at the Minnesota Supercomputer Institute, (Minneapolis, 1990), published by North Holland, Elsevier Science Publishers, Amsterdam (1991), ISSN 0010-4655

Book Chapters

29. S. K. O'Leary, B. E. Foutz, M. S. Shur, and L. F. Eastman, Electron transport within the III-V nitride semiconductors, GaN, AlN, and InN: A Monte Carlo Analysis, in Springer Handbook of Electronic and Optoelectronic Materials, pp. 805-828, Springer US (2006) ISBN 978-0-387-26059-4
28. D. J. Gundlach, M. S. Shur, and T. N. Jackson, Organic Semiconductor Electronic Devices, Systems, and Networks. Device Structures, Characterization, and Modeling, in “Printed Organic and Molecular Electronics,” Paul Brazis, Jr., Daniel Gamota and Jie Zhang, Co-editors, Kluwer Academic Publishers, March 2004
27. S. Karmalkar, M. S. Shur, and R. Gaska, GaN-based power high electron mobility transistors, in 'Wide Energy Bandgap Electronic Devices”, pp. 173-216, Fan Ren and John Zolper, Editors, World Scientific (2003), ISBN 981-238-246-1
26. A. Žukauskas, M. S. Shur, and R. Gaska, Solid State Lighting, in: *Future Trends in Microelectronics: The Nano Millennium*, New York: Wiley, 2002, S. Luryi, J. M. Xu, and A. Zaslavsky, eds.
25. M. E. Levinshstein, A. Balandin, S. L. Rumyantsev, M. S. Shur, Low-frequency noise in GaN-based Field Effect Transistors (Chapter), in Low Frequency Noise, edited by A. Balandin
24. E. Borovitskaya and M. S. Shur, Introduction, in E. Borovitskaya and M. S. Shur, Editors, Quantum Dots, World Scientific, Ltd., Singapore, 2002; also published as Special Issue of IJHSES
23. M. S. Shur, Metal Semiconductor Field Effect Transistors, CRC Microwave Handbook, M. Golio, Editor, 2001
22. M. S. Shur, Bipolar Junction Transistor, Encyclopedia of Physical Science and Technology, 3-d Edition, R. A. Meyers, Editor, September (2001)
21. M. Asif Khan, G. Simin, M. Shur, and R. Gaska, Nitride based High-Power Field-Effect Transistors, in The

Encyclopedia of Materials: Science and Technology, Editors-in-Chief:, K.H.J. Buschow, University of Amsterdam, The Netherlands, R.W. Cahn, University of Cambridge, UK, M.C. Flemings, B. Ilshner, E.J. Kramer, S. Mahajan, 2001, Elsevier Science

