

CURRICULUM VITAE

Boris A. Glavin

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EDUCATION, DEGREES:

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| Kiev State University | 1993 | MS in Radiophysics and Electronics |
| Institute of Semiconductor Physics | 1998 | Ph.D. in Solid State Physics |

SCIENTIFIC EMPLOYMENT:

April, 2001 – present: Senior research associate, V.E. Lashkarrev Institute of Semiconductor Physics (ISP);
May, 1999 – April, 2001: Research associate, ISP;
August, 1993 – May, 1999: Engineer-researcher, ISP.

AWARDS:

- Fellowship of the Institute of Semiconductor Physics, Frankfurt (Oder), Germany, 2000.
- Young author best paper award of IUPAP and Program Committee of the 24-th International Conference on Physics of Semiconductors, 1998.
- Fellowship of the National Academy of Sciences of Ukraine for young scientists, 1998.
- Thomas Rumble Graduate Fellowship, Wayne State University, 1996.

FIELD OF INTEREST:

- Phonon lasers (sasers)
- Ultrafast acoustics, acousto-electronics, and acousto-optics.
- Electron-phonon interaction in semiconductor nanostructures.
- Phonon transport in nanostructures.
- Spin relaxation phenomena in solids.
- Resonant tunneling.
- Kinetics of highly nonequilibrium electrons and phonons.

VISITS

- University of Nottingham;
- Technical University of Dortmund;
- International Centre for Theoretical Physics;
- North Carolina State University;
- Wayne State University.

INVITED TALKS

- Semiconductor Acoustic Lasers (Sasers) for Terahertz Acoustics (Int. Congress on Ultrasonics, 2013, Singapore)

- Terahertz Acousto-Electric Effects in Semiconductor Nano Devices (32nd Int. Acoustical Imaging Symposium, 2013, Singapore).

PUBLICATIONS:

43 papers in peer-reviewed journals.

Boris A. Glavin
List of Publications

1. T. Czerniuk, C. Brueggemann, J. Tepper, S. Brodbeck, C. Schneider, M. Kamp, S. Hoefling, B.A. Glavin, D.R. Yakovlev, A.V. Akimov, M. Bayer. Lasing from active optomechanical resonators. *Nat. Comm.* **5**, 4038 (2014).
2. C. Brueggemann, J. Jaeger, B. A. Glavin, V. I. Belotelov, I. A. Akimov, S. Kasture, A. V. Gopal, A. S. Vengurlekar, D. R. Yakovlev, A. V. Akimov, and M. Bayer. Studying periodic nanostructures by probing the in-sample optical far-field using coherent phonons. *Appl. Phys. Lett.* **101**, 243117 (2012).
3. M. Bombeck, A. S. Salasyuk, B. A. Glavin, A. V. Scherbakov, C. Brueggemann, D. R. Yakovlev, V. F. Sapega, X. Liu, J. K. Furdyna, A. V. Akimov, and M. Bayer. Excitation of spin waves in ferromagnetic (Ga,Mn)As layers by picosecond strain pulses. *Phys. Rev. B* **85**, 195324 (2012).
4. C. Brueggemann, A. V. Akimov, B. A. Glavin, V. I. Belotelov, I. A. Akimov, J. Jaeger, S. Kasture, A. V. Gopal, A. S. Vengurlekar, D. R. Yakovlev, A. J. Kent, and M. Bayer. Modulation of a surface plasmon-polariton resonance by subterahertz diffracted coherent phonons. *Phys. Rev. B* **86**, 121401(R) (2012).
