

# Curriculum Vitae

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**Arkady V. Krasheninnikov, Ph.D. (Physics), Docent**

ADDRESS (1): Materials Physics Division, Department of Physics,  
University of Helsinki, P.O.Box 43  
(Pietari Kalmin katu 2), FI-00014, Finland  
TEL: +358-9-19150617 FAX: +358-9-19150042

ADDRESS (2): Department of Applied Physics,  
Aalto University, Espoo  
P.O. Box 11100, FIN 02015, Finland  
TEL: +358-9-4513138 FAX: +358-9-4513116

E-MAIL: [akrashen@acclab.helsinki.fi](mailto:akrashen@acclab.helsinki.fi), [ark@fyslab.hut.fi](mailto:ark@fyslab.hut.fi)

WWW: <http://www.acclab.helsinki.fi/~akrashen/>

## EDUCATION AND ACADEMIC DEGREES

- Docent Degree from University of Helsinki, 2005.
- Ph.D. Degree in Physics (Solid State Physics), Moscow State Engineering Physics Institute, 1995.
- Master Degree (with Special Honor) in Physics (Solid State Physics), Moscow State Engineering Physics Institute, 1992.

## CURRENT POSITIONS

Docent (Adjunct Professor), Department of Physics, University of Helsinki, and  
Senior Researcher, Department of Applied Physics, Aalto University

## PREVIOUS POSITIONS

- Sep 2005 – Jul 2006 Academy Fellow, Accelerator Laboratory, University of Helsinki.
- Jan 2005 – Aug 2005 Researcher, Laboratory of Physics, Helsinki University of Technology
- Mar 2001-Dec 2004, Researcher, Accelerator Laboratory, University of Helsinki.
- Feb 1999-Feb 2001, Associate Professor, Department of Superconductivity and Nanostructures, Moscow State Engineering Physics Institute.
- May 1995-Feb 1999 Researcher, Moscow State Engineering Physics Institute.
- May 1992- May 1995 Post-graduate student, Moscow State Engineering Physics Institute.

## RESEARCH EXPERIENCE

- Electronic structure calculations;
- Theoretical nanoscience;
- Graphene, carbon nanotubes, and other carbon systems;
- Inorganic two-dimensional materials;
- Atomistic (empirical-potential) computer simulations;
- Irradiation-induced effects in solids;
- Tokamak materials;
- High-pressure materials;
- Surface science, theory of STM;
- Semiconductors, quantum cascade-lasers;
- Superconductivity;
- Strongly correlated systems.

## PUBLICATIONS

116 publications in refereed journals, among them

- Science (1)
- Nature Materials (1)
- Nature Nanotechnology (1)
- Nature Physics (1)
- Phys. Rev. Lett. (13)
- Nano Letters (3)
- ACS Nano (2)
- Appl. Phys. Lett. (4),
- Phys. Rev. B (25)

4 book chapters and 8 non-refereed publications.

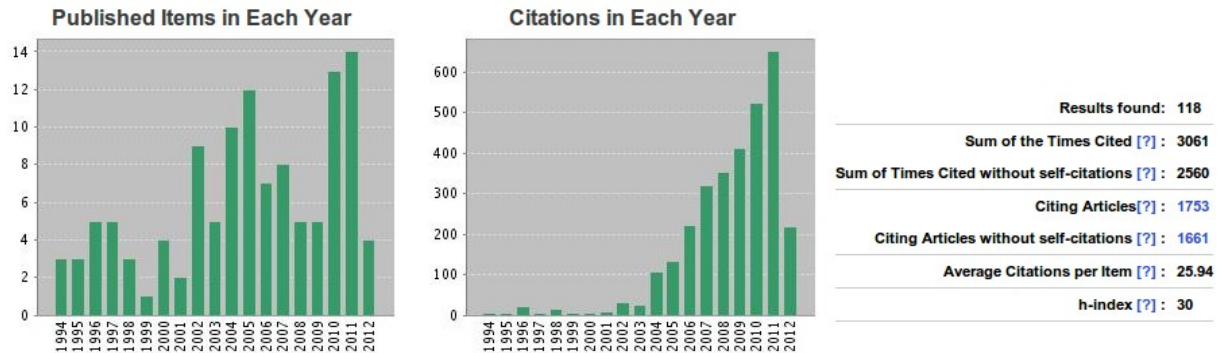
## CITATIONS AND H-INDEX

- Total number of citations: 3000+
- H-Index 30
- Recent Web of Knowledge report is shown below

### Citation Report Author=(krasheninnikov AV or krasheninnikov A)

Timespan=1994-2012. Databases=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH.

