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Education

Ph. D. Physics, The University of Texas at Austin, USA (2008)
Advisor: Dr. Allan H. MacDonald, Thesis title: Possible ordered states in graphene systems

B.S. Physics, Seoul National University, Korea (2001)

Professional Experiences

Associate Professor 09/2015–present
Department of Physics and Astronomy, Seoul National University, Korea

Visiting Scholar 02/2016–01/2017
Department of Physics and Astronomy, University of Pennsylvania, USA

Assistant Professor 09/2011–08/2015
Department of Physics and Astronomy, Seoul National University, Korea

Postdoctoral Researcher 09/2010–08/2011
Dr. Sankar Das Sarma, University of Maryland, USA

Postdoctoral Researcher 09/2008–08/2010
Dr. Mark D. Stiles, National Institute of Standards and Technology, USA

Professional Activities

Referee for Physical Review Letters and Physical Review B (since 2008), Europhysics Letters (since 2009), Journal of Physics: Condensed Matter and D: Appl. Phys. (since 2010), Applied Physics Letters (since 2011), Nature physics (since 2018).

Research Interests

Main field: Condensed matter theory
Current focus: Graphene and 2D layered systems; 3D Dirac materials

Classes Taught

Quantum Physics 1,2 (Spring 2012, Fall 2012, Spring 2013, Fall 2013, Spring 2014, Fall 2014)

Advanced Topics in Condensed Matter Physics: Graphene (Fall 2012)

Many-body Physics 1,2 (Spring 2015, Fall 2015)

Condensed matter physics 1,2 (Spring 2017, Fall 2017, Spring 2018, Fall 2018)

Research Highlights

My primary research interest is modeling condensed matter systems using analytical and numerical approaches, and I have an interest in material properties which may prove to have technological value. My technical experience covers various tools used in condensed matter theory, ranging from numerical electronic structure calculations to more analytical field theoretical approaches.

During my Ph.D. studies done under the supervision of Dr. Allan H. MacDonald at the University of Texas at Austin, first we investigated the influence of spin-orbit coupling on monolayer graphene [2] and the energy gap opening by applying an external electric field in bilayer graphene [3] using a tight-binding model and *ab initio* electronic structure calculations. Next, we studied the electronic structure of multilayer graphene. We developed a simple diagrammatic method to analyze the low-energy properties of arbitrarily stacked graphene sheets [5,8], and proposed an optical method to identify the stacking sequences [10]. We also studied effects of electron-electron interactions and possible ordered states. Using a mean-field theory [4] and perturbative renormalization group theory [11,27], we predicted that neutral graphene bilayers are pseudospin magnets, in which the charge density contribution from each spin and valley spontaneously shifts to one of the two layers. Furthermore, we demonstrated that room-temperature excitonic condensation is possible in graphene double layers [7], suggesting new electronic device applications based on unusual collective transport of bilayer excitonic condensates. The use of collective behavior of many electrons suggests the possibility of a new electronic device scheme called *pseudospintronics*.

After moving to NIST as a postdoctoral researcher working with Dr. Mark D. Stiles, I extended my research to the area of spintronics focusing on the effects of disorder on magnetic domain wall dynamics. We performed micromagnetic simulations in the presence of extrinsic random potential and studied the dynamics of vortex wall propagation driven by fields or currents [13], and vortex gyration driven by magnetic field pulses [17]. We found that the dynamics in the presence of disorder can be understood in terms of an effective damping that increases with the disorder due to the excitement of the internal degrees of freedom in the vortex structure. Next, I joined Dr. Sankar Das Sarma's group at University of Maryland as a postdoctoral researcher. I focused on various electronic, transport and thermodynamic properties in two-dimensional electron systems including graphene and GaAs heterostructures, investigating effects of phonons [18,26], disorder [21,23,24] and electron-electron interactions [25] taking into account many-body corrections within the random phase approximation.

