

Curriculum Vitae

10.05.2024

PERSONAL DETAILS:

Given name: **GUNTARS**
Family name: **ZVEJNIEKS**

Address: Kengaraga 8, Riga LV-1063, Latvia
e-mail: ***guntars.zvejnieks*** at ***cfi.lu.lv***
Date of birth: 1971 Riga, Latvia

Education:
1/ 1999-2001, Dr. rer. nat., University of Osnabrück, (Dept. of Physics), Germany
2/ 1994-1996, MS University of Latvia, Faculty of Physics and Mathematics (Dept. of Theoretical Physics)
3/ 1990-1994, BS University of Latvia, Faculty of Physics and Mathematics (Dept. of Theoretical Physics)

Employment:
1/ 1994-1996 Engineer at the Microelectronics Center of Latvian Academy of Sciences, 19 Turgeneva str., Riga LV-1586, Latvia
2/ 1996-2003: Engineer at the Institute of Solid State Physics, University of Latvia, 8 Kengaraga str., Riga LV-1063, Latvia,
3/ 2003- 2006: Researcher at the Institute of Solid State Physics, University of Latvia, 8 Kengaraga str., Riga LV-1063, Latvia.
4/ 2006- to date: Leading researcher at the Institute of Solid State Physics, University of Latvia, 8 Kengaraga str., Riga LV-1063, Latvia.

Professional experience:

2002 (1 month) Visiting scientist, EPFL (Ecole Polytechnique Federale de Lausanne, Switzerland)
2002 (1 month) Visiting scientist, Schuit Institute of Catalysis, Eindhoven University of Technology (The Netherlands)
2003 (2 month) Visiting scientist, MPI-Plasmaphysik, Garching (Germany)
2003 (1 month) Visiting scientist, HUT, Espoo/Helsinki (Finland)
2004 (1 month) Visiting scientist, JET-EFDA/CSU (UK)
2005 (1 month) Visiting scientist, MPI-Plasmaphysik, Garching (Germany)
2005 (2 month) Visiting scientist, Semiconductor Physics Institute, Vilnius (Lithuania)
2006 (2 month) Visiting scientist, Semiconductor Physics Institute, Vilnius (Lithuania)

Awards:

2019 *Diploma of the President of the Latvian Academy of Sciences. Dr. Yu.A. Mastrov, Dr. D. Zablotky, Dr. G. Zvejnieks, Dr. L.L. Rusevich, Dr.habil. V.N. Kuzovkov, Academician of LAS E.A. Kotomin, "Theoretical modelling of self-assembling processes in prospective perovskites for green energy application", 2019.*

Publications (2018-2024): (total: 53)

- 1) G. Zvejnieks, A. Anspoks, E.A. Kotomin, V.N. Kuzovkov, "Kinetic Monte Carlo modeling of Y₂O₃ nano-cluster formation in radiation resistant matrices", Nucl. Instrum. Methods Phys. Res. B, 2018, **434**, pp. 13-22. DOI: 10.1016/j.nimb.2018.08.005 SNIP(2017)=1.020, IF(2017)=1.323
- 2) G. Zvejnieks, L.L. Rusevich, D. Gryaznov, E.A. Kotomin. Interface-induced enhancement of piezoelectricity in the (SrTiO₃)_m/(BaTiO₃)_{M-m} superlattice for energy harvesting applications. Phys. Chem. Chem. Phys., 2019, **21**, pp. 23541-23551. DOI: 10.1039/c9cp04086b SNIP(2018)=0.981, IF(2018)=3.567
- 3) L.L. Rusevich, G. Zvejnieks, E.A. Kotomin. Ab initio simulation of (Ba,Sr)TiO₃ and (Ba,Ca)TiO₃ perovskite solid solutions. Solid State Ionics, 2019, **337**, pp. 76–81. DOI: 10.1016/j.ssi.2019.04.013 SNIP(2018)=0.939, IF(2018)=2.886
- 4) D. Zablotsky, L.L. Rusevich, G. Zvejnieks, V. Kuzovkov, E. Kotomin. Manifestation of dipole-induced disorder in self-assembly of ferroelectric and ferromagnetic nanocubes. Nanoscale, 2019, **11**, pp. 7293-7303. DOI: 10.1039/C9NR00708C SNIP(2018)=1.338, IF(2018)=6.970
- 5) L.L. Rusevich, G. Zvejnieks, E.A. Kotomin, M. Maček Kržmanc, A. Meden, Š. Kunej, I.D. Vlaicu. Theoretical and experimental study of (Ba,Sr)TiO₃ perovskite solid solutions and BaTiO₃/SrTiO₃ heterostructures. J. Phys. Chem. C, 2019, **123**, pp. 2031–2036. DOI: 10.1021/acs.jpcc.8b09750 SNIP(2018)=1.083, IF(2018)=4.309
- 6) L.L. Rusevich, E.A. Kotomin, G. Zvejnieks, A.I. Popov. Ab initio calculations of structural, electronic and vibrational properties of BaTiO₃ and SrTiO₃ perovskite crystals with oxygen vacancies. Low Temp. Phys., 2020, **46**, pp. 1185–1195. DOI: 10.1063/10.0002472 SNIP(2019)=0.748, IF(2019)=0.791
- 7) L.L. Rusevich, E.A. Kotomin, G. Zvejnieks, A.I. Popov. Ab initio calculations of structural, electronic and vibrational properties of BaTiO₃ and SrTiO₃ perovskite crystals with oxygen vacancies. Fiz. Nizk. Temp. / Low Temp. Phys., 2020, **46**, pp. 1394–1406. SNIP(2019)=0.201
- 8) M. Sokolov, Yu.A. Mastrikov, G. Zvejnieks, D. Bocharov, E.A. Kotomin, V. Krasnenko. Water splitting on multifaceted SrTiO₃ nanocrystals: computational study. Catalysts, 2021, **11**, 1326 (pp. 1-8). DOI: 10.3390/catal11111326 SNIP(2020)=0.951, IF(2020)=4.146
- 9) G. Zvejnieks, D. Zavickis, E.A. Kotomin, D. Gryaznov. BaCoO₃ monoclinic structure and chemical bonding analysis: hybrid DFT calculations. Phys. Chem. Chem. Phys., 2021, **23**, pp. 17493–17501. DOI: 10.1039/d1cp01900g SNIP(2020)=0.962, IF(2020)=3.676
- 10) L.L. Rusevich, E.A. Kotomin, G. Zvejnieks, M. Maček Kržmanc, S. Gupta, N. Daneu, J.C.S. Wu, Y.-G. Lee, W.-Y. Yu. Effects of Al doping on hydrogen production efficiency upon photostimulated water splitting on SrTiO₃ nanoparticles. J. Phys. Chem. C, 2022, **126**, pp. 21223–21233. DOI: 10.1021/acs.jpcc.2c05993 SNIP(2021)=0.904, IF(2021)=4.177; SJR(2021) - Q1, JIF(2021) - Q2
- 11) Yu.A. Mastrikov, D. Gryaznov, G. Zvejnieks, M.N. Sokolov, M. Putniņa, E.A. Kotomin. Sr doping and oxygen vacancy formation in La_{1-x}Sr_xScO_{3-δ} solid solutions: Computational