This report reflects citations to source items indexed within Web of Science. Perform a Cited Reference Search to include citations to items not indexed within Web of Science.



## INVITED TALKS AT INTERNATIONAL SCIENTIFIC CONFERENCES/WORKSHOPS (40 talks)

1. "Ion irradiation of carbon nanotubes and related phenomena", EMRS Spring Meeting, Strasbourg, France (2003);
2. "Irradiation effects in carbon nanotubes", NanoteC03, Brighton, UK (2003);
3. "Ion irradiation of carbon nanotubes", International Workshop on Interactions between Nanostructures and Particle Beams, Shanghai, China, March 2004.
4. "Ion irradiation as a tool to tailor properties of carbon nanotubes", International workshop on carbon nanotubes, Helsinki, Finland, September 2004.
5. "Ion irradiation of carbon nanotubes", International workshop "Nanotubes and nanostructures", Frascati, Italy, October 2004.
6. "Irradiation effects in carbon systems", International Conference "Advances in Functional Materials", Maroochydore, Australia, 30 Nov-02 Dec 2005.
7. "Irradiation of Carbon Nanotubes: Theoretical Predictions and Experimental Results", 8th Inter. Conf. on Comp. Simulation of Radiat. Effects in Solids, Richland, USA, June 2006.
8. "Simulations of irradiation effects in carbon nanostructures", Computational Challenges and Tools for Nanotubes (CCTN07), Rio de Janeiro, Brazil, June 2007.
9. "Irradiation effects in nano-structured carbon: from defects to self-organization" Foundation and applications of Density Functional Theory. Tokyo, Japan, August 2007.
10. "Irradiation-induced magnetism in carbon", Workshop on graphene and magnetism in carbon, Madrid, Spain, September 2007.
11. "Irradiation-induced phenomena in carbon nanostructures", The March Meeting of the American Physical Society 2008, New Orleans, USA.
12. "Irradiation-induced effects in carbon nanostructures: from defects to self-organization", The 20th International Conference on Application of Accelerators in Research and Industry, August 10-15, 2008, Fort Worth, Texas USA.
13. "Transition metal impurities in graphene", International Workshop "Modeling of Carbon and Inorganic Nanotubes and Nanostructures", Lausanne, Switzerland, May 13-15, 2009,
14. "Irradiation of carbon nanomaterials with electrons and ions: from defects to self-organization", Spring 2009 Materials Research Society Meeting, San Francisco, April 2009, USA.
15. "Irradiation effects in carbon and boron-nitride nanomaterials", First Joint Workshop of Chinese and Finnish Graduate Schools, Beijing, China, May 20-22, 2009.
16. "Simulations of irradiation effects in graphene and related materials", Computational Challenges and Tools for Nanotubes (CCTN09), Beijing, China, June 2009.
17. "Defects in carbon nanomaterials", International Conference "NanoteC09", Brussels, Belgium, August 2009. <http://www.britishcarbon.org/nanotec/programme/index.html>

