CURRICULUM VITAE

Dr. Kathleen M. McCreary

CURRENT POSITION

Research Physicist at the Naval Research Laboratory in Washington, D.C.
Material Sciences and Technology Division
Center for Materials Physics and Technology Branch
Magnetoelectronic Materials and Devices Section

EDUCATION

Ph.D. in experimental condensed matter physics, March 2012
University of California, Riverside
Thesis: *An Investigation of Spin and Charge Transport in Doped and Defected Graphene*

Academic Honors
2011 Dissertation Year Fellowship
2010 Graduate Research Mentorship Fellowship, 2010

M.S. in physics, September 2007
University of California, Riverside

Academic Honors
2007 Michael Devirian Graduate Scholarship for outstanding academic achievement in first year graduate studies, 2007

B.A. in physics and mathematics, May 2006
The College of Wooster, Wooster, Ohio
Senior Thesis: *Characterization of the ballistic electron emission microscope performance*

Academic Honors
2006 Latin Honors *summa cum laude*
2006 Departmental Honors in Mathematics
2006 Departmental Honor in Physics
2006 Arthur H. Compton Prize in Physics
2005 Joseph Albertus Culler Prize to the first or second year student who has attained the highest rank in general college physics
2005 Phi Beta Kappa academic honor society inductee
2004 Lyman C. Knight, Sr. Prize to recognize a student demonstrating high promise in mathematical proficiency and superior athletic skills

PROFESSIONAL POSITIONS HELD

National Research Council Research Associate
2012-2015 Naval Research Laboratory
Karles Research Fellow
2015 Naval Research Laboratory
Research Physicist
2015-present Naval Research Laboratory

MEMBERSHIP IN TECHNICAL SOCIETIES AND ORGANIZATIONS

2008-present American Physical Society, active member
2014-present American Vacuum Society, active member
2020-2022 Elected to the Executive Committee of the American Vacuum Society Nanometer-Scale Science and Technology Division
2020-present Sigma Xi, active member

HONORS AND AWARDS

2020 NRL Berman Award "Twist Angle-Dependent Atomic Reconstruction and Moiré Patterns in Transition Metal Dichalcogenide Heterostructures"
2019 NRL NRC/ASEE postdoctoral research publication award "*Quantum Calligraphy: Writing Single-Photon Emitters in a Two-Dimensional Materials Platform*"
2019 APL Materials Excellence in research award, 2nd prize, "*A- and B-exciton photoluminescence intensity ratio as a measure of sample quality for transition metal dichalcogenide monolayers*"
2018 NRL Berman Award "Double Indirect Interlayer Exciton in a $MoSe_2$/ WSe_2 van der Waals Heterostructure"
2017 NRL Berman Award "*Understanding Variations in Circularly Polarized Photoluminescence in Monolayer Transition Metal Dichalcogenides*"

PUBLICATIONS

Journal Articles (55)

1. I. Paradisanos, K. M. McCreary, D. Adinehloo, L. Mouchliadis, J. T. Robinson, Hsun-Jen Chuang, A. T. Hanbicki, V. Perebeinos, B. T. Jonker, E. Stratakis, and G. Kioseoglou "Prominent room temperature valley polarization in WS_2/graphene heterostructures grown by chemical vapor deposition" Appl. Phys. Lett. 116, 203102 (2020)
2. S. Ulstrup, R.J. Koch, S. Singh, K.M. McCreary, B.T. Jonker, J.T. Robinson, C. Jozwiak, E. Rotenberg, A. Bostwick, J. Katoch, J.A. Miwa "Direct observation of minibands in a twisted graphene/WS_2 bilayer" Sci. Adv. 6, 6104 (2020)
3. M.R. Rosenberger, H.-J. Chuang, M. Phillips, V.P. Oleshko, K.M. McCreary, S.V. Sivaram, C.S. Hellberg, B.T. Jonker "Twist Angle Dependent Atomic Reconstruction and Moiré Patterns in Transition Metal Dichalcogenide Heterostructures" ACS Nano 14, 4550 (2020)
4. K.M. McCreary, E.D. Cobas, A.T. Hanbicki, M.R. Rosenberger, H.-J. Chuang, S.V. Sivaram, V.P. Oleshko, B.T. Jonker "Synthesis of High-Quality Monolayer MoS_2 by Direct Liquid Injection" ACS Appl. Mater. Interfaces 12, 9580 (2020).
5. K. Yao, E. Yanev, H.-J. Chuang, M.R. Rosenberger, X. Xu, T. Darlington, K.M. McCreary, A.T. Hanbicki, K. Watanabe, T. Taniguchi, B.T. Jonker, X.Zhu, D. N. Basov, J.C. Hone, P.J. Schuck "Continuous Wave Sum Frequency Generation and Imaging of Monolayer and Heterobilayer Two-Dimensional Semiconductors" ACS Nano 2020, 14, 1, 708 (2019)
6. P.D. Cunningham, A.T. Hanbicki, T.L. Reinecke, K.M. McCreary, B.T. Jonker "Resonant optical Stark effect in monolayer WS_2" Nat Commun 10, 5539 (2019).
7. J.K. Gustafson, P.D. Cunningham, K.M. McCreary, B.T. Jonker, L.M. Hayden "Ultrafast Carrier Dynamics of Monolayer WS2 via Broad-Band Time-Resolved Terahertz Spectroscopy" The Journal of Physical Chemistry C 123, 30676 (2019)
8. J.J. Schwartz, H.-J. Chuang, M.R. Rosenberger, S.V. Sivaram, K.M. McCreary, B.T. Jonker, and A. Centrone "Chemical Identification of Interlayer Contaminants within van der Waals Heterostructures" ACS Appl. Mater. Interfaces 11, 25578 (2019)