5. D. Moss, A. V. Akimov, R. P. Campion, M. Henini, C. T. Foxon, L. Eaves, and A. J. Kent, B. A. Glavin. Picosecond strain pulses probed by the photocurrent in semiconductor devices with quantum wells. *Phys. Rev. B* **83**, 245303 (2011).
6. A.V. Akimov, D. Moss, B. A. Glavin, O. Makarovsky, R. P. Campion, C. T. Foxon, L. Eaves, and A. J. Kent. Ultrafast Acoustic Gating of Photocurrent in Nanodevices with Quantum Wells. *Chinese J. Phys.* **49**, 133 (2011).
7. R P Beardsley, R P Campion, B A Glavin and A J Kent. A GaAs/AlAs superlattice as an electrically pumped THz acoustic phonon amplifier. *New J. Phys.* **13** 073007 (2011).
8. D. M. Moss, A.V. Akimov, B. A. Glavin, M. Henini, and A. J. Kent. Ultrafast Strain-Induced Current in a GaAs Schottky Diode. *Phys. Rev. Lett.* **106**, 066602 (2011).
9. R. Beardsley, A. V. Akimov, B. A. Glavin, W. Maryam, M. Henini, and A. J. Kent. Optical detection of folded mini-zone-edge coherent acoustic modes in a doped GaAs/AlAs superlattice. *Phys. Rev. B* **82**, 041302(R) (2010).
10. D. Moss, A.V. Akimov, O. Makarovsky, R.P. Campion, C.T. Foxon, L. Eaves, A.J. Kent, B.A. Glavin. Ultrafast acoustical gating of the photocurrent in a p-i-n tunneling diode incorporating a quantum well. *Phys. Rev. B*, 2009, vol. 80, 113306.
11. P. M. Walker, A. J. Kent, M. Henini, B. A. Glavin, V. A. Kochelap, and T. L. Linnik. Terahertz acoustic oscillations by stimulated phonon emission in an optically pumped superlattice. *Phys. Rev. B*, 2009, vol. 79, 245313.
12. D. M. Moss, A. V. Akimov, A. J. Kent, B. A. Glavin, M. J. Kappers, J. L. Hollander, M. A. Moram, and C. J. Humphreys. Coherent terahertz acoustic vibrations in polar and semipolar gallium nitride-based superlattices. *Appl. Phys. Lett.*, 2009, vol. 94, 011909.
13. T. Berstermann, A. V. Scherbakov, A. V. Akimov, D. R. Yakovlev, N. A. Gippius, B. A. Glavin, I. Sagnes, J. Bloch, and M. Bayer. Terahertz polariton sidebands generated by ultrafast strain pulses in an optical semiconductor microcavity. *Phys. Rev. B*, 2009, vol. 80, 075301.
14. B.A. Glavin, V.A. Kochelap, T.L. Linnik, A.J. Kent, N.M. Stanton, and M. Henini. Resonance-like piezoelectric electron-phonon interaction in layered structures. *Phys. Rev. B*, 2006, vol. 74, N16, 165317.
15. A.J. Kent, R.N. Kini, N.M. Stanton, M. Henini, B.A. Glavin, V.A. Kochelap, and T.L. Linnik. Acoustic Phonon Emission from a Weakly Coupled Superlattice under Vertical Electron Transport: Observation of Phonon Resonance. *Phys. Rev. Lett.*, 2006, vol. 96, N21, 215504.
16. B.A. Glavin and S. Kubakaddi. Influence of dielectric environment on screening of electron-phonon interaction in quantum well structures. *Phys. Rev. B*, 2006, vol. 74, N3, 033312.
17. B.A. Glavin, V.A. Kochelap, T.L. Linnik, and K.W. Kim. Electron-phonon interaction via the Pekar mechanism in nanostructures. *Phys. Rev. B*, 2005, vol.71, N8, 081305.
18. B.A. Glavin and K.W. Kim. Spin relaxation of two-dimensional holes in strained asymmetric SiGe quantum wells. *Phys. Rev. B*, 2005, vol.71, N3, 035321.