18. "Defects in carbon nanomaterials", International Workshop "Computational physics and chemistry of graphene", Lausanne, Switzerland, October 2009.
19. "Defects in graphene" Workshop on graphene, Copenhagen, Denmark, March 2010.
20. "Electron-beam engineering of nanomaterials and their interfaces" NanoTP kick-off meeting, Berlin, Germany March 2010.
21. "Irradiation effects in carbon nanomaterials", International Conference "Ion beam Science and Technology – Looking Ahead", Huntsville, USA, August 4-7, 2010.
22. "Irradiation effects in carbon nanomaterials" Workshop on "Dynamical processes in irradiated materials", July 26-28, San Sebastian, Spain.
23. "Transition metal impurities in graphene", Gordon Research Conference, New London, USA, August 8-13, 2010.
24. "Ion and electron irradiation of graphene" 18th International Workshop on Inelastic Ion-Surface Collisions, Sep.26 – Oct.1, 2010, Gatlinburg, Tennessee, USA.
25. "Irradiation effects in carbon and BN nanomaterials", International workshop "Atomic defects in low-dimensional materials", Kyoto, Japan, 27-29.10.2010.
26. "Irradiation-induced transformations in nanomaterials", Spring 2011 Materials Research Society Meeting, April 2011, San Francisco, USA.
27. "Electronic structure and transport in graphene and boron-nitride systems modified by electron irradiation", CECAM workshop "Charge and Spin Transport in Chemically Modified Graphene based Materials", Barcelona, Spain, April 2011.
28. "Irradiation-mediated engineering of nanomaterials" NanoTP meeting Keynote speaker, L'Acquila, Italy, May 2011.
29. "Irradiation-induced transformations in nanomaterials", Spring 2011 European Materials Research Society Meeting, May 2011, Nice, France.
30. "Radiation modification of nanomaterials for creation of novel nanodevices" NATO Advanced Research Workshop, June 2011 Riga, Latvia.
31. "Engineering carbon nanostructures with electron and ion beams", International workshop "Carbonhagen", August 2011, Copenhagen, Denmark.
32. "Ion and electron irradiation of graphene" 14th International Workshop "Nano-Design, Technology, Computer Simulations" (NDTCS-2011) August 22-26, 2011, Espoo, Finland.
33. "Irradiation-induced transformations in nanomaterials", Specialist Meeting on Carbon, September 2011, Puerto Vallarta, Mexico.
34. "Bonding and irradiation effects in inorganic 2D materials", Annual scientific meeting of NanoTP COST action, November 9-11, 2011, Trieste, Italy
35. "Irradiation effects in nanostructures", Fall 2011 Materials Research Society Meeting, November 2011, Boston, USA.
36. "Tailoring the properties of graphene, dichalcogenides and other 2D materials through electron irradiation: insight from DFT simulations and TEM experiments", Graphene, Brussels, April 2012.
37. "Irradiation-induced defects in graphene and inorganic 2D materials for selective functionalization of their surfaces", CECAM workshop "Chemical and topological functionalization of graphitic surfaces: open challenges for computational modeling", Lausanne, Switzerland, 23-25 April 2012.
38. "Novel two-dimensional phases of carbon and silica from experiments and simulations", International Conference on Modern Problems in the Physics of Surfaces and Nanostructures, Yaroslavl, Russia, 23-25 May 2012. <http://www.yf-ftian.ru/icmpsn/maineng.htm>
39. COST NanoTP Meeting "Quantum-chemical modelling of large nanostructures", Aveiro, June 6-9th 2012 <http://modnano.web.ua.pt/workshop/>
40. "Irradiation of graphene" European workshop on epitaxial graphene, Aussois, France, January 27-30, 2013, <http://eweg.neel.cnrs.fr/>

About 30 invited seminars worldwide.

#### PERSONAL AWARDS/GRANTS RECEIVED

- |           |  |
|-----------|--|
| 1993-1995 | Individual grant and Certificate of Qualification from the Humantech Scholarship, <b>Samsung Electronics Corporation (South Korea)</b> . |
| 1994-1995 | Individual post-graduate grant No A44-F from the <b>International</b>  |