9. S.V. Sivaram, A.T. Hanbicki, M.R. Rosenberger, G.G. Jernigan, H.-J. Chuang, K.M. McCreary, B.T. Jonker "Spatially Selective Enhancement of Photoluminescence in MoS_2 by Exciton-Mediated Adsorption and Defect Passivation" ACS Appl. Mater. Interfaces 11,16147 (2019)
10. S. Ulstrup, R.J. Koch, D. Schwarz, K.M. McCreary, B.T. Jonker, S. Singh, A. Bostwick, E. Rotenberg, C. Jozwiak, J. Katoch "Imaging microscopic electronic contrasts at the interface of single-layer WS_2 with oxide and boron nitride substrates" Appl. Phys. Lett. 114, 151601 (2019)
11. M.R. Rosenberger, C.K. Dass, H.-J. Chuang, S.V. Sivaram, K.M. McCreary, J.R. Hendrickson, and B.T. Jonker "Quantum Calligraphy: Writing Single-Photon Emitters in a Two-Dimensional Materials Platform" ACS Nano 13, 904 (2019)
12. K.M. McCreary, A.T. Hanbicki, S.V. Sivaram, B.T. Jonker "A- and B-exciton photoluminescence intensity ratio as a measure of sample quality for transition metal dichalcogenide monolayers" APL Materials 6, 111106 (2018)
13. A. T. Hanbicki, H.-J. Chuang, M.R. Rosenberger, C.S. Hellberg, S.V. Sivaram, K.M. McCreary, I.I. Mazin, B.T. Jonker "Double Indirect Interlayer Exciton in a $MoSe_2/WSe_2$ van der Waals Heterostructure" ACS Nano 12, 4719-4726 (2018).
14. M.R. Rosenberger, H.-J. Chuang, K.M. McCreary, A. T. Hanbicki, S.V. Sivaram, B.T. Jonker "Nano-"Squeegee" for the Creation of Clean 2D Material Interfaces" ACS Appl. Mater. Interfaces 10, 10379 (2018)
15. M.R. Rosenberger, H.-J. Chuang, K.M. McCreary, C.H. Li, B.T. Jonker "Electrical Characterization of Discrete Defects and Impact of Defect Density on Photoluminescence in Monolayer WS_2" ACS Nano 12, 1793 (2018).
16. A.L. Friedman, K.M. McCreary, J.T. Robinson, O.M.J. van 't Erve, B.T. Jonker "Spin relaxation and proximity effect in WS2/graphene/fluorographene non-local spin valves" Carbon 131, 18 (2018)
17. J. Katoch, R.J. Koch, S. Moser, K.M. McCreary, S. Singh, J. Xu, B.T. Jonker, R.K. Kawakami, A. Bostwick, E. Rotenberg, C. Jozwiak, S. Ulstrup "Giant spin-splitting and gap renormalization driven by trions in single-layer WS2/h-BN heterostructures" Nature Physics 14, 233 (2018)
18. E.J. McCormick, M.J. Newburger, Y.K. Luo, K.M. McCreary, S. Singh, I.B. Martin, E.J. Cichewicz Jr, B.T. Jonker, R.K. Kawakami "Imaging spin dynamics in monolayer WS2 by time-resolved Kerr rotation microscopy" 2D Materials 2D Mater. 5, 011010 (2018)
19. P.D. Cunningham, A.T. Hanbicki, K.M. McCreary, B.T. Jonker "Photoinduced Bandgap Renormalization and Exciton Binding Energy Reduction in WS_2" ACS Nano 11, 12601 (2017)
20. K.M. McCreary, M. Currie, A.T. Hanbicki, H.-J. Chuang, B.T. Jonker "Understanding Variations in Circularly Polarized Photoluminescence in Monolayer Transition Metal Dichalcogenides" ACS Nano 11, 7988 (2017)
21. P.D. Cunningham, K.M. McCreary, B.T. Jonker "Auger Recombination in Chemical Vapor Deposition-Grown Monolayer WS_2" J. Phys. Chem. Lett. 7, 5242 (2016)
22. C.H. Li, K.M. McCreary, B.T. Jonker "Spatial Control of Photoluminescence at Room Temperature by Ferroelectric Domains in Monolayer WS2/PZT Hybrid Structures" ACS Omega 1, 1075 (2016).
23. S. Ulstrup, J. Katoch, R.J. Koch, D. Schwarz, S. Singh, K.M. McCreary, H.K. Yoo, J. Xu, B.T. Jonker, R.K. Kawakami, A. Bostwick, E. Rotenberg, and C. Jozwiak "Spatially Resolved Electronic Properties of Single-Layer WS_2 on Transition Metal Oxides" ACS Nano 10, 10058 (2016)
24. K.M. McCreary, A.T. Hanbicki, S. Singh, R.K. Kawakami G.G. Jernigan, M. Ishigami, A.

