

APPLICATION DOCUMENT

CURRICULUM VITAE

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EDUCATION

- Ph.D. Degree in physics and mathematics was awarded by the Faculty of Physics, Moscow State University, 2008. The title of thesis is «Theoretical studies of physical properties of nanostructures on a copper surface». Supervisors are Prof A.M. Saletsky and Prof. V.S. Stepanyuk.
- M.S. Degree in physics was awarded by the Faculty of Physics, Moscow State University, 2002. The title of diploma work is «Computer support for practical work of Mechanics».

Scientific Curriculum

Since 2014 Associate Professor at the Faculty of Physics, Moscow State University

2012-2014 Senior Lecture at the Faculty of Physics, Moscow State University

2009-2012 Teaching Assistant at the Faculty of Physics, Moscow State University

2007-2008 Researcher at the Faculty of Physics, Moscow State University

2005-2006 Researcher at the Max Planck Institute of Microstructure Physics, Halle, Germany

2002-2004 Ph.D. student. Martin-Luther-Universität, Halle, Germany

AWARDS and HONORS

- Fellowship of the Moscow State University for young instructors and the researchers who have achieved considerable results in pedagogical and research activity (2010, 2012, 2013).
- The winner of competition of young scientists of Faculty of Physics, Moscow State University (2010).

Activities within the Scientific Community

- Project leader in the Grant of the President of Russian Federation MK-43.2009.2, «Theoretical studies of the mechanisms of formation of nanostructures on a metal surfaces», 2009-2010
- Project leader in the Grant RFBR 12-02-31115-mol-a (Russian Foundation of Basic Researches), «Anisotropy of magnetic properties of nanostructures on a metal surfaces», 2012-2013.

36 articles cited 350 times.

H-Index: 12

List of publications

- V.S. Stepanyuk, P. Bruno, A.L. Klavsyuk, A.N. Baranov, W. Hergert, A.M. Saletsky, I. Mertig, Structure and quantum effects in atomic-sized contacts, *Phys. Rev. B* **69**, 033302 (2004).
- S. Pick, V.S. Stepanyuk, A.L. Klavsyuk, L. Niebergall, W. Hergert, J. Kirschner, P. Bruno, Magnetism and structure on the atomic scale: Small cobalt clusters in Cu(001), *Phys. Rev. B* **70**, 224419 (2004).
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- A.L. Klavsyuk, V.S. Stepanyuk, W. Hergert, A.M. Saletsky, P. Bruno, I. Mertig, Structure and electronic states in Cu nanocontacts, *Surface Science*, **566-568**, 944-948 (2004).
- H.L. Meyerheim, V.S. Stepanyuk, A.L. Klavsyuk, E. Soyka, J. Kirschner, Structure and atomic interactions at the Co/Pd(001) interface: Surface x-ray diffraction and atomic-scale simulations, *Phys. Rev. B* **72**, 113403 (2005).
- V.S. Stepanyuk, A.L. Klavsyuk, L. Niebergall, P. Bruno, End electronic states in Cu chains on Cu(111): Ab initio calculations, *Phys. Rev. B* **72**, 153407 (2005).
- V.S. Stepanyuk, A.L. Klavsyuk, L. Niebergall, A.M. Saletsky, W. Hergert, P. Bruno, Ab Initio approach for atomic relaxation in supported magnetic clusters, *Phase Transitions*, **78**, 61 (2005).
- R.Z. Huang, V.S. Stepanyuk, A.L. Klavsyuk, W. Hergert, P. Bruno, J. Kirschner, Atomic relaxations and magnetic states in a single-atom tunneling junction, *Phys. Rev. B* **73**, 153404 (2006).
- M. Czerner, A. Bagrets, V.S. Stepanyuk, A.L. Klavsyuk, I. Mertig, Parity oscillation and Relaxation in Monatomic Copper Wires, *Phys. Rev. B* **74**, 115108 (2006).
- P.A. Ignatiev, V.S. Stepanyuk, A.L. Klavsyuk, W. Hergert, P. Bruno, Electronic confinement in stepped Cu(111) surfaces: Ab initio study, *Phys. Rev. B* **75**, 155428 (2007).
- S. Pick, P.A. Ignatiev, A.L. Klavsyuk, W. Hergert, V.S. Stepanyuk, P. Bruno, Structure and magnetic properties of Co chains on a stepped Cu surface, *Journal of Physics: Condensed Matter* **19**, 446001, (2007).
- S. V. Kolesnikov, A. L. Klavsyuk, and A. M. Saletsky, Atomic-scale self-organization of Co nanostructures embedded into Cu(100), *Phys. Rev. B* **79**, 115433 (2009).
- Kolesnikov S.V., Klavsyuk A.L., Saletsky A.M., Simulation of the formation of vacancies upon scanning of Cu(100) surface, *JETP Letters* **89**, № 9, p. 471-474 (2009).
- Kolesnikov S.V., Klavsyuk A.L., Saletsky A.M., Formation of Cobalt Bilayer Islands on Cu(100) Surface, *Physics of the Solid State* **51**, № 6, p. 1254-1259 (2009).

