

CURRICULUM VITAE

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Date of birth: January 14, 1951 **Place of birth:** Zaporozhie City **Nationality:** Ukrainian



Education/Titles:

- * Engineer in semiconductor electronics in 1973 from Belarusian State University of Informatics and Radioelectronics
- * Ph.D. student in 1973-1977 at Belarusian State University of Informatics and Radioelectronics
- * Ph.D. in 1980 from Institute of Physics of Solid State and Semiconductors of Academy of Sciences of Belarus
- * Postdoc Fellowship in 1982-1983 in Aarhus University and Copenhagen University
- * Second Doctor Degree in 1988 from Belarusian State University
- * Professor in 1990 from Belarusian State University of Informatics and Radioelectronics
- * Chartered Physicist in 2000 from the Institute of Physics (Great Britain)
- * Academician of the Belarusian Engineering Academy, since 2001
- * Chevalier des Palmes Académiques in 2004 (France)
- * Excellence in Education in 2009 (Belarus)

Career/Employment:

Permanent positions in Belarusian State University of Informatics and Radioelectronics:

- * Engineer, 1973-1974
- * Junior researcher, 1974-1975
- * Senior engineer, 1975-1977
- * Senior researcher, 1977-1980
- * Head of the Research Lab, 1980-1988
- * Professor, 1988-2000
- * Dean, 2000-2001
- * Vice-Rector, 2001-2009
- * Chair of the Department, 2009 - till now

Invited positions :

- * Visiting Scientist in Salford University (Manchester), 1988 (2 months)
- * Visiting Professor in Mediterranean University (Marseille), 1996 (1 month)
- * Visiting Professor in University of Electro-communications (Tokyo), 1997 (1 month)
- * Associated Professor in University Aix-Marseille III (Marseille), 1998 -2000
- * EC expert in FP5-FP7, 1999 - till now

Memberships in societies, committees:

- * Co-chairman of International Organizing Committee of the Conferences "Nanomeeting-95, -97, -99, -2001, -2003, -2005, -2007, -2009, -2011, -2013, -2015"
- * Chairman of the Coordination board of Belarusian Interuniversity Basic Research Program «Nanoelectronics», since 1997
- * Member of Belarusian Physical Society, since 1997
- * Member of the Institute of Physics (Great Britain), since 2000
- * Member of the Editorial Board of Doklady BGUIR (Journal), since 2003
- * Member of the Coordination Boards of National Programs «Electronics» and «Nanotechnologies», since 2006

Experience:

Quantum mechanics simulation of electronic, optical, and transport properties of bulk and nanosize silicon, germanium, semiconducting silicide and semiconducting oxide structures. Theoretical modeling and computer simulation of charge carrier transport and related switching and memory effects in nanoelectronic and spintronic devices. Formation, study and applications of nanoporous structures made of silicon, alumina, titanium and tungsten oxides.

Teaching students in nanoelectronics, spintronics and nanotechnology.

International research contracts/grants obtained:

- 1994-1996** “Electronic and optical property simulation of intrinsic and doped semiconducting iron disilicide” from Volkswagen-Stiftung, Germany.
- 1995-1997** “Electron structure of β -FeSi₂ and materials on its basis” from Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie, Germany.
- 1998-2000** “Silicon modules for integrated light engineering” from European Commission, Belgium.
- 2006-2007** “Etude des propriétés chimiques, structurales, électroniques et de transport des jonctions tunnel métal ferromagnétique/oxyde barrière/semi-conducteur pour de nouvelles cellules de mémoires non volatiles basées sur l’injection d’électrons polarisés en spin dans le silicium” from ECO-NET Program, France.
- 2006-2008** “Embedded magnetic components” from European Commission, Belgium.

Publications: books – **9**, Conference proceedings volumes (Editor) – **11**, papers in refereed journals – more than **170**, communications to scientific meetings – more than **80**, invention certificates and patents - **51**.

Recent 10 selected publications:

1. V. E. Borisenko, S. Ossicini, *What is What in the Nanoworld. Third, Revised and Enlarged Edition* (Wiley-VCH, Weinheim, 2012), 601 p.
2. *Physics, Chemistry and Application of Nanostructures*, edited by V. E. Borisenko, S. V. Gaponenko, V. S. Gurin, C. H. Kam (World Scientific, Singapore, 2015), 627 p.
3. A. V. Krivosheeva, V. L. Shaposhnikov, V. E. Borisenko, J.-L. Lazzari, C. Waileong, J. Gusakova, B. K. Tay, Theoretical study of defect impact on two-dimensional MoS₂, *Journal of Semiconductors* **36**(12), 122002 (2015).
4. D. B. Migas, V. E. Borisenko, Rusli, C. Soci, Revising morphology of <111>-oriented silicon and germanium nanowires, *Nano Convergence* **2**, 16 (8 pages) (2015).
5. D. B. Migas, A. B. Filonov, V. E. Borisenko, N. V. Skorodumova, Orientation effects in morphology and electronic properties of anatase TiO₂ one-dimensional nanostructures, *Phys. Chem. Chem. Phys.* **16**, 9490-9498 (2014).
6. X. Wu, D. Cha, M. Bosman, N. Raghavan, D. B. Migas, V. E. Borisenko, X.-X. Zhang, K. Li, K.-L. Pey, Intrinsic nanofilamentation in resistive switching, *J. Appl. Phys.* **113**(11), 114503 (6 pages) (2013).
7. M. A. Danilyuk, D. B. Migas, A. L. Danilyuk, V. E. Borisenko, X. Wu, N. Raghavan, K. L. Pey, Multiphonon ionization of traps formed in hafnium oxide by electrical stress, *Phys. Stat. Sol. A* **210**(2), 361-366 (2013).
8. V. L. Shaposhnikov, A. V. Krivosheeva, V. E. Borisenko, J.-L. Lazzari, F. Arnaud d’Avitaya, *Ab initio* modeling of the structural, electronic, and optical properties of A^{II}B^{IV}C^V₂ semiconductors, *Phys. Rev. B* **85**, 205201 (2012).
9. N. V. Gaponenko, V. S. Kortov, N. P. Smirnova, T. I. Orekhovskaya, I. A. Nikolaenko, V. A. Pustovarov, S. V. Zvonarev, A. I. Slesarev, O. P. Linnik, M. A. Zhukovskii, V. E. Borisenko, Sol-gel derived structures for optical design and photocatalytic application, *Microel. Eng.* **90**(1), 131-137 (2012).
10. M. A. Danilyuk, D. B. Migas, A. L. Danilyuk, V. E. Borisenko, X. Wu, N. Raghavan, K. L. Pey, Thermal reversible breakdown and resistivity switching in hafnium dioxide, *J. Nano- and Electronic Phys.* **4**(1), 01014 (2012).