- George Soros Science Foundation (ISSEP).**
- 1997-2000 Individual grant from the **Russian Academy of Sciences** "Young Scientists of Russia".
- 2001-2003 Travel grants from the **Magnus Ehrnrooths Foundation (Finland).**
- 2003 Travel grant from the **Väisälä Foundation (Finland).**
- 2005 Travel grant from the Väisälä Foundation (Finland).
- 2005 Academy Fellow (temporary) position, Academy of Finland, ca 64 kEuro.
- 2006 Research/travel grant from Academy of Finland and DAAD (Deutscher Akademischer Austauschdienst), project leaders Docent A. Krashennikov (Finland) and Professor F. Banhart (Germany).
- 2007 Grant from the **Magnus Ehrnrooths Foundation (Finland)** for the organization of International workshop "Towards reality in nanoscale materials" Levi, Finland, 10-12 December 2007,
- 2008 Research/travel grant from the **Academy of Finland** "Irradiation effects in boron nitride nanotubes".  
Grant from the **European Science Foundation** for the organization of International workshop "Irradiation effects and defects in nanoscale materials" Levi, Finland, 02-04 December 2008.
- 2008-2009 Research/ collaboration grant from the **Magnus Ehrnrooths Foundation (Finland)** for collaboration with Prof. Florian Banhart, University of Strasbourg, France. 12 kEuro  
CECAM network grant for organization of a workshop "Computational Studies of Defects in Nanoscale Carbon Materials", Lausanne, Switzerland, May 2009. 15 kEuro.  
Psi-K grant for organization of a workshop "Computational Studies of Defects in Nanoscale Carbon Materials" Lausanne, Switzerland, May 2009.
- 2009-2012 Research/ collaboration grant from the **Academy of Finland** "Defect-Mediated Engineering of Carbon Nano-Materials", ca. 210 kEuro after subtraction of overhead costs.
- 2010 Grant from the **Väisälä Foundation (Finland)** the organization of International workshop "Towards reality in nanoscale materials" Levi, Finland, 2010.  
Grant from the **Finnish Cultural foundation** for the organization of International workshop "Towards reality in nanoscale materials" Levi, Finland, 2010.
- 2011-2013 Research grant from the **Academy of Finland** "Irradiation effects in low-dimensional materials" ca. 240 kEuro.
- 2011-2012 Research/travel grant from the **Academy of Finland** Understanding the nature of grain boundaries in graphene from experiments and simulations, 11 kEuro.

#### CONFERENCE ORGANIZATION:

- Co-organizer: EMRS Fall Meeting, Symposium G, "Graphene, nanotubes and related materials", Warsaw, Poland, September 17-21, 2012.
- Co-chairman: International workshop "Atomic structure of nanosystems from first-principles simulations and microscopy experiment", Helsinki, 15.05-17.05.2012.
- Co-chairman; International workshop "Towards Reality in Nanoscale Materials 12" Levi, Finland, 22-24 February 2012
- Co-chairman: International workshop "Atomic structure of nanosystems from transmission electron microscopy experiments and first-principles simulations", Helsinki, 31.05-02.05.2011.
- Co-chairman; International workshop "Towards Reality in Nanoscale Materials 10" Levi, Finland, 06-09 December 2010.
- Chairman; First Finnish-Japanese workshop on carbon and boron-nitride nanomaterials, Helsinki, Finland, 18-20 May 2010.
- Co-chairman; International workshop "Towards Reality in Nanoscale Materials 09" Levi, Finland, 06-09 December 2009.
- Co-organizer; "Computational Nanoscience for Renewable Energy solutions," Espoo, Finland, September 2009.

- Co-chairman; International workshop “Defects in nanoscale carbon materials” Lausanne, Switzerland, May 11-15, 2009.
- Co-chairman; International workshop “Irradiation effects and defects in nanoscale materials” Levi, Finland, 02-05 December 2008.
- Co-chairman; International workshop “Towards reality in nanoscale materials” Levi, Finland, 10-12 December 2007,
- Co-chairman; International workshop on physics and chemistry of carbon nanotubes, Helsinki, 2004.