- modelling. *Crystals*, 2022, **12**, 1300 (pp. 1-17). DOI: 10.3390/cryst12091300 SNIP(2021)=0.821, IF(2021)=2.670; SJR(2021) - Q2, JIF(2021) - Q2
- 12) Yu.A. Mastrikov, D. Gryaznov, M.N. Sokolov, G. Zvejnieks, A.I. Popov, R.I. Eglitis, E.A. Kotomin, M.V. Ananyev. Oxygen vacancy formation and migration within the antiphase boundaries in lanthanum scandate-based oxides: computational study. *Materials*, 2022, **15**, 2695 (pp. 1-10). DOI: 10.3390/ma15072695 SNIP(2021)=1.137, IF(2021)=3.748; SJR(2021) - Q2, JIF(2021) - Q1
- 13) D. Zavickis, G. Zvejnieks, A. Chesnokov, D. Gryaznov. Single oxygen vacancy in BaCoO₃: Hybrid DFT calculations and local site symmetry approach. *Solid State Ionics*, 2022, **375**, 115835 (pp. 1-4). DOI: 10.1016/j.ssi.2021.115835 SNIP(2021)=0.830, IF(2021)=3.699; SJR(2021) - Q1, JIF(2021) - Q2
- 14) G. Zvejnieks, Yu. Mastrikov, D. Gryaznov. Jahn–Teller distortion in Sr₂FeO₄: group-theoretical analysis and hybrid DFT calculations. *Sci. Rep.*, 2023, **13**, 16446 (pp. 1-14). DOI: 10.1038/s41598-023-43381-7 SNIP(2022)=1.312, IF(2022)=4.6; CSR(2022) - Q1, JIF(2022) - Q2
- 15) V. Krasnenko, A. Platonenko, A. Liivand, L.L. Rusevich, Yu.A. Mastrikov, G. Zvejnieks, M. Sokolov, E.A. Kotomin. Modeling of the lattice dynamics in strontium titanate films of various thicknesses: Raman scattering studies. *Materials*, 2023, **16**, 6207 (pp. 1-15). DOI: 10.3390/ma16186207 SNIP(2022)=1.067, IF(2022)=3.4; CSR(2022) - Q2, JIF(2022) - Q2
- 16) J. Cirulis, A. Antuzevics, A. Fedotovs, U. Rogulis, G. Zvejnieks. Local structure of an oxygen impurity and fluorine vacancy complex in LiYF₄. *Materialia*, 2023, **30**, 101848 (pp. 1-7). DOI: 10.1016/j.mtla.2023.101848 SNIP(2022)=1.116, IF(2022)=3.4; CSR(2022) - Q2
- 17) M. Sokolov, Yu.A. Mastrikov, D. Bocharov, V. Krasnenko, G. Zvejnieks, K.S. Exner, E.A. Kotomin. Computational study of oxygen evolution reaction on flat and stepped surfaces of strontium titanate. *Catal. Today* 2024, **432**, 114609 (pp. 1-7). DOI: 10.1016/j.cattod.2024.114609 SNIP(2022)=1.091, CSR(2022) - Q1; IF(2021)=5.3, JIF(2021) - Q1

/G. Zvejnieks/