Ng, T.H. Brintlinger. R.M. Stroud, B.T. Jonker "The Effect of Preparation Conditions on Raman and Photoluminescence of Monolayer WS_2" Scientific Reports 6, 35154 (2016)

25. A.V. Stier, K.M. McCreary, B.T. Jonker, J. Kono, S.A. Crooker "Magnetoreflection spectroscopy of monolayer transition-metal dichalcogenide semiconductors in pulsed magnetic fields" Journal of Vacuum Science and Technology B 34, 04J102 (2016)
26. P.D. Cunningham, K.M. McCreary, A.T. Hanbicki, M. Currie, B.T. Jonker, and L.M. Hayden "Charge Trapping and Exciton Dynamics in Large-Area CVD Grown MoS_2" Jounal of Physical Chemistry C 120, 5819-5826 (2016)
27. O.M.J. van 't Erve, A.T. Hanbicki, A.L. Friedman, K.M. McCreary, E. Cobas, C. Li, J. Robinson and B.T. Jonker "Graphene and Monolayer Transition-Metal Dichalcogenides; Properties and Devices" Journal of Materials Research 31, 975 (2016)
28. A.T. Hanbicki, K.M. McCreary, G. Kioseoglou, M. Currie, C.S. Hellberg, A.L. Friedman, and B.T. Jonker "High room temperature optical polarization due to spin-valley coupling in monolayer WS_2" AIP Advances 6, 055804 (2016)
29. A.V. Stier, K.M. McCreary, B.T. Jonker, J. Kono, S.A. Crooker "Exciton Diamagnetic Shifts and Valley Zeeman Effects in Monolayer WS2 and MoS2 to 65 Tesla" Nature Communications 7, 10643 (2016)
30. K.M. McCreary, A.T. Hanbicki, J.C. Culbertson, G.G. Jernigan, B.T. Jonker "Synthesis of Large-Area WS_2 monolayers with exceptional Photoluminescence" Scientific Reports 6, 19195 (2016)
31. A.T. Hanbicki, G. Kioseoglou, M. Currie, C.S. Hellberg, K.M. McCreary, A.L. Friedman, and B.T. Jonker "Anomalous temperature dependence of charged exciton photoluminescence polarization in monolayer WS_2" Scientific Reports 6, 18885 (2016)
32. L. Yang, W. Chen, K.M. McCreary, B.T. Jonker, J. Lou, and S.A. Crooker "Spin Coherence and Dephasing of Localized Electrons in Monolayer MoS_2" Nano Letters 15, 8250 (2015)
33. A.J. Berger, M.R. Page, H. Wen, K.M. McCreary, V.P. Bhallamudi, R.K. Kawakami, and P.C. Hammel "Correlating spin transport and electrode magnetization in a graphene spin valve: Simultaneous magnetic microscopy and non-local measurements" Applied Physics Letters 107, 142406 (2015)
34. K.M. McCreary, A.T. Hanbicki, J.T. Robinson, E. Cobas, J.C. Culbertson, A.L. Friedman, G.G. Jernigan, B.T. Jonker "Large Area Synthesis of Continuous and Uniform MoS2 Monolayer Films on Graphene" Advanced Functional Materials 24, 6449 (2014)
35. O.M.J. van't Erve, A.T. Hanbicki, K.M. McCreary, C.H. Li, and B.T. Jonker "Optical detection of spin Hall effect in metals" Applied Physics Letters 104, 172402 (2014)
36. A.G. Swartz, K.M. McCreary, Wei Han, H. Wen, R.K. Kawakami "A systematic approach to interpreting Hanle spin precession data in non-local spin valves" SPIE NanoScience+ Engineering, 881328 (2013)
37. A.G. Swartz, K.M. McCreary, W. Han, J.J.I. Wong, P.M. Odenthal, H. Wen, J-R. Chen, R.K. Kawakami, Y. Hao, R.S. Ruoff, J. Fabian "Integrating MBE materials with graphene to induce novel spin-based phenomena" Journal of Vacuum Science and Technology B 31, 04D105 (2013).
38. O.M.J. van't Erve, A.L. Friedman, E. Cobas, C.H. Li, A.T. Hanbicki, K.M. McCreary, J.T. Robinson, B.T. Jonker "A graphene solution to conductivity mismatch: Spin injection from ferromagnetic metal/graphene tunnel contacts into silicon" Journal of Applied Physics 113, 17C502 (2013)
39. A.G. Swartz, J-R. Chen, K.M. McCreary, P.M. Odenthal, W. Han, R.K. Kawakami "Effect of in situ deposition of Mg adatoms on spin relaxation in graphene" Physical Review B 87, 075455 (2013)