After I joined the Department of Physics and Astronomy at Seoul National University as a faculty member, I am focusing on electronic, optical and transport properties, and interaction effects in two-dimensional layered structures (such as multilayer graphene, transition metal dichalcogenide and black phosphorus) and in three-dimensional topological semimetals (such as Dirac/Weyl semimetals and nodal line semimetals). We expect that the interplay between the chiral electronic structure of electrons and the interactions with light, disorder and other electrons leads to many interesting physics exhibiting a unique quantum response. Currently, we are studying optical and transport properties of various materials focusing on the characteristic frequency dependence [35,41,49] and density/temperature dependence [36,38,48,50] of quantum response functions. We are also investigating the interaction induced effects such as correlation energy [32], collective phenomena [29,33], ordered states [37,39,44] and topological phase transitions [43,47].

Publications

50. Sunghoon Kim, Seungchan Woo, and Hongki Min, *Vertex corrections to the dc conductivity in anisotropic multiband systems*, arXiv:1901.04135 (2019).
49. Jiho Jang, Seongjin Ahn, and Hongki Min, *Optical conductivity of black phosphorus with a tunable electronic structure*, arXiv:1811.07529 (2018), accepted by 2D Materials.
48. Sanghyun Park, Seungchan Woo, and Hongki Min, *Semiclassical Boltzmann transport theory of few-layer black phosphorus in various phases*, 2D Mater. **6**, 025016 (2019).
47. SangEun Han, Changhee Lee, Eun-Gook Moon*, and Hongki Min*, *Emergent anisotropic non-Fermi liquid at a topological phase transition in three dimensions*, arXiv:1809.10691 (2018).
46. Võ Tiên Phong, Zachariah Addison, Seongjin Ahn, Hongki Min, Ritesh Agarwal, and E. J. Mele, *Optically-controlled orbitronics on a triangular lattice*, arXiv:1809.09598 (2018).
45. Dongwook Kim, Seongjin Ahn, Jong Hyun Jung, Hongki Min, Jisoon Ihm, Jung Hoon Han, and Youngkuk Kim, *Type-II Dirac line nodes in strained Na_3N*, Phys. Rev. Materials **2**, 104203 (2018).
44. Sanghyun Park, Hongki Min*, E. H. Hwang*, and S. Das Sarma, *Diluted magnetic Dirac-Weyl materials: Susceptibility and ferromagnetism in three-dimensional chiral gapless semimetals*, Phys. Rev. B **98**, 064425 (2018).
43. Ki Hoon Lee, Changhee Lee, Hongki Min*, and Suk Bum Chung*, *Phase transitions of the polariton condensate in 2D Dirac materials*, Phys. Rev. Lett. **120**, 157601 (2018).
42. H. Kwon, K. Lee, J. Heo, Y. Oh, H. Lee, S. Appalakondaiah, W. Ko, H. W. Kim, J.-W. Jung, H. Suh, Hongki Min, I. Jeon, E. H. Hwang, and S. Hwang, *Characterization of edge contact: Atomically resolved semiconductor-metal lateral boundary in MoS_2*, Adv. Mater. **29**, 1702931 (2017).
41. Seongjin Ahn, E. J. Mele*, and Hongki Min*, *Electrodynamics on Fermi cyclides in nodal line semimetals*, Phys. Rev. Lett. **119**, 147402 (2017).
40. Gyouil Jeong, Boogeon Choi, Deok-Soo Kim, Seongjin Ahn, Baekwon Park, Jin Hyoun Kang, Hongki Min, Byoung-Hee Hong, and Zee Hwan Kim, *Mapping of Bernal and non-Bernal stacking domains in bilayer graphene using infrared nanoscopy*, Nanoscale **9**, 4191 (2017).
39. Hongki Min, E. H. Hwang, and S. Das Sarma, *Ferromagnetism in chiral multilayer two-dimensional semimetals*, Phys. Rev. B **95**, 155414 (2017).
38. Sanghyun Park, Seungchan Woo, E. J. Mele, and Hongki Min, *Semiclassical Boltzmann transport theory for multi-Weyl semimetals*, Phys. Rev. B **95**, 161113(R) (2017).
37. Chiho Yoon, Yunsu Jang, Jeil Jung*, and Hongki Min*, *Broken sublattice symmetry states in Bernal stacked multilayer graphene*, 2D Mater. **4**, 021025 (2017).
36. Seungchan Woo, E. H. Hwang*, and Hongki Min*, *Large negative differential transconductance in multilayer graphene: the role of intersubband scattering*, 2D Mater. **4**, 025090 (2017).
35. Seongjin Ahn, E. J. Mele*, and Hongki Min*, *Optical conductivity of multi-Weyl semimetals*, Phys. Rev. B **95**, 161112(R) (2017).
34. Changhee Lee, Gunn Kim*, Jeil Jung*, and Hongki Min*, *Zero-line modes at stacking faulted domain walls in multilayer graphene*, Phys. Rev. B **92**, 125438 (2016).
33. Seongjin Ahn, E. H. Hwang*, and Hongki Min*, *Collective modes in multi-Weyl semimetals*, Scientific Reports **6**, 34023 (2016).
32. Yunsu Jang, E. H. Hwang, A. H. MacDonald, and Hongki Min, *Stacking dependence of carrier-interactions in multilayer graphene systems*, Phys. Rev. B **92**, 041411(R) (2015).

