

Maria Kamenetska, PhD

Department of Chemistry
Department of Physics
Division of Material Science and Engineering
Boston University

Phone: 617-358-3334
Email: mkamenet@bu.edu
24 Cummington Mall, #907
Boston, MA 02215

Education

02/2012 **Ph.D. with Distinction in Applied Physics**, Columbia University
Doctoral Thesis: "Single Molecule Junction Conductance and Binding Geometry"
PhD Supervisor: Latha Venkataraman
02/2008 **M.S. in Applied Physics**, Columbia University
06/2005 **B.S. in Physics**, Massachusetts Institute of Technology

Employment

7/2017-Present **Assistant Professor of Chemistry**
Assistant Professor of Physics
Assistant Professor of Material Science and Engineering, Boston University,
Boston, MA

2/2015-3/2017 **Postdoctoral Associate** in Chemistry, Yale University, New Haven, CT

1/2012-1/2014 **NSF Postdoctoral Fellow**, Departments of Molecular Biophysics & Biochemistry,
Physics, Yale University, New Haven, CT

Honors & Awards

01/2014 **Scientific Teaching Fellow**, Yale University, Center for Teaching and Learning
10/2013 **Postdoctoral Scholar Travel Fund Award**, Yale University, School of Arts and
Science
05/2012 **Robert Simon Memorial Prize for best PhD**, Department of Applied Physics,
Columbia University
02/2012 **PhD with Distinction**, Columbia University
03/2011 **National Science Foundation Postdoctoral Fellowship in Biology**
03/2011 **Burroughs Welcome Fund Collaborative Research Travel Grant**
03/2010 **APS Ovshinsky Student Award**, American Physical Society Division of Materials
Physics, American Physical Society March 2010 Meeting
05/2009 **Brookhaven National Lab NSLS/CFN Poster Session Winner**
05/2005 **MIT Peter J. Eloranta Summer Undergraduate Research Fellowship**
05/2005 **MIT Laya and Jerome B. Wiesner Student Award**

Teaching

Fall 2017 **Instructor for PY313 Modern Physics**, for non-physics majors at the upper
undergraduate level (20 undergraduates), Department of Physics, BU.

Spring 2012-2014 **Lab Teaching Assistant, Methods in Biophysics (2-8 graduate students)**, Yale
University, Graduate Program in Physical and Engineering Biology.

Spring 2008 **Teaching Assistant Applied Mathematics II: Introduction to Partial Differential**
Equations
Spring 2007 **Teaching Assistant in Introduction to Biophysical Modeling**
Fall 2006 **Teaching Assistant in Applied Mathematics I**, Introduction to Linear Algebra
Columbia University, Department of Applied Physics and Applied Math.