40. K.M. McCreary, A.G. Swartz, W. Han, J. Fabian, R.K. Kawakami “Magnetic moment formation in graphene detected by scattering of pure spin currents” Physical Review Letters 109, 186604 (2013)
41. W. Han, J-R. Chen, D. Wang, K.M. McCreary, H. Wen, A.G. Swartz, J. Shi, R.K. Kawakami “Spin relaxation in single-layer graphene with tunable mobility” Nano Letters 12, 3443-3447 (2012)
42. W. Han, K.M. McCreary, K. Pi, W-H. Wang, Y. Li, H. Wen, J-R. Chen, R.K. Kawakami “Spin transport and relaxation in graphene” Journal of Magnetism and Magnetic Materials 324, 369-381 (2011)
43. W. Han, J-R. Chen, K.M. McCreary, H. Wen, R.K. Kawakami “Enhanced spin injection efficiency and extended spin lifetimes in graphene spin valves” SPIE NanoScience+ Engineering, 81000 (2011)
44. K.M. McCreary, K. Pi, R.K. Kawakami “Metallic and insulating adsorbates on graphene” Applied Physics Letters 98, 192101 (2011)
45. T.M. Huang, K.M. McCreary, S. Garg, T. Kyu “Induced smectic phases in phase diagrams of binary nematic liquid crystal mixtures” The Journal of Chemical Physics 134, 124508 (2011)
46. W. Han, K. Pi, K.M. McCreary, Y. Li, J.J.I. Wong, A.G. Swartz, R.K. Kawakami “Tunneling spin injection into single layer graphene” Physical Review Letters 105, 167202 (2010)
47. K. Pi, Wei Han, K. M. McCreary, A. G. Swartz, Yan Li, and R. K. Kawakami, “Manipulation of Spin Transport in Graphene by Surface Chemical Doping” Physical Review Letters 104, 187201 (2010)
48. K.M. McCreary, K. Pi, A.G. Swartz, W. Han, W. Bao, C.N. Lau, F. Guinea, M.I. Katsnelson, R.K. Kawakami “Effect of cluster formation on graphene mobility” Physical Review B 81, 11543 (2010)
49. Wei Han, K. Pi, K.M. McCreary, Yan Li, Jared J. I. Wong, A. G. Swartz, and R. K. Kawakami, "Tunneling Spin Injection into Single Layer Graphene," Physical Review Letters 105, 167202 (2010)
50. W. Han, Y. Zhou, Y. Wang, Y. Li, J. J. I. Wong, K. Pi, A.G. Swartz, K.M. McCreary, F. Xiu, K.L. Wang, J. Zou, and R.K. Kawakami, "Growth of single-crystalline, atomically smooth MgO films on Ge(001) by molecular beam epitaxy," Journal of Crystal Growth 312, 44 (2010)
51. W. Han, K. Pi, W. H. Wang, K.M. McCreary, Y. Li, W. Bao, P. Wei, J. Shi, C. N. Lau, and R.K. Kawakami, "Spin transport in graphite and graphene spin valves," Proc. SPIE, Vol. 7398, 739819 (2009)
52. K. Pi, K.M. McCreary, W. Bao, Wei Han, Y. F. Chiang, Yan Li, S.-W. Tsai, C. N. Lau, and R. K. Kawakami, "Electronic doping and scattering by transition metals on graphene," Phys. Rev. B 80, 075406 (2009)
53. W. Han, K. Pi, W. Bao, K.M. McCreary, Y. Li, W. H. Wang, C. N. Lau, and R.K. Kawakami, "Electrical detection of spin precession in single layer graphene spin valves with transparent contacts," Applied Physics Letters 94, 222109 (2009)
54. W. Han, W-H. Wang, K. Pi, K.M. McCreary, W. Bao, Y. Li, F. Miao, C. N. Lau, and R.K. Kawakami, "Electron-Hole Asymmetry of Spin Injection and Transport in Single-Layer Graphene," Phys. Rev. Lett. 102, 137205 (2009)
55. W-H. Wang, W. Han, K. Pi, K.M. McCreary, F. Miao, W. Bao, C.N. Lau, R.K. Kawakami “Growth of atomically smooth MgO films on graphene by molecular beam epitaxy” Applied Physics Letters 93, 183107 (2008)