31. Deok-Soo Kim, Hyeoksang Kwon, Alexey Yu. Nikitin, Seongjin Ahn, Luis Martín-Moreno, Francisco J. García-Vidal, Sun-Min Ryu, Hongki Min, and Zee Hwan Kim, *Stacking structures of few-layer graphene revealed by phase-sensitive infrared nanoscopy*, ACS Nano **9**, 6765 (2015).

30. S. Das Sarma, E. H. Hwang, and Hongki Min, *Carrier screening, transport, and relaxation in three-dimensional Dirac semimetals*, Phys. Rev. B **91**, 035201 (2015).

29. Seongjin Ahn, E. H. Hwang*, and Hongki Min*, *Inelastic carrier lifetime in a coupled graphene/electron-phonon system: Role of plasmon-phonon coupling*, Phys. Rev. B **90**, 245436 (2014).

28. Kayoung Lee, Babak Fallahazad, Hongki Min, and Emanuel Tutuc, *Transport gap in dual-gated graphene bilayers using oxides as dielectrics*, IEEE Transactions on Electron Devices **60**, 103 (2013).

27. Fan Zhang, Hongki Min, and A. H. MacDonald, *Competing ordered states in bilayer graphene*, Phys. Rev. B **86**, 155128 (2012).

26. Hongki Min, E. H. Hwang, and S. Das Sarma, *Interplay between phonon and impurity scattering in two-dimensional hole transport*, Phys. Rev. B **86**, 085307 (2012).

25. Hongki Min, E. H. Hwang, and S. Das Sarma, *Polarizability and screening in chiral multilayer graphene*, Phys. Rev. B **86**, 081402(R) (2012).

24. D. S. L. Abergel, Hongki Min, E. H. Hwang, and S. Das Sarma, *Comparison of microscopic models for disorder in bilayer graphene: Implications for the density of states and the optical conductivity*, Phys. Rev. B **85**, 045411 (2012).

23. D. S. L. Abergel, Hongki Min, E. H. Hwang, and S. Das Sarma, *$d\mu/dn$ in suspended bilayer graphene: the interplay of disorder and band gap*, Phys. Rev. B **84**, 195423 (2011).

22. Bhagawan Sahu, Hongki Min, and Sanjay K. Banerjee, *Edge saturation effects on the magnetism and band gaps in multilayer graphene ribbons and flakes*, Phys. Rev. B **84**, 075481 (2011).

21. Hongki Min, D. S. L. Abergel, E. H. Hwang, and S. Das Sarma, *Optical and transport gaps in gated bilayer graphene*, Phys. Rev. B **84**, 041406(R) (2011).

20. Hongki Min, S. Adam, Young Jae Song, Joseph A. Stroscio, M. D. Stiles, and A. H. MacDonald, *Landau levels and band bending in few-layer epitaxial graphene*, Phys. Rev. B **83**, 155430 (2011).

19. Hongki Min, Parakh Jain, Shaffique Adam, and M. D. Stiles, *Semiclassical Boltzmann transport theory for graphene multilayers*, Phys. Rev. B **83**, 195117 (2011).

18. Hongki Min, E. H. Hwang, and S. Das Sarma, *Chirality-dependent phonon-limited resistivity in multiple layers of graphene*, Phys. Rev. B **83**, 161404(R) (2011).

17. Hongki Min, Robert D. McMichael, Jacques Miltat, and M. D. Stiles, *Effects of disorder on magnetic vortex gyration*, Phys. Rev. B **83**, 064411 (2011).