#### REFEREE FOR SCIENTIFIC JOURNALS AND PROJECT EVALUATION:

Phys. Rev. Lett., Phys. Rev. B, PNAS, Nano Letters, JACS, ACS Nano, Appl. Phys. Lett., J. Appl. Phys., Carbon, Physica E, Materials Science and Engineering B, Physics of Low-Dimensional Structures, Scripta Materialia, European J. of Physics, Physica Status Solidi, Applied Physics A, Diamond and Related Materials, Nanotechnology, J. Phys. Chem. B, J. Phys. Chem. C, J. of Phys. and Chem. of Solids, Crystal Growth and Design, J. Materials Research, Rad. Effects and Defects in Solids, Nanoscale, J. Nanomaterials. J. Magnetism and Magnetic Materials, Chem. Phys. Lett., Nucl. Inst. and Meth. Phys. B, New J. Phys., J. Phys. Cond. Matt., Acta Materialia, J. Vac. Sci. Tech. B., J. Chem. Phys.

**Evaluator of proposals:** European Science Foundation, the Government of Russian Federation, Science Foundation Ireland (Ireland), Petroleum Research Fund (USA), Vienna Science and Technology Fund (Austria), Swiss Center for Supercomputing, The German-Israeli foundation for scientific research and development.

#### OTHER ADMINISTRATIVE DUTIES:

Member of the Editorial Board of Journal of Computational and Theoretical Nanoscience

Member of the Management Committee of COST action MP0901 “Designing novel materials for nanodevices: From Theory to Practice (NanoTP)”

#### TEACHING EXPERIENCE AND GRADUATE SUPERVISION

- "Introduction to electronic structure simulations", Aalto University, 2010, lectures (in English).
- Condensed Matter Theory (one of the lecturers) 2010 (in English).
- Computational Nanoscience (one of the lecturers) 2010, 2011 (in English).
- "Introduction to electronic structure simulations", Helsinki University of Technology, 2008, lectures (in English).
- "Introduction to electronic structure simulations", Helsinki University of Technology, 2006 (<http://www.fyslab.hut.fi/~asf/physics/lectures/>), lectures and exercises (in English).
- "Materials Physics II", Helsinki University of Technology, 2005, lectures (in English).
- "Introduction to electronic structure calculations", University of Helsinki, 2002 (<http://www.acclab.helsinki.fi/~akrashen/esctmp.html>), lectures and exercises (in English).
- Nanoscience (one of the lecturers), University of Helsinki, 2005-2011 (in English)..
- "Theoretical superconductivity", Moscow State Engineering Physics Institute, 1999-2000, lectures and exercises (in Russian).
- "Computational Physics"; Moscow State Engineering Physics Institute, 1998-2000, lectures and exercises (in Russian).
- "Physics of phase transitions", Moscow State Engineering Physics Institute, 1999, lectures and exercises (in Russian).

Supervised/co-supervised works of 5 Ph.D. students and 7 M. Sc. Students.

#### PERSONAL DATA

Date and place of birth:	December 13, 1967, Moscow, Russia
Sex:	Male
Citizenship:	Russian
Marital status:	Married
Children:	2 children (born 2005, 2006)
Languages:	Russian (native), English (fluent), German (basic).
Military service:	1986-1988 (two full years), military rank - sergeant.

**Summary**

- Total number of publications in **refereed** journals – 116
- Among them:
  - Science (1),
  - Nature Materials (1),
  - Nature Nanotechnology (1),
  - Nature Physics (1)
  - Phys. Rev. Lett. (13),
  - Nano Letters (3)
  - ACS Nano (2)
  - Small (1)
  - Appl. Phys. Lett. (4),
  - Phys. Rev. B (25)
- 4 book chapters
- PDF reprints available from:  
<http://www.acclab.helsinki.fi/~akrashen/publist.html>
- 6 papers under review (not counted below)