- S. V. Kolesnikov, A. L. Klavsyuk, and A. M. Saletsky, Vacancy formation on stepped Cu(100) accelerated with STM: Molecular dynamics and kinetic Monte Carlo simulations, *Phys. Rev. B* **80**, 245412 (2009).
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- Kolesnikov S.V., Klavsyuk A.L., Saletsky A.M., Anisotropy of energy barriers for diffusion of the Co adatom in the vicinity of the Co islands on the Cu(100) surface, *Physics of the Solid State* **53**, № 12, p. 2504-2507 (2011).
- Klavsyuk A.L., Kolesnikov S.V., Gainullin I.K., Saletsky A.M., Study of the Interaction of a Palladium Nanocontact with a Hydrogen Molecule, *JETP Letters* **93**, № 9, p. 530-533 (2011).
- E. R. Amanbaev, E. Yu. Zykova, A. A. Klavsyuk, T. N. Polivnikova, A. A. Khaidarov, A. L. Klavsyuk, Calculation of the electronic structure of metal island films, *Journal of Surface Investigation. X-ray, Synchrotron and Neutron Techniques* **5**, № 4, p. 672-676 (2011).
- I. K. Gainullin, A. L. Klavsyuk, Electron capture in the collision of a proton with a hydrogen atom, *Bulletin of the Russian Academy of Sciences: Physics* **76**, № 5, p. 542-545, (2012).
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- A.L. Klavsyuk, S.V. Kolesnikov, I.K. Gainullin, A.M. Saletsky, Molecular dynamics study of Co-Au and Ag-Au bimetallic atomic chain formation, *The European Physical Journal B* **85**, 331 (2012).
- S.V. Kolesnikov, A.L. Klavsyuk, A.M. Saletsky, Self-organisation and magnetic properties of Co nanostructures embedded in a Cu(100) surface, *Surface Science* **612**, p. 48–56 (2013).
- Smelova E.M., Klavsyuk A.L., Tsysar' K.M., Saletskii A.M., Investigation of the mechanical and electronic properties of Ag-Au and Co-Au nanocontacts by the method of

first-principle molecular dynamics, Moscow University Physics Bulletin **68**, № 1, p. 92-95 (2013).

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- S. V. Kolesnikov, I. N. Kolesnikova, A. L. Klavsyuk and A. M. Saletsky, Formation of gold nanocontacts in an ultrahigh vacuum transmission electron microscope: A kinetic Monte Carlo simulation, Europhysics Letters **103**, 48002 (2013).
- Klavsyuk A.L., Kolesnikov S.V., Saletsky A.M., Magnetic properties of Fe and Co nanoclusters embedded in the first Cu (100) surface layer, JETP Letters **99**, № 11, p. 646 (2014).
- Syromyatnikov A.G, Klavsyuk A.L., Kolesnikov S.V., Saletsky A.M., Analysis of interactions between Co adatoms on the vicinal Cu (111) surface, JETP Letters **100**, № 1, p. 246 (2014).
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- Alexander Tonkikh, Andrey Klavsyuk, Nikolay Zakharov, Alexander Saletsky, Peter Werner, SnSi nanocrystals of zinc-blende structure in a Si matrix, Nano Research **8**, № 12, c. 3905-3911 (2015).
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