16. Young Jae Song, Alexander F. Otte, Young Kuk, Yike Hu, David B. Torrance, Phillip N. First, Walt A. de Heer, Hongki Min, Shaffique Adam, Mark D. Stiles, Allan H. MacDonald, and Joseph A. Stroscio, *High-resolution tunnelling spectroscopy of a graphene quartet*, Nature **467**, 185 (2010).

15. Bhagawan Sahu, Hongki Min, and Sanjay K. Banerjee, *Effects of edge magnetism and external electric field on energy gaps in multilayer graphene nanoribbons*, Phys. Rev. B **82**, 115426 (2010).

14. Fan Zhang, Bhagawan Sahu, Hongki Min, and A. H. MacDonald, *Band structure of ABC-stacked graphene trilayers*, Phys. Rev. B **82**, 035409 (2010).

13. Hongki Min, Robert D. McMichael, Michael J. Donahue, Jacques Miltat, and M. D. Stiles, *Effects of disorder and internal dynamics on vortex wall propagation*, Phys. Rev. Lett. **104**, 217201 (2010).

12. Bhagawan Sahu, Hongki Min, and Sanjay Banerjee, *Effects of magnetism and electric field on the energy gap of bilayer graphene nanoflakes*, Phys. Rev. B **81**, 045414 (2010).
11. Fan Zhang, Hongki Min, Marco Polini, and A. H. MacDonald, *Spontaneous inversion symmetry breaking in graphene bilayers*, Phys. Rev. B **81**, 041402(R) (2010).
10. Hongki Min and A. H. MacDonald, *Origin of universal optical conductivity and optical stacking sequence identification in multilayer graphene*, Phys. Rev. Lett. **103**, 067402 (2009).
9. C.-C Joseph Wang, Bhagawan Sahu, Hongki Min, Wei-Cheng Lee, and A. H. MacDonald, *Quantum wells in polar-nonpolar oxide heterojunction systems*, Phys. Rev. B **79**, 115408 (2009).
8. Hongki Min and A. H. MacDonald, *Electronic structure of multilayer graphene*, Prog. Theor. Phys. Suppl. **176**, 227 (2008).
7. Hongki Min, Rafi Bistritzer, Jung-Jung Su, and A. H. MacDonald, *Room-temperature superfluidity in graphene bilayers*, Phys. Rev. B **78**, 121401(R) (2008); See also *Comment on "Electron screening and excitonic condensation in double-layer graphene systems"*, arXiv:0810.0331.
6. Bhagawan Sahu, Hongki Min, A. H. MacDonald, and Sanjay Banerjee, *Energy gaps, magnetism, and electric field effects in bilayer graphene nanoribbons*, Phys. Rev. B **78**, 045404 (2008).
5. Hongki Min and A. H. MacDonald, *Chiral decomposition in the electronic structure of graphene multilayers*, Phys. Rev. B **77**, 155416 (2008).
4. Hongki Min, Giovanni Borghi, Marco Polini, and A. H. MacDonald, *Pseudospin magnetism in graphene*, Phys. Rev. B **77**, 041407(R) (2008).
3. Hongki Min, Bhagawan Sahu, Sanjay K. Banerjee, and A. H. MacDonald, *Ab initio theory of gate induced gaps in graphene bilayers*, Phys. Rev. B **75**, 155115 (2007).
2. Hongki Min, J. E. Hill, N. A. Sinitsyn, B. R. Sahu, Leonard Kleinman, and A. H. MacDonald, *Intrinsic and Rashba spin-orbit interactions in graphene sheets*, Phys. Rev. B **74**, 165310 (2006).
1. N. A. Sinitsyn, J. E. Hill, Hongki Min, Jairo Sinova, and A. H. MacDonald, *Charge and spin Hall conductivity in metallic graphene*, Phys. Rev. Lett. **97**, 106804 (2006).

Books

1. Hongki Min, *Electronic properties of multilayer graphene*, Chapter 11 in *Graphene nanoelectronics: Metrology, synthesis, properties and applications* (Editor: H. Raza), Springer (March 2012).
2. Hongki Min, *Possible ordered states in graphene systems : Electronic structure, pseudospin magnetism and exciton condensation*, VDM Verlag (May 2009).