**All publications in peer refereed journals in the reverse chronological order:**

116. S. Kurasch, J. Kotakoski, O. Lehtinen, V. Skakalova, J.H. Smet, C. Krill, **A.V. Krasheninnikov**, and U. Kaiser "Atom-by-Atom Observation of Grain Boundary Migration in Graphene", Nano Letters (2012) in press.
115. T. Björkman, A. Gulans, **A. V. Krasheninnikov**, and R.M. Nieminen "Van der Waals bonding in layered compounds from advanced first-principles calculations", Phys. Rev. Lett. (2012) in press.
114. J.C. Meyer, F. Eder, S. Kurasch, V. Skakalova, J. Kotakoski, H.J. Park, S. Roth, A. Chuvilin, S. Eyhusen, G. Benner, **A.V. Krasheninnikov**, and U. Kaiser "An accurate measurement of electron beam induced displacement cross sections for single-layer graphene", Phys. Rev. Lett. (2012) in press.
113. J. A. Rodríguez-Manzo, **A.V. Krasheninnikov**, and F. Banhart, "Engineering the atomic structure of carbon nanotubes by a focused electron beam: new morphologies at the sub-nanometer scale", ChemPhysChem. (2012) in press.
112. P. Y. Huang, S. Kurasch, A. Srivastava, V. Skakalova, J. Kotakoski, **A. V. Krasheninnikov**, R. Hovden, Q. Mao, J. C. Meyer, J. H. Smet, D.A. Muller, and U. Kaiser, "Direct Imaging of a Two-Dimensional Silica Glass on Graphene", Nano Letters 12 (2012) 1081.
111. S. Riikonen, **A. V. Krasheninnikov**, L. Halonen, R. M. Nieminen, "The role of stable and mobile carbon adspecies in copper-promoted graphene growth, J. Phys. Chem. C 116 (2012) 5802.

110. J. Kotakoski, D. Santos-Cottin, and **A. V. Krasheninnikov**, “Stability of graphene edges under electron beam: equilibrium energetics vs. dynamic effects”, *ACS Nano*, 6 (2012) 671.
109. R. R. Nair, M. Sepioni, I-Ling Tsai, O. Lehtinen, J. Keinonen, **A. V. Krasheninnikov**, T. Thomson, A. K. Geim, I. V. Grigorieva, “Spin-half paramagnetism in graphene induced by point defects”, *Nature Physics* 8 (2012) 199.
108. N. Berseneva, **A. V. Krasheninnikov**, and R.M. Nieminen, Reply to comment on "Mechanisms of post-synthesis doping of boron-nitride nanostructures with carbon from first-principles simulations", *Phys. Rev. Lett.* 107 (2011) 239602.
107. A.V. Talyzin, I.V. Anoshkin, **A. V. Krasheninnikov**, R.M. Nieminen, A.G. Nasibulin, H. Jiang, and E.I. Kauppinen "Synthesis of Graphene Nanoribbons Encapsulated in Single-Walled Carbon Nanotubes" *Nano Letters* 11 (2011) 4352.
106. N. Berseneva, **A. V. Krasheninnikov**, and R.M. Nieminen "Mechanisms of post-synthesis doping of boron-nitride nanostructures with carbon from first-principles simulations", *Phys. Rev. Lett.* 107 (2011) 035501.
105. J. Kotakoski, J. C. Meyer, S. Kurasch, D. Santos-Cottin, U. Kaiser and **A. V. Krasheninnikov**, "Stone-Wales–type transformations in carbon nanostructures driven by electron irradiation", *Phys. Rev. B* 83 (2011) 245420.
104. A. Gulans, **A.V. Krasheninnikov**, M. J. Puska, and R. M. Nieminen "Bound and free self-interstitials in graphite and bilayer graphene: a computational study" *Phys. Rev. B* 84 (2011) 024114.
103. O. Lehtinen, T. Nikitin, **A.V. Krasheninnikov**, L. Sun, F. Banhart, L. Khriachtchev, and J. Keinonen “Characterization of ion-irradiation-induced defects in multi-walled carbon nanotubes”, *New J. Phys.* 13 (2011) 073004.
102. J. Kotakoski, **A. V. Krasheninnikov**, U. Kaiser and J.C. Meyer, “Two-dimensional amorphous carbon: step-by-step transformation from graphene”, *Phys. Rev. Lett.* 106 (2011) 105505.
101. O. Lehtinen, J. Kotakoski, **A. V. Krasheninnikov**, and J. Keinonen, “Cutting and controlled modification of graphene with ion beams”, *Nanotechnology* 22 (2011) 175306.
100. K. Nordlund, C. Bjorkas, K. Vortler, A. Lasa, M. Mehine, A. Meinander, **A. V. Krasheninnikov**, “Mechanism of swift chemical sputtering: comparison of Be/C/W dimer bond breaking”, *Nucl. Instr. and Meth. Phys. Res. B.* 269 (2011) 1257.
99. H. Ahlgren, J. Kotakoski and **A.V. Krasheninnikov**, “Atomistic simulations of the implantation of low-energy boron and nitrogen ions into graphene”, *Phys. Rev. B.* 83 (2011) 115424.
98. **A. V. Krasheninnikov** and R. M. Nieminen, “Attractive interaction between transition-metal atom impurities and vacancies in graphene: a first-principles study” *Theoretical Chemistry Accounts* 129 (2011) 625.
97. F. Banhart, J. Kotakoski, **A. V. Krasheninnikov**, “Structural Defects in Graphene”, *ACS Nano*, 5 (2011) 26.
96. O. Lehtinen, E. Dumur, J. Kotakoski, **A. V. Krasheninnikov**, K. Nordlund, and J. Keinonen, “Production of defects in hexagonal boron nitride monolayer under ion irradiation”, *Nucl. Instr. and Meth. Phys. Res. B.* 269 (2011) 1327.
95. O. Cretu, **A.V. Krasheninnikov**, J.A. Rodríguez-Manzo, L. Sun, R.M. Nieminen, and F. Banhart “Migration and localization of metal atoms on strained graphene”, *Phys. Rev. Lett.* 105 (2010) 196102.

