

# Curriculum Vitae

## Ruslan Ilyich Mukhamadiarov

Graduate Student, current GPA: 3.56

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### (a) Research Interests

I explore the dynamics of non-equilibrium systems as they harbor unexpected and even novel physical phenomena. Discerning the right physics in these complex systems is a challenging task, and I use modern theoretical methods and computer simulations to approach it. Currently, I investigate driven diffusive systems with attractive interactions, and in the future I plan to explore the dynamical features of "magnetic hedgehogs" or skyrmions.

### (b) Professional Preparation

Saint Petersburg LETI University (Russia)	Materials Science	B.S., 2014
Saint Petersburg State University (Russia)	Condensed Matter	M.S. (with distinction), 2016
Virginia Tech	Theoretical Physics	Ph.D., 2016-present

### (c) Appointments

Research and Teaching Assistant	Department of Physics, Virginia Tech	2016-present
Research Assistant	Theoretical Division, Ioffe Institute (Russia)	2014-2016
Laboratory Assistant	Saint Petersburg State University (Russia)	2014-2015

### (d) Awards and Fellowships

- April 2019: Clayton Williams Fellowship, Department of Physics at Virginia Tech
- June 2016: Saint Petersburg State University: graduated with Distinction
- April 2015: EducationUSA Opportunity Funds Scholarship, US Department of Education
- June 2014: Saint Petersburg LETI University: Departmental award for Outstanding Thesis in Materials Science

### (e) Publications

1. R. Mukhamadiarov, Priyanka, and U. C. Täuber, *Transverse temperature interfaces in the Katz-Lebowitz-Spohn driven lattice gas*, in preparation;
2. S. Kitorov and R. Mukhamadiarov, *Electromagnetic radiation by electrons in corrugated graphene*, Semiconductors **50**, 1060-1064 (2016);
3. D. Yu. Podorozhkin, E. V. Charnaya, A. Antonenko, R. Mukhamadiarov, V. V. Marchenkov, S. V. Naumov, J. C. A. Huang, H. W. Weber, and A. S. Bugaev, *Nuclear magnetic resonance study of a  $\text{Bi}_2\text{Te}_3$  topological insulator*, Physics of the Solid State **57**, 1741-1745 (2015).

## (f) Conference Presentations

1. American Physical Society (APS) March Meeting 2019, Boston, MA, contributed talk "*Transverse temperature interfaces in the Katz-Lebowitz-Spohn driven lattice gas*";
2. 85th Annual Meeting of the APS Southeastern Section (SESAPS), Knoxville, TN, Nov. 2018, contributed talk "*Transverse temperature interfaces in the Katz-Lebowitz-Spohn driven lattice gas*";
3. 6th Virginia Soft Matter (VSM) Workshop, Blacksburg, VA, Sep. 2018, sound bite presentation "*Transverse temperature interfaces in the Katz-Lebowitz-Spohn driven lattice gas*";
4. 3rd Center for Soft Matter and Biological Physics (CSMB) Annual Symposium, Blacksburg, VA, May 2018, poster "*Temperature interface effects in driven lattice gas systems*";
5. 12th Advanced Carbon Nanostructures (ACNS) International Conference, Russia, July 2015, contributed talk "*Electromagnetic radiation by electrons in corrugated graphene*";
6. Science and Progress International Student Conference, Saint Petersburg State University, Russia, Nov. 2014, poster "*Electromagnetic radiation by electrons in corrugated graphene*".

## (g) Collaborators and Research Advisors

### (i) Collaborators

A. Antonenko (Saint Petersburg State University, Russia), A. S. Bugaev (Moscow Institute of Physics and Technology, Russia), E. V. Charnaya (Saint Petersburg State University, Russia), J. C. A. Huang (National Cheng Kung University, Taiwan), S. A. Kitorov (Saint Petersburg LETI University & Ioffe Institute, Russia), V. V. Marchenkov (Institute of Metal Physics & Ural Federal University, Russia), S. V. Naumov (Institute of Metal Physics, Russia), D. Yu. Podorozhkin (Saint Petersburg State University, Russia), Priyanka (Virginia Tech), U. C. Täuber (Virginia Tech), H. W. Weber (Vienna University of Technology, Austria).

### (ii) Research advisors

Ph.D. advisor: Uwe C. Täuber, Virginia Tech  
M.S. advisor: Elena V. Charnaya, Saint Petersburg State University, Russia  
B.S. advisor: Sergey A. Kitorov, Saint Petersburg LETI University, Russia

## (h) Mentoring

In Summer 2018, I supervised the research process of undergraduate student Andrew Harrison, who came to Virginia Tech from New College of Florida. During his visit he explored the novel research avenues in statistical physics, and he devised a new effective algorithm for analyzing the research data. Andrew's stay at Virginia Tech was funded through a U.S. Army Research Office (ARO) grant supplement through the Broad Agency Announcement (BAA) Undergraduate Research Apprenticeship Program (URAP).

## (i) Community Service

- 2018–2019: Department of Physics delegate to Virginia Tech Graduate Student Assembly (GSA)