Invited Talks and Programs

1. KIAS-SNU Physics Winter Camp, Korea Institute of Advanced Study, Seoul, Korea (Dec. 26, 2018 - Jul. 4, 2019, invited as a lecturer), *Many-body physics and linear responses.*
2. Korean Physical Society, Changwon, Korea (Oct. 25, 2018, invited for the focus session, "Quantum Coherence in Condensed Matter"), *Interaction induced broken symmetry states in 2D Dirac materials.*
3. Joint Network Center Workshop, Sungkyunkwan University, Suwon, Gyeonggi-do, Korea (Aug. 24, 2018), *Effects of interactions in topological materials.*
4. International Conference on Science and Technology of Synthetic Metals, Busan, Korea (Jul. 2, 2018), *Characteristic frequency dependence of optical conductivity in topological semimetals.*

5. CCES-IBS, Seoul National University, Seoul, Korea (Jun. 22, 2018), *Optical conductivity of topological semimetals.*
6. Sungkyunkwan University, Suwon, Gyeonggi-do, Korea (Apr. 5, 2018), *Electronic properties of 2D and 3D Dirac materials.*
7. Pohang University of Science and Technology, Pohang, Gyeongsangbuk-do, Korea (Mar. 30, 2018), *Optical and transport properties of topological semimetals.*
8. Korea Institute of Advanced Study, Seoul, Korea (Feb. 12, 2018), *Optical properties of topological semimetals.*
9. Daegu Gyeongbuk Institute of Science and Technology, Daegu, Korea (Nov. 7, 2017), *Electronic properties of 2D and 3D Dirac materials.*
10. Korea Institute of Advanced Study, Seoul, Korea (Jun. 16, 2017), *Optical and transport properties of 3D Dirac materials.*
11. Hanyang University, Seoul, Korea (Mar. 23, 2017), *Electronic properties of 2D and 3D Dirac materials with unconventional topological numbers.*
12. Colloquium at Binghamton University, Binghamton, New York, USA (Oct. 24, 2016), *Optical and transport properties, and interaction effects in 2D and 3D Dirac materials.*
13. Pohang University of Science and Technology, Pohang, Gyeongsangbuk-do, Korea (Jun. 12, 2015), *Effects of electron-electron interactions on chiral multilayer graphene.*
14. 6th IACS-APCTP Joint Conference on Novel Oxide Materials and Low Dimensional Systems, Seoul, Korea (Dec. 18, 2014), *Exchange-correlations and plasmon-phonon coupling in multilayer graphene.*
15. Frontiers in Condensed Matter Physics, Seoul, Korea (Dec. 12, 2014), *Interplay between chiral electronic structure and interactions in multilayer graphene.*
16. USA Korea Conference, San Francisco, California (Aug. 8, 2014), *Single-particle and collective properties of multilayer graphene from the wavefunction rotation method.*
17. 5th IACS-APCTP Joint Conference on Novel Oxide Materials and Low Dimensional Systems, Bangalore, India (Dec. 9, 2013), *Exchange self-energy and compressibility of multilayer graphene by wavefunction rotation method.*
18. Korea Institute of Science and Technology, Seoul, Korea (Aug. 26, 2013), *Pseudospin degrees of freedom in 2D materials.*
19. ICQM Summer School 2013 at Peking University: Novel electronic degrees of freedom, Beijing, China (Jul. 1 - 5, 2013, invited as a lecturer), *Pseudospins in graphene systems.*
20. The International Symposium on Carbon Electronics 2013, Seoul, Korea (May 6, 2013), *Optical properties of multilayer graphene and possible applications to graphene plasmonics.*
21. Korean Physical Society, Daejeon, Korea (Apr. 25, 2013, invited for the focus session, "New physics in two dimensional systems"), *Quasiparticle Properties in Multilayer Graphene.*
22. CTP colloquium at Seoul National University, Seoul, Korea (Nov. 16, 2012), *Screening, collective modes and many-body effects in graphene systems.*
23. 4th APCTP-IACS Joint Conference on Physics of Novel and Emerging Materials, Pohang, Korea (Oct. 30, 2012), *Optical and transport gaps in gated bilayer graphene.*
24. International Conference on Recent Progress in Graphene Research, Beijing, China (Oct. 4, 2012), *Electronic structure engineering by stacking arrangement in multilayer graphene.*