94. S. Riikonen, **A. V. Krasheninnikov**, R. M. Nieminen, "Sub-monolayers of carbon on alpha-iron facets: an ab-initio study" *Phys. Rev. B* 82 (2010) 125459.
93. I.C. Gerber, **A.V. Krasheninnikov**, A.S. Foster, and R.M. Nieminen "Ab initio study of magnetic coupling between carbon adatoms on carbon-based nanostructures", *New J. Phys.* 12 (2010) 113021.
92. J. Kotakoski, C. H. Jin, O. Lehtinen, K. Suenaga, and **A. V. Krasheninnikov** "Electron knock-on damage in hexagonal boron nitride monolayers", *Phys. Rev. B* 82 (2010) 113404.
91. E. Holmström, L. Toikka, **A. V. Krasheninnikov**, and K. Nordlund "Response of mechanically strained nanomaterials to irradiation: Insight from atomistic simulations" *Phys. Rev. B* 82 (2010) 045420.
90. O. Lehtinen, J. Kotakoski, **A.V. Krasheninnikov**, A. Tolvanen, K. Nordlund and J. Keinonen, "Effects of ion bombardment on a two-dimensional target: atomistic simulations of graphene irradiation", *Phys. Rev. B* 81 (2010) 125442.
89. J.A. Rodríguez-Manzo, A. Tolvanen, **A.V. Krasheninnikov**, K. Nordlund, A. Demortière and Florian Banhart, "Defect-induced junctions between single- or double-wall carbon nanotubes and metal crystals" *Nanoscale* 2 (2010) 901.
88. S. Riikonen, A.S. Foster, **A. V. Krasheninnikov**, and R. M. Nieminen "Boron nitride formation on magnesium: an ab-initio study" *Phys. Rev. B* 81 (2010) 125442.
87. Wei Zhang, Litao Sun, Zijian Xu, **A.V. Krasheninnikov**, Ping Huai, Zhiyuan Zhu, and F. Banhart, "Migration of gold atoms in graphene ribbons: the role of the edges", *Phys. Rev. B* 81 (2010) 125425.
86. **A. V. Krasheninnikov** and K. Nordlund, "Ion and electron irradiation-induced effects in nanostructured materials", *J. Appl. Phys.* 107 (2010) 071301.
85. A. Tolvanen, **A. V. Krasheninnikov** and K. Nordlund, "Effect of iron nanoparticle geometry on the energetics of carbon interstitials" *Phys. Stat. Sol. C* 4 (2010) 1274.
84. E. Holmström, **A. V. Krasheninnikov**, and K. Nordlund, "Quantum and Classical Molecular Dynamics Studies of the Threshold Displacement Energy in Si Bulk and Nanowire", *Mat. Res. Soc. Symp. Proc.* 1181 (2010) DD05-02.
83. O. Lehtinen, T. Nikitin **A.V. Krasheninnikov**, Litao Sun, L. Khriachtchev, F. Banhart, T. Terao, D. Golberg, and J. Keinonen, "Ion irradiation of multi-walled boron nitride nanotubes", *Phys. Stat. Sol. C* 4 (2010) 1256.
82. J.A. Rodríguez-Manzo, I. Janowska, Cuong Pham-Huu, A. Tolvanen, **A.V. Krasheninnikov**, K. Nordlund, and F. Banhart "Growth of Single-Walled Carbon Nanotubes from Sharp Metal Tips", *Small* 5 (2009) 2710.
81. S. Riikonen, A. S. Foster, **A. V. Krasheninnikov**, and R.M. Nieminen, "Computational study of boron nitride nanotube synthesis: how catalyst morphology stabilizes the boron-nitride bond", *Phys. Rev. B* 80 (2009) 155429.
80. **A. V. Krasheninnikov**, P.O. Lehtinen, A.S. Foster, P. Pyykkö, and R.M. Nieminen, "Embedding transition-metal atoms in graphene: Structure, bonding, and magnetism", *Phys. Rev. Lett.*, 102 (2009) 126807.
79. A. Tolvanen, G. Buchs, P. Ruffieux, P. Gröning, O. Gröning, and **A. V. Krasheninnikov** "Modifying the electronic structure of semiconducting carbon nanotubes by Ar ion irradiation", *Phys. Rev. B* 79 (2009) 125430.
78. M. Hulman, V. Skakalova, **A.V. Krasheninnikov**, and S. Roth, "Effects of ion beam heating on Raman spectra of single-walled carbon nanotubes", *Appl. Phys. Lett.* 94 (2009) 071907.