Book Chapters (2)

1. Handbook of Crystal Growth, Vol. III, Chapter "Chemical Vapor Deposition of Two-Dimensional Crystals" Z.R. Robinson, S.W. Schmucker, K.M. McCreary, E. Cobas. Edited by T. Nishinaga and T.F. Kuech, Elsevier, 2015
2. Nanoelectronics and Photonics, Chapter 5: "Fundamentals of Spintronics in Metal and Semiconductor Systems". R.K. Kawakami, K. M. McCreary, Y. Li. Edited by A. Korkin and F. Rosei, Springer, 2008.

Patents and Invention Disclosures (5)

1. Patent under review by Invention Evaluation Board, Navy Case No. 210154 "Laser-Written Submicron Pixels with Tunable Circular Polarization and Write-Read-Erase-Reuse Capability on a Nano Material (Two-Dimensional Heterostructure) at Room Temperature"; currently under review
2. Patent Invention Award for Adoption of Navy Case No. 11452 "A nano-indent process for creating single photon emitters in a two-dimensional materials platform"; April 2021
3. Patent Issued for Navy Case No 103594-US3 "Optical Modulator Using the Spin Hall Effect in Metals"; Issued May 26, 2020
4. Patent issued for Navy Case No. 105683-US2 "Controlling Structural Phase Transitions and Properties of Two-Dimensional Materials by Integrating with Multiferroic layers" Issued September 3, 3019
5. Patent Invention Award for Adoption of Navy Case No. 104205-US2 "Lateral Heterojunctions in 2D Materials by Integrating with Multiferroic Layers" December 2017

PRESENTATIONS AT SCIENTIFIC MEETINGS

Oral Presentations (23)