25. KIAS-KAIST Workshop on Quantum transport in correlated systems, Seoul, Korea (Aug. 27, 2012), *Transport and screening properties of multilayer graphene.*
26. USA Korea Conference, Garden Grove, California (Aug. 10, 2012), *Interaction-induced ordered states in multilayer graphene systems.*
27. Colloquium at Seoul National University, Seoul, Korea (May 16, 2012), *Pseudospintronics: a new electronic device scheme in graphene systems.*
28. Korean Physical Society, Daejeon, Korea (Apr. 27, 2012, invited for the pioneering symposium, "Recent research highlights for strongly correlated systems"), *Electronic structure and interaction induced ordered states in multilayer graphene.*
29. Korea Research Institute of Standards and Science, Daejeon, Korea (Apr. 13, 2012), *Optical and transport properties of multilayer graphene.*
30. NUS-SKKU 2nd Joint Workshop on Graphene and 2D Nanomaterials, Suwon, Gyeonggi-do, Korea (Apr. 2, 2012), *Polarizability and screening in chiral multilayer graphene.*
31. Pohang University of Science and Technology, Pohang, Gyeongsangbuk-do, Korea (Mar. 31, 2012), *Optical and transport properties of multilayer graphene.*
32. 4th Korea Graphene Research Society Meeting, Seoul, Korea (Feb. 22, 2012), *Electronic structure and interaction induced ordered states in multilayer graphene.*
33. The Kavli Institute for Theoretical Physics, Santa Barbara, California, USA (Jan. 9 - Feb. 3, 2012), Participated in *The Physics of Graphene* program.
34. Ewha Womans University, Seoul, Korea (Dec. 16, 2011), *Screening in chiral multilayer graphene.*
35. Seoul National University, Seoul, Korea (May 27, 2011), *Pseudospintronics: a new electronic device scheme in graphene systems.*
36. Samsung Advanced Institute of Technology, Yongin, Gyeonggi-do, Korea (Apr. 11, 2011), *Electronic properties of monolayer and multilayer graphene in the presence of magnetic fields.*
37. Yonsei University, Seoul, Korea (Apr. 8, 2011), *Electronic structure and possible ordered states in multilayer graphene.*
38. Pohang University of Science and Technology, Pohang, Gyeongsangbuk-do, Korea (Apr. 7, 2011), *Electronic and transport properties of bilayer graphene.*
39. Korea Institute of Advanced Study, Seoul, Korea (Apr. 5, 2011), *Effects of phonon, impurity and geometric confinement on bilayer graphene.*
40. American Physical Society March Meeting, Dallas, Texas, USA (Mar. 21, 2011, invited for the focus session, "Spin Transport and Magnetization Dynamics in Metal Based Systems"), *Effects of disorder on magnetic vortex dynamics.*
41. Hanyang University, Seoul, Korea (Aug. 24, 2010), *Electronic structure of multilayer graphene.*
42. Korea Institute of Advanced Study, Seoul, Korea (Dec. 15, 2009), *Interplay between chirality and electron-electron interactions in graphene systems.*
43. Korea Institute of Science and Technology, Seoul, Korea (Dec. 14, 2009), *Effects of disorder on domain wall dynamics.*
44. Sungkyunkwan University, Suwon, Gyeonggi-do, Korea (Aug. 12, 2009), *Interplay between chirality and electron-electron interactions in graphene systems.*
45. University of Maryland at College Park, Maryland, USA (Feb. 17, 2009), *Interplay between chirality and electron-electron interactions in graphene systems.*

46. Seoul National University, Seoul, Korea (Aug. 18, 2008), *Possible ordered states in graphene systems.*
47. Samsung Advanced Institute of Technology, Yongin, Gyeonggi-do, Korea (Aug. 12, 2008), *Possible ordered states in graphene systems.*
48. National Institute of Standards and Technology, Gaithersburg, Maryland, USA (Apr. 4, 2008), *Possible ordered states in graphene bilayers.*