Publications

- J. Black, **M. Kamenetska**, Z. Ganim, *An Optical Tweezer Platform for Single Molecule Force Spectroscopy in Organic Solvents*, **Nano Lett.** (2017)
- M. Kamenetska**, J. Widawsky, M. Dell'angela, M. Frei, L. Venkataraman; *Temperature Dependent Conductance of Single Molecule Junctions*, **J. Phys. Chem.**, 146, 092311, (2017)
- DJ Schlingman, AH Mack, **M Kamenetska**, SGJ Mochrie, L Regan, *Routes to DNA Accessibility: Alternative Pathways to Nucleosome Unwinding*, **Biophys J**, 107 (2) 384-392 (2014)
- G. Kladnik, D. Cvetko, A. Batra, M. Dell'Angela, A. Cossaro, **M. Kamenetska**, L.Venkataraman, A. Morgante, *Ultrafast Charge Transfer through Noncovalent Au-N Interactions in Molecular Systems*, **J. Phys. Chem. C**, 117, 16477-16482, (2013)
- AH Mack, DJ Schlingman, **M Kamenetska**, R Collins, L Regan, SGJ Mochrie, *The Molecular Yo-yo Method: Live Jump Detection Improves Throughput of Single-Molecule Force Spectroscopy for Out-of-Equilibrium Transitions*, **Rev. Sci. Instrum.**, 84, 085119, (2013)
- H. Vazquez, R. Skouta, S. Schneebeli, **M. Kamenetska**, R. Breslow, L. Venkataraman, MS. Hybertsen, *Probing the conductance superposition law in single-molecule circuits with parallel paths*, **Nature Nanotech**, 7, 663-667, (2012)
- M. Kamenetska.**; M. Dell' Angela; Widawsky, J.; Kladnik, G.; Verdini, A; Cossaro, A.; Modesti, S.; Cvetko, D.; Morgante, A.; Venkataraman, L. *Structure and Energy Level Alignment of Tetramethyl Benzenediamine on Au(111)*, **J. Phys. Chem. C**, 111, 12625-12630, (2011)
- Meisner, J. S[†]; **Kamenetska, M.**[†]; Krikorian, M.; Sedbrook, D. F.; Steigerwald, M. L; Venkataraman, V.; Nuckolls, C., *Single Molecule Potentiometer*, **Nano Letters**, 11, 1575-1579, (2011). [†] **Both authors contributed equally**
- Schneebeli, S.T.; **Kamenetska, M.**; Cheng, Z.; Skouta, R.; Friesner, R.A.; Venkataraman, L.; Breslow, R, *Single Molecule Conductance through multiple π - π stacked benzene rings determined with direct electrode to benzene ring connections*, **JACS**, 133 (7) , 2136-2139, (2011).
- Fatemi, V.; **Kamenetska, M.**; Neaton, J. B.; Venkataraman, L.; *Environmental Control of Molecular Scale Transport*, **Nano Lett.** 11 (5), 1988-1992, (2011).
- Schneebeli, S.; **Kamenetska, M.**; Foss, F.; Vazquez, H.; Skouta, R.; Hybertsen, M.; Venkataraman, L.; Breslow, R. *The Electrical Properties of Biphenylenes*, **Organic Lett**, 12, (18), 4114-4117 (2010).
- Kamenetska, M.**; Quek, S. Y.; Whalley, A. C.; Steigerwald, M. L.; Choi, H. J.; Louie, S. G.; Nuckolls, C.; Hybertsen, M. S.; Neaton, J. B.; Venkataraman, L. *Conductance and Geometry of Pyridine-Linked Single-Molecule Junctions*, **JACS**, 132, (19), 6817-6821, (2010).
- Dell'Angela, M.; Kladnik, G.; Cossaro, A.; Verdini, A.; **Kamenetska, M.**; Tamblyn, I.;

Quek, S. Y.; Neaton, J. B.; Cvetko, D.; Morgante, A.; Venkataraman, L, *Relating Energy Level Alignment and Amine-Linked Molecular Junction Conductance*, **Nano Lett**, *10*, (7), 2470-2474 (2010).

Widawsky, J. R.; **Kamenetska, M.**; Klare, J.; Nuckolls, C.; Steigerwald, M. L.; Hybertsen, M. S.; Venkataraman, L. **Nanotechnology**, *20*, (43) (2009).

Kamenetska, M.; Koentopp, M.; Whalley, A.; Park, Y. S.; Steigerwald, M.; Nuckolls, C.; Hybertsen, M.; Venkataraman, L. *Formation and Evolution of Single-Molecule Junctions*, **Physical Review Letters**, *102*, (12), 126803 (2009).

Park, Y.S.; Widawsky, J.R.; **Kamenetska, M.**; Steigerwald, M.L.; Hybertsen, M.S.; Nuckolls, C.; Venkataraman, L, *Frustrated Rotations in Single Molecule Junctions*, **J. Am. Chem. Soc**, *131*, 10820-10821 (2009).

Quek, S. Y.; **Kamenetska, M.**; Steigerwald, M. L.; Choi, H. J.; Louie, S. G.; Hybertsen, M. S.; Neaton, J. B.; Venkataraman, L. *Mechanically Controlled Binary Conductance Switching in Single Molecule Junctions*, **Nature Nanotech**, *4*, (4), 230-234 (2009).

Park, Y. S.; Whalley, A.; **Kamenetska, M.**; Steigerwald, M. L.; Hybertsen, M. S.; Nuckolls, C.; Venkataraman, L. **J. Am. Chem. Soc**, *129*, (51), 15768-15769 (2007).

Evans, D. A.; Lee, J. C.; **Kamenetska, M.**; Gallagher, S. C.; Kraft, R. P; Hardcastle, M. J; Weaver, K. A. **Astrophysical Journal**, *653* (2), 1121-1128 (2006).

Invited Talks

- 09/2017 **Boston University, Department of Physics**
“Probing Structure-Function Relationships Using Single Molecule Methods”
- 02/2017 **Boston University, Material Science and Engineering**
“Probing Structure-Function Relationships Using Single Molecule methods
- 10/2014 **Williams College, Department of Physics**
“Interpreting Single Molecule Measurements in Material Science and Biology”
- 08/2009 **Leiden University, Leiden Institute of Physics, van der Molen Lab**
“Pyridine Single Molecule Switching—Interplay of Chemistry and Mechanics”