19. B.A. Glavin, V.A. Kochelap, T.L. Linnik, and K.W. Kim. Pekar mechanism of electron-phonon interaction in nanostructures. *Phys. Stat. Sol. C*, 2004, vol. 1, N11, p.2779-2782.
20. B.A. Glavin and K.W. Kim. Resonance-like electrical control of electron spin for microwave measurement. *Appl. Phys. Lett.*, 2004, vol. 85, N3, p.428-430.
21. B.A. Glavin and K.W. Kim. Spin-lattice relaxation in Si quantum dots. *Phys. Rev. B*, 2003, vol. 68, 045308(6).
22. B.A. Glavin, V.I. Pipa, V.V. Mitin, and M.A. Stroschio. Relaxation of a two-dimensional electron gas in semiconductor thin films at low temperatures: Role of acoustic phonon confinement. *Phys. Rev. B*, 2002, vol.65, N20, art. 205315.
23. B.A. Glavin, V.A. Kochelap, T.L. Linnik, K.W. Kim, and M.A. Stroschio. Voltage-controlled generation of high-frequency coherent acoustic phonons in superlattices. *Physica E*, 2002, vol.12, N1-4, pp.458-461.
24. B.A. Glavin, V.A. Kochelap, T.L. Linnik, K.W. Kim, and M.A. Stroschio. Generation of high-frequency coherent acoustic phonons in superlattices under hopping transport. I. Linear theory of phonon instability. *Phys. Rev. B*, 2002, vol.65, N8, art. 085303.
25. B.A. Glavin, V.A. Kochelap, T.L. Linnik, K.W. Kim, and M.A. Stroschio. Generation of high-frequency coherent acoustic phonons in superlattices under hopping transport. II. Steady-state phonon population and electric current in generation regime. *Phys. Rev. B*, 2002, vol.65, N8, art. 0853034.
26. B.A. Glavin. Low-temperature heat transfer in nanowires. *Phys. Rev. Lett.*, 2001, vol. 86, N 19, pp.4318-4321.
27. S.V. Vitusevich, A. Foerster, H. Lueth, K.M. Idlekofer, A.E. Belyaev, B.A. Glavin, R.V. Konakova. Tunneling through X-valley related impurity states in GaAs/AlAs resonant tunneling diodes. *Phys. Rev. B*, 2000, vol. 61, N 16, pp.10898-10904.
28. B.A. Glavin, V.A. Kochelap, and T.L. Linnik. Current response of a biased superlattice irradiated by nonequilibrium phonons. *Pis'ma Zh. Eksp. Teor. Fiz.*, 2000, vol. 71, N 5, pp.280-284 [*JETP Lett.*, 2000, vol. 71, N 5, pp.191-194].
29. B.A. Glavin, V.A. Kochelap, and V.V. Mitin. New type of oscillations in bistable resonant tunneling diodes. *Pis'ma Zh. Techn. Fiz.*, 1999, vol. 25, N 10, pp.64-68 [*Tech. Phys. Lett.*, 1999, vol. 25, N 5, pp.408-409].
30. D.A. Romanov, B.A. Glavin, V.V. Mitin, and M.A. Stroschio. Stimulated decay of nonselectively pumped optical phonons in GaAs. *Phys. Rev. B*, 1999, vol. 60, N 7, pp.4771-4777.
31. D.A. Romanov, B.A. Glavin, V.V. Mitin, and M.A. Stroschio. Effect of stimulated optical phonon decay on hot carriers in bulk GaAs. *Physica B*, 1999, vol. 272, N 1-4, pp.422-424.
32. V.V. Mitin, D.A. Romanov, B.A. Glavin, and M.A. Stroschio. Stimulated optical phonon decay in GaAs/AlAs heterostructures. *Microelectronic Engineering*, 1999, vol. 47, pp.361-363.
33. B.A. Glavin, V.A. Kochelap, and T.L. Linnik. Generation of high-frequency coherent acoustic phonons in a weakly coupled superlattice. *Appl. Phys. Lett.*, 1999, vol. 74, N 23, pp.3525-3527.
34. B.A. Glavin, V.A. Kochelap, and V.V. Mitin. New type of electric oscillations in bistable resonant tunneling diode. *J. Appl. Phys.*, 1999, vol. 85 N 6, pp.3359-3363.
35. V. A. Kochelap, B. A. Glavin, and V. V. Mitin. Transverse patterns in the bistable resonant tunneling systems under ballistic lateral transport. *VLSI Design*, vol. 8, No. 1-4, pp. 481-487 (1998).
36. Pipa, B. A. Glavin, V. V. Mitin, and M. Stroschio. Relaxation rates of electrons in a quantum well embedded in a finite size semiconductor slab. *Semic. Sci. Technol.*, vol. 13, pp. A97-A99 (1998).
37. E. Belyaev, S. A. Vitusevich, B. A. Glavin, R. V. Konakova, T. Figielski, W. Dobrowolski, A. Makosa, and L. N. Kravchenko. Magnetic field induced resonance in a double-barrier resonant tunneling diode. *Sol. St. Electron.*, vol. 42, No. 2, pp. 257-261 (1998).
38. Glavin, V. A. Kochelap, and V. V. Mitin. Patterns in bistable resonant-tunneling structures. *Phys. Rev. B*, vol. 56, No. 20, pp.13346-13359 (1997).
39. E. Belyaev, S. A. Vitusevich, B. A. Glavin, R. V. Konakova, T. Figielski, A. Makosa, L. N. Kravchenko, and W. Dobrowolski. Bistability of double--barrier resonant tunneling structures with wide spacer layers. *Neorganicheskie Materialy*, vol. 33, No. 2, pp.158-161 (1997) (in Russian).
40. E. Belyaev, S. A. Vitusevich, B. A. Glavin, R. V. Konakova, W. Dobrowolski, A. Makosa, L. N. Kravchenko, and E. S. Gornev. Tunnel current features caused by defect assisted process in resonant tunneling structures. *Acta Physica Polonica A*, vol. 90, No. 4, pp.727-730 (1996).

41. E. Belyaev, S. A. Vitusevich, T. Figielski, B. A. Glavin, R. V. Konakova, L. N. Kravchenko, A. Makosa, and T. Wosinski. Effect of spacer layer on quantum interference in double barrier resonant tunneling structures. *Surface Science*, vol. 362, No. 1-3, pp.235-238 (1996).
42. E. Belyaev, S. A. Vitusevich, B. A. Glavin, A. Makosa, and W. Dobrovolski. Effect of magnetic field on the fine structure of tunnel current in double barrier resonant tunneling structures. *Acta Physica Polonica A*, vol. 88, N 4, pp.675-678 (1995).
43. V. A. Kochelap, B. A. Glavin, and V. V. Mitin. Patterns in double-barrier heterostructures. *Lithuanian Journal of Physics*, vol. 35, No. 5-6, pp. 549-551 (1995).