1. K.M. McCreary, S. Sivaram, A. Hanbicki, M. Rosenberger, G. Jernigan, H.-J. Chuang, and B. Jonker "Spatially Selective Enhancement of Photoluminescence in MoS_2 by Exciton-Mediated Adsorption and Defect Passivation" WINDS 2019 (Workshop on Innovative Nanoscale Devices and Systems). Kohala Coast, HI December 2-6, 2019
2. K.M. McCreary, E. Cobas, A.T. Hanbicki, M.R. Rosenberger, H.-J. Chuang, B.T. Jonker "Synthesis of High Quality Monolayer Transition Metal Dichalcogenides using Direct Liquid Injection" AVS 66th International Symposium & Exhibition. Columbus, OH Oct 20-25, 2019
3. K.M. McCreary, S.V. Sivaram, A.T. Hanbicki, M.R. Rosenberger, G. Jernigan, H.- J. Chuang, B.T. Jonker "Spatially Selective Enhancement of Photoluminescence in MoS_2 by Exciton-Mediated Adsorption and Defect Passivation" AVS 66th International Symposium & Exhibition. Columbus, OH Oct 20-25, 2019
4. K.M. McCreary, E. Cobas, A.T. Hanbicki, B.T. Jonker "Synthesis of High Quality Monolayer Transition Metal Dichalcogenides using Direct Liquid Injection" 2nd Semiannual Government Workshop on 2D Materials BRICC in Arlington, VA. March 22, 2019
5. K.M. McCreary, E. Cobas, A.T. Hanbicki, B.T. Jonker "Synthesis of High Quality Monolayer Transition Metal Dichalcogenides using Direct Liquid Injection" Session F13: 2D materials—scaled growth. APS March meeting 2019. Boston, MA. March 4-8, 2019
6. K.M. McCreary, A.T. Hanbicki, S.V. Sivaram, B.T. Jonker "Comparison of A- and B-exciton Intensity and Polarization in Transition Metal Dichalcogenide Monolayers and Heterostructures (Session 2D+EM+MN+NS-ThA) AVS 65. Long Beach, CA. October 21-26, 2018

7. K.M. McCreary, M. Currie, A.T. Hanbicki, H.-J. Chuang, B.T. Jonker "Understanding Variations in Circularly Polarized Photoluminescence in Monolayer Transition Metal Dichalcogenides" (Session 11B) SPIE spintronics XI. San Diego, CA. August 19-23, 2018
8. K.M. McCreary, M. Currie, A.T. Hanbicki, H.-J. Chuang, B.T. Jonker "Understanding Variations in Circularly Polarized Photoluminescence in Monolayer Transition Metal Dichalcogenides" Washington DC government workshop on 2D materials beyond graphene, NRL Friedman Room. July 23, 2018
9. K.M. McCreary, A.T. Hanbicki, S.V. Sivaram, B.T. Jonker "Solving the Mystery of B-Peak Emission in Monolayer Transition Metal Dichalcogenides" (Abstract H37.00003) APS March Meeting, Los Angeles, CA. March 5-9, 2018
10. K.M. McCreary, A.T. Hanbicki, M. Currie, and, B.T. Jonker "Understanding variations in circularly polarized photoluminescence in monolayer transition metal dichalcogenides" (Abstract 2D+EM+MI+MN-MoM3) AVS 64rd International Symposium & Exhibition, Tampa, FL. October 29-November 3, 2017
11. K.M. McCreary, M. Currie, A.T. Hanbicki, B.T. Jonker "Identifying the Reason for Variations in Circularly Polarized Photoluminescence Values in Monolayer WS_2." (Abstract C48.00002) APS March Meeting, New Orleans, LA. March 13-17, 2017
12. K.M. McCreary, A.T. Hanbicki, G. Kioseoglou, M. Currie, and, B.T. Jonker "Substrate Effects in CVD Synthesized Monolayer WS_2" (Abstract 2D-ThA10) AVS 63rd International Symposium & Exhibition, Nashville, TN. November 6-11, 2016
13. K.M. McCreary, A.T. Hanbicki, M. Currie, G. Kioseoglou, B.T. Jonker "Synthesis and Optical Control of Circular Polarization in monolayer Tungsten Disulfide." (Abstract X14.00007) APS March Meeting, Baltimore, MD. March 14-18, 2016
14. K.M. McCreary "Synthesis of Synthesis of novel 2D materials and their optical, electronic, and spintronic properties" NRL Division Colloquium Series, Washington D.C. March 13, 2015
15. K.M. McCreary, A.T. Hanbicki, J.C. Culbertson, M. Currie, B.T. Jonker "Synthesis and Investigation of van der Waals Heterostructures" (Abstract: G1.00003) APS March Meeting, San Antonio, TX. March 2-6, 2015
16. K.M. McCreary, A.T. Hanbicki, J.T. Robinson, B.T. Jonker "Synthesis of Large Scale MoS_2-Graphene Heterostructures". (Abstract: 5386) AVS 61st International Symposium & Exhibition, Baltimore, MD. November 9- November 14, 2014
17. K.M. McCreary, A.T. Hanbicki, J.T. Robinson, E. Cobas, J.C. Culbertson, A.L. Friedman, G.G. Jernigan, B.T. Jonker "Synthesis of Large Scale MoS_2-Graphene Heterostructures" (Abstract: M51.00011) APS March Meeting, Denver, CO. March 3-7, 2014
18. K.M. McCreary, A.G. Swartz, W. Han, J. Fabian, R.K. Kawakami "Magnetic Moment Formation in Hydrogenated and Defected Graphene" (Abstract: D14.00010) APS March Meeting, Boston MA. February 27-March 2, 2012
19. K.M. McCreary, R.K. Kawakami "Metallic and Insulating Adsorbates on Graphene" (Abstract: GR+TF+ET-MoA10) AVS 58th International Symposium & Exhibition, Nashville, TN October 30 - November 4, 2011
20. K.M. McCreary, W. Han, A.G. Swartz, R.K. Kawakami "Graphene Spintronics and Magnetic Moment Formation" International Workshop on Carbon-based Spintronics, Max Planck Institute for the Physics of Complex Systems at Dresden, Germany. October 24 - 28, 2011
21. K.M. McCreary, W. Han, R.K. Kawakami "Spin and Transport Properties of Doped Graphene" (Abstract L37.00005) APS March Meeting, Dallas, TX. March 21-25, 2011.