77. L. Sun, **A.V. Krasheninnikov**, T. Ahlgren, K. Nordlund, and F. Banhart, "Plastic deformation of single nanometer-sized crystals", *Phys. Rev. Lett.*, 101 (2008) 156101.
76. V. Skakalova, A.B. Kaiser, U. Dettlaff, K. Arstila, **A.V. Krasheninnikov**, J. Keinonen, and S. Roth, "Electrical properties of C4+ irradiated single-walled carbon nanotube paper", *Physica Status Solidi (b)*, 5 (2008) 1828--1851.
75. Y. Gan, J. Kotakoski, **A. V. Krasheninnikov**, K. Nordlund and F. Banhart "The diffusion of carbon atoms inside carbon nanotubes", *New J. Phys.* 10 (2008) 0230226.
74. **A. V. Krasheninnikov**, A.S. Foster and R.M. Nieminen, "Comment on Paired Gap states in a Semiconducting Carbon Nanotube: Deep and Shallow Levels", *Phys. Rev. Lett.*, 99 (2007) 179703.
73. A. Tolvanen, J. Kotakoski, **A. V. Krasheninnikov** and K. Nordlund "Relative abundance of single and double vacancies in irradiated single-walled carbon nanotubes", *Appl. Phys. Lett.* 91 (2007) 173109.
72. **A. V. Krasheninnikov** and F. Banhart, "Engineering of nanostructured carbon materials with electron or ion beams," *Nature Materials*, 6 (2007) 723.
71. G. Buchs, **A. V. Krasheninnikov**, P. Ruffieux, A.S. Foster, R.M. Nieminen, and O. Gröning "Engineering the electronic structure of semiconducting carbon nanotubes by hydrogen plasma treatment", *New Journal of Physics*, 9 (2007) 275.
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