20. T. Ytterdal, T. A. Fjeldly, and M. S. Shur, SPICE and Beyond. Advanced Device and Circuit Simulators. in Special Issue "Silicon and Beyond. Advanced Device Models and circuit simulators, M. S. Shur and T. A. Fjeldly, Editors, World Scientific, 2001
19. B. Iñiguez, T. A. Fjeldly, and M. S. Shur, SPICE Models for Novel Semiconductor Devices, in Special Issue "Silicon and Beyond. Advanced Device Models and circuit simulators, IJHSES, M. S. Shur and T. A. Fjeldly, Editors, World Scientific, 2001
18. B. Iñiguez, T. A. Fjeldly, and M. S. Shur, Thin Film Transistor Modeling, in Special Issue "Silicon and Beyond. Advanced Device Models and circuit simulators, IJHSES, M. S. Shur and T. A. Fjeldly, World Scientific, 2001
17. M. S. Shur and M. Asif Khan, GaN and AlGaN Devices: Field Effect Transistors and Ultraviolet Photodetectors, Academic Press, Semiconductors and Semimetals, vol., pp. S. Pearton, Editor (1999)
16. M. S. Shur, A. D. Bykhovski, R. Gaska, and A. Khan, GaN-based Pyroelectric and Piezoelectric Sensors, Semiconductor Homo- and Hetero-Device Structures, Colin Wood, Editor, Academic press, 1999
15. M. S. Shur, SiC Transistors, in "SiC Materials and Devices", ed. Y. S. Park, (1998), Academic Press, Semiconductors and Semimetals, vol. 52, pp. 161-193 (1998)
14. M. S. Shur and M. Asif Khan, GaN and AlGaN Ultraviolet Photodetectors, Academic Press, Semiconductors and Semimetals, vol. 57, pp. 407-439, T. Moustakos and J. Pankove, Editors (1998)
13. M. S. Shur and T. A. Fjeldly, Compound Semiconductor Field Effect Transistors, in Modern Semiconductor Device Physics, Edited by S. M. Sze, John Wiley and Sons, N, 1998 ISBN 0-471-15237-4
12. M. S. Shur and M. Dyakonov, Two-Dimensional Electrons in Field Effect Transistors, International Journal of High Speed Electronics and Systems, in Vol. 9, No. 1, pp. 65-100, March (1998)
11. M. S. Shur and A. Khan, GaN Based Field Effect Transistors, in "High Temperature Electronics", ed. M. Willander and H. Hartnagel, Chapman, London, 1996
10. M. S. Shur, Introduction, in "Compound Semiconductor Technology. The Age of Maturity", World Scientific, 1996, ed. M. S. Shur
9. T. Fjeldly and M. S. Shur, Simulation and Modeling of Compound Semiconductor Devices, in "Compound Semiconductor Technology. The Age of Maturity", World Sci, 1996, ed. M. S. Shur
- T. Fjeldly, T. Ytterdal, and M. S. Shur, Metal Semiconductor Field Effect Transistors, in "Compound Semiconductor Technology. The Age of Maturity", World Sci, 1996, ed. M. S. Shur
8. G. Kelner and M. S. Shur, SiC Devices, chapter in the book "Properties of Silicon Carbide", G. Harris, Editor, M. Faraday House, IEE, England, 1995
7. M. S. Shur and T. A. Fjeldly, HEMT Modeling, in "Semiconductor Device Modeling", C. Snowden and Milnes, Editors, Springer Verlag, London, 1993
6. M. S. Shur, Gunn and IMPATT Diode Modeling, in "Semiconductor Device Modeling", C. Snowden and Milnes, Editors, Springer-Verlag, London, 1993
5. M. S. Shur, Modeling of GaAs and AlGaAs/GaAs Field Effect Transistors, in "Introduction to GaAs Technology," J. Wiley, New York, ed. C. T. Wang, pp. 27-97, 1990
4. M. S. Shur, Submicron GaAs, AlGaAs/GaAs and AlGaAs/InGaAs Transistors, in "Integrated Circuits in 0.05-0.5 μm dimensional range", John Wiley and Sons, ed. K. Watts, pp. 122-175, 1989
3. M. S. Shur, Physical Models for Compound Semiconductor Field Effect Transistors, in "Semiconductor Device Modeling", pp. 89-108, C. Snowden, Editor, Springer Verlag, London, 1989
2. M. S. Shur, Gallium Arsenide versus Silicon. Applications and Modeling, in "Semiconductor Device Modeling", pp. 60-69, C. Snowden, Editor, Springer-Verlag, London (1989)
1. M. S. Shur, GaAs MESFET Modeling, in "Circuit Analysis, Simulation and Design", ed. by A. Ruehli, North-Holland; 1986

Book Translated

J. E. Carrol, *Hot Electron Microwave Generators*, Edward Arnold Ltd. London 1970, translated into Russian by M. E. Levinshtein and M. S. Shur, MIR, Moscow, 1972

Patents Issued

1. M. E. Levinshtein and M. Shur, Current Stabilizer, Soviet patent No. 267706, Bulletin of Inventions & Discoveries, No. 13 (1970) (in Russian)
2. I. V. Grekhov, M. E. Levinshtein, and M. Shur, Gunn Diodes, Soviet Patent No. 367815, (21.12.1970), Bulletin of Inventions and Discoveries
1. 3. I. V. Grekhov, M. E. Levinshtein, and M. Shur, Light Modulator, Soviet Patent No. 398153, (16.11.1970), Bulletin of Inventions and Discoveries
3. B. L. Gelmont and M. Shur, Method to Govern Gunn Diode Parameters, Soviet Patent No. 379968, Bulletin of Inventions and Discoveries, No. 20 (1973) (in Russian)
4. B. L. Gelmont and M. Shur, Method of Microwave Amplification, Soviet Patent No. 422065, Bulletin of Inventions and Discoveries, No. 12 (1974) (in Russian)
5. M. Shur, Folded Logic Gate, United States Patent # 4,593,300, June 3 (1986)
6. S. M. Baier, N. C. Cirillo Jr., S. A. Hanka, and M. Shur, Gated Transmission Line Model Structure for Characterization of FETs, Jan. 20 (1987), US patent # 4,638,341