Presentations and Posters

1. American Physical Society March Meeting, New Orleans, Louisiana (Mar. 17, 2017), *Semiclassical Boltzmann transport theory for multi-Weyl semimetals.*
2. Korean Physical Society, Daejeon, Korea (Apr. 22, 2015), *Ferromagnetism of multilayer graphene in the presence of magnetic impurities.*
3. American Physical Society March Meeting, San Antonio, Texas (Mar. 4, 2015), *Inelastic carrier lifetime in a coupled graphene electron-phonon system: Role of plasmon-phonon coupling.*
4. Korean Physical Society, Gwangju, Korea (Oct. 22, 2014), *Exchange-correlations, Plasmon-phonon Coupling, and Dominant Source of Scattering in Multilayer Graphene.*
5. American Physical Society March Meeting, Denver, Colorado (Mar. 4, 2014), *Exchange self-energy and compressibility of multilayer graphene by wavefunction rotation method.*
6. American Physical Society March Meeting, Baltimore, Maryland (Mar. 20, 2013), *Velocity renormalization in multilayer graphene.*
7. American Physical Society March Meeting, Boston, Massachusetts (Feb. 28, 2012), *Screening in chiral multilayer graphene.*
8. MURI Retreat, College Park, Maryland, USA (Jul. 6, 2011), *1. Phonon-limited resistivity in multilayer graphene, 2. Optical vs transport gaps in bilayer graphene.*
9. Graphene Week 2011, Ötz Valley, Austria (Apr. 27, 2011), *Chirality-dependent phonon-limited resistivity in multiple layers of graphene.*
10. American Physical Society March Meeting, Dallas, Texas, USA (Mar. 23, 2011), *Chirality-dependent phonon-limited resistivity in multiple layers of graphene.*
11. Graphene Week 2010, College Park, Maryland, USA (Apr. 21, 2010), *Energy spectrum analysis in biased multilayer graphene.*
12. American Physical Society March Meeting, Portland, Oregon, USA (Mar. 16, 2010), *Origin of universal optical conductivity and optical stacking sequence identification in multilayer graphene.*
13. American Physical Society March Meeting, Portland, Oregon, USA (Mar. 16, 2010), *Effects of disorder on vortex gyration.*
14. 17th Annual Sigma Xi Postdoctoral Poster Presentation, NIST, Gaithersburg, Maryland, USA (Feb. 24, 2010), *Effects of disorder and internal dynamics on vortex wall propagation.*
15. American Vacuum Society Regional Meeting at NIST, Gaithersburg, Maryland, USA (Apr. 1, 2009), *Universal interband conductivity in graphene multilayers.*
16. American Physical Society March Meeting, Pittsburgh, Pennsylvania, USA (Mar. 19, 2009), *Effects of disorder and internal dynamics on vortex domain wall propagation.*
17. 16th Annual Sigma Xi Postdoctoral Poster Presentation, NIST, Gaithersburg, Maryland, USA (Feb. 11, 2009), *n=0 Landau level shift of graphene stack on SiC.*

18. Boulder School for Condensed Matter and Materials Physics, Boulder, Colorado, USA (Jul. 10, 2008), *Room-temperature superfluidity in graphene bilayers?*
19. American Physical Society March Meeting, New Orleans, Louisiana, USA (Mar. 11, 2008), *Chirality sum rule in graphene multilayers.*
20. American Physical Society March Meeting, New Orleans, Louisiana, USA (Mar. 10, 2008), *Pseudospin magnetism in graphene.*
21. Graduate Portfolio Program in Nanoscience and Nanotechnology, The University of Texas at Austin, Texas, USA (Dec. 5, 2007), *Electronic properties of graphene multilayers and future applications to new devices.*
22. South West Academy of Nanoelectronics 2007 Review, The University of Texas at Austin, Texas, USA (Sep. 13, 2007), *Pseudospin magnetism in graphene.*
23. The 4th Windsor Summer School on Condensed Matter Theory, Windsor, United Kingdom (Aug. 15, 2007), *Pseudospin magnetism in graphene.*
24. American Physical Society March Meeting, Denver, Colorado, USA (Mar. 5, 2007), *Ab initio theory of gate induced gaps in graphene bilayers.*
25. Emerging Themes in Physics, The University of Texas at Austin, Texas, USA (Oct. 5, 2006), *Intrinsic and Rashba spin-orbit interactions in graphene sheets.*

References

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