22. K.M. McCreary, K. Pi, A.G. Swartz, W. Han, W. Bao, C.N. Lau, F. Guinea, M.I. Katsnelson, S.-W. Tsai, R.K. Kawakami "The Effect of Cluster Formation on Graphene Mobility" (Abstract Z14.00005) APS March Meeting, Portland, OR. March 15-19, 2010
23. K.M. McCreary, W. Han , W-H. Wang, K. Pi, F. Miao, W. Bao, C.N. Lau, R.K. Kawakami "Growth of atomically smooth MgO films on graphene by molecular beam epitaxy" (Abstract W26.00010) APS March Meeting, Pittsburgh, PA, 2009

Poster Presentations (8)

1. K.M. McCreary, M. Currie, A.T. Hanbicki, B.T. Jonker "Understanding Variations in Circularly Polarized Photoluminescence in Monolayer Transition Metal Dichalcogenides" Graphene and Beyond, Penn State University, PA. May 9-12, 2017
2. K.M. McCreary, A.T. Hanbicki, G. Kioseoglou, M. Currie and, B.T. Jonker "Substrate effects in CVD Synthesized Monoalyer WS_2." (Poster 13) Graphene and Beyond, Penn State University, PA. May 9-10, 2016
3. K.M. McCreary, A.T. Hanbicki, G. Kioseoglou, M. Currie, A.L. Friedman, and, B.T. Jonker "Synthesis and Optical Contol of Circular Polarization in Monolayer Tungsten Disulfide" (Poster EU-10) MMM-Intermag. Joint Conference, San Diego, CA. January 11-15, 2016
4. K.M. McCreary, A.T. Hanbicki, M. Currie, A. Friedman J.C. Culbertson, G.G. Jernigan, B.T. Jonker "CVD Synthesis of Monolayer TMDs and the Measurement of High Exciton Binding Energy in Monolayer WS2 and WSe2" (Poster) 2015 Graphene and Beyond, Penn State University, PA. May 11-12, 2015
5. K.M. McCreary, B.T. Jonker "Synthesis of large area transition metal dichalcogenides for spintronics". (Poster: DP-13) 59^{th} Annual Magnetism and Magnetic Materials Conference, Honolulu, HI. November 3-7, 2014
6. K.M. McCreary, A.T. Hanbicki, J.T. Robinson, E. Cobas, J.C. Culbertson, A.L. Friedman, G.G. Jernigan, B.T. Jonker "Synthesis and Characterization of Atomically Thin MoS_2" 8^{th} International Conference on Physics and Applications of Spin Phenomena in Solids Washington, DC. July 28-31, 2014
7. K.M. McCreary, K. Pi, A.G. Swartz, W. Han, W. Bao, C.N. Lau, F. Guinea, M.I. Katsnelson, S.-W. Tsai, R.K. Kawakami, "The Effect of Cluster Formation on Graphene Mobility" Graphene Week, University of Maryland, College Park, MD. April 19-23, 2010
8. K.M. McCreary, W. Han, R.K. Kawakami "Magnetic Moments in Graphene" Novel Magnetic Materials Workshop, Dresden, Germany, 2010