7. J. K. Abrokwhah, N. C. Cirillo, M. Shur, and O. N. Tufte, High Transconductance Complementary (Al,Ga)As/GaAs Heterostructure Insulated Gate Field-Effect Transistor, United States Patent # 4,814,851, March 21 (1989)
8. J. Xu and M. Shur, Tunneling Emitter Bipolar Transistor, United States Patent # 4,845,541, July 4 (1989)
9. W. Czubytyj, M. Hack, and M. Shur, Method of Making a Double Injection Field Effect Transistor, United States Patent # 4,882,295, Nov. 21 (1989)
10. M. Shur and J. Simmons, Novel high speed integrated heterostructure transistors, photodetectors, and optoelectronic circuits, United States Patent #4,899,200, February 6 (1990)
11. J. Xu, M. Shur, and M. Sweeny, Electronic and optoelectronic devices utilizing light hole properties, United States Patent , #4,899,201, February 6 (1990)
12. J. Xu and M. Shur, Double Base Hot Electron Transistor, United States Patent #4,901,122, February 13 (1990)
13. M. Shur, Modulation Doped Radiation Emitting Device, United States Patent 4,905,059, Feb. 27 (1990)
14. M. Hack, J. G. Shaw and M. Shur, High Current Thin Film Transistor, Patent 4,990,977, Feb. 26 (1991)
15. J. Xu, M. Shur, and M. Sweeny, Electronic and Optoelectronic Laser Devices Utilizing Light Hole Properties, United States Patent , # 4,999,682, March 12 (1991)
16. M. Hack, J. G. Shaw, and M. Shur, Vertical Thin Film Transistor and Optical Sensor Having Leakage Current Suppression Elements, Patent 4,996,553, Feb. 26 (1991)
17. M. S. Shur, Split-gate Field Effect Transistor, United States Patent 5,012,315, April 30 (1991)
18. M. Shur, Split-gate Field Effect Transistor, United States Patent 5,079,620, January 7 (1992)
19. M. Shur and K. Lee, Field-Effect Compound Semiconductive Devices and Methods for Their Preparation, US Patent # 5,161,235, Nov. 3 (1992)
20. G. Kelner and M. S. Shur, Junction Field Effect Transistor with Lateral Gate Voltage Swing (GVS-JFET), United States Patent 5,309,007, May 1994
21. E. Martinez, F. Schuermeyer, C. Cherny, and M. S. Shur, Twin-Tub Complementary Heterostructure Field Effect Transistor Fab Process, US Patent, 5,429,963, July 4, 1995
22. K. Lee, M. S. Shur, and S. Jones, Optoelectronic Circuit Including Heterojunction, United States Patent # 5535231, July 9 (1996)
23. J. M. Xu, M. S. Shur, and B. L. Gelmont, Semiconductor Ridge Waveguide Laser with Lateral Current Injection, United States Patent #5563902, 10/08/1996
24. K. Lee, M. S. Shur, and S. Jones, Method of Manufacturing an Optoelectronic Circuit Including Heterojunction Bipolar Transistor, Laser, and Photodetector, United States Patent # 567478, October 7 (1997)
25. Rajesh Gupta and M. S. Shur, Compact Low Power Complementary FETs," US Patent 6,201,267, March 13 (2001)
26. M. A. Khan, R. Gaska, M. S. Shur, and J. Yang, Metal oxide semiconductor heterostructure field effect transistor US States 6,690,042 February 10 (2004)
27. M. A. Khan, R. Gaska, M. S. Shur, and J. Yang, Method of producing nitride-based heterostructure devices, Patent number: 6764888, July 20 (2004)
28. Q. Fareed, R. Gaska and M. S. Shur, Heterostructure Semiconductor Devices, US patent, 6,841,809, January 11, 2005
29. M. A. Khan, R. Gaska, M. S. Shur, and J. Yang, Metal oxide semiconductor heterostructure field effect transistor, 6,878,593, 4/12/2005
30. H. Chen, M. S. Shur, and T. A. Fjeldly, Conducting remote instructor-controlled experimentation, US Patent 6,932,611, August 23 (2005)
31. R. Gaska, X. Hu, and M. S. Shur, Semiconductor structure having a textured nitride based layer, US patent 690385, June 7, 2005
32. R. Gaska and M. S. Shur, Light Emitting Heterostructure, US patent 6943377, September 13, 2005
33. P. Vitta, A. Zukauskas, R. Gaska and M. S. Shur, White Light Emitting Device and method, US7095056, August 22 (2006)
34. Q. Fareed, R. Gaska and M. S. Shur, Methods of Growing Nitride-Based Film Using Varying Pulses, provisional patent filed on May 7, 2003, published: No 20040224484 US7192849, March 20 (2007)
35. M. Shur and R. Gaska, Inverted nitride-based semiconductor structure, US7268375, June 26 (2007)
36. M. Shur and R. Gaska, Characteristic and/or Use-based Electromagnetic Radiation Generation, US7321109, 1/22/08
37. R. Gaska, J. Zhang, M. S. Shur, Nitride-based Light Emitting Heterostructure, US7,326,963, 2/5/08
38. M. A. Khan, R. Gaska, M. S. Shur, and J. Yang, Nitride-based Heterostructure Devices, US7,348,606, 3/25/08
39. M. S. Shur, R. Gaska, and Yu. Bilenko, Semiconductor Sensing Device, US 7,382,004, 6/3/08
40. R. Gaska, X. Hu, Q. Fareed, M. S. Shur, Etching a Nitride-based Heterostructure, US7,429,534, 9/30/08