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Education

Ph.D. Physics, University of California, Davis, 2009
 M.S. Physics, University of California, Davis, 2006
 B.S. Physics, University of California, San Diego, 2003

Employment History

14-present Researcher and node-leader for MOSAIC project, NanOsc AB
 12-present Researcher, Physics Department, University of Gothenburg
 09-12 Postdoctoral Researcher, Physics Department, University of Gothenburg;
 Advisor: Dr. Johan Åkerman
 03-09 Graduate Student Researcher, Physics Department, UC Davis;
 Advisor: Dr. Kai Liu
 02-03 Undergraduate Research Assistant, Physics Department, UC San Diego;
 Advisor: Dr. Ivan K. Schuller

Academic Honors and Awards

15 Göta-Student Natural Sciences Teaching Prize
 10-12 Postdoctoral Fellowship-Swedish Science Council
 07 Summer Graduate Student Researcher Award, UC Davis
 06 Leo M. Falicov Award for best graduate student research and presentation, 2006
 American Vacuum Society 53rd International Symposium & Exhibition - MIND
 05 1st Prize Margaret Burbidge Award for best experimental research, Fall 2005 Meeting of
 the California Section of the American Physical Society
 05 Katherine Fadley Pusateri Memorial Fund award, UC Davis
 03-04 McNair Graduate Fellowship, UC Davis
 99-03 Northern California Scholarship Foundation award

Grants past and present

16-19 Single PI Young Researcher Project Grant (3.8 MSEK~\$400k)-Swedish Science Council
 12-15 Single PI Young Researcher Project Grant (4.8 MSEK~\$560k)-Swedish Science Council

Research Interests

Fabrication and experimental characterization of the structural, magnetic, and transport properties of a variety of nanoscale magnetic materials. More specifically, magnetization reversal and hysteresis, magnetoresistance, interlayer coupling, exchange bias, spin-transfer torque, and magnonics. Expertise in sputter deposition, e-beam evaporation, electrodeposition, photo- and e-beam lithography, x-ray reflectivity and diffraction, SQUID magnetometry, alternating gradient and vibrating sample magnetometry, magneto-optical Kerr effect, magnetic force microscopy, high frequency transport measurements, and Brillouin light scattering.

Teaching Experience

Lecturer (University of Gothenburg):

Fundamentals of Magnetic Materials and Applications, graduate level

Electromagnetic Theory, upper division undergraduate level

-Recipient of the Göta-Student Natural Sciences Teaching Prize

Substitute lecturer (UC Davis):

Physics 1B, *Principles of Physics*, lower division undergraduate.

Physics 9B, *Classical Physics*, lower division undergraduate.

Teaching assistant (UC Davis):

Physics 122, *Advanced Physics Laboratory*, upper division undergraduate.

Physics 250, *Fabrication and Properties of Magnetic Nanostructures*, graduate.

Mentoring Experience

UC Davis

2004 Blair Wilcox, NSF-REU student

2004 Kaung Hlaing, MURPPS student

2005 Dexter Nigos, NSF-REU student

2006 Jared Wong, Senior Thesis, **1st Prize Steven Chu Award** for Best Undergraduate Research at the 2006 APS-CA meeting

2006 Melina Brees, NSF-REU student

2007 Peter Greene, NSF-REU student, **2nd Prize Steven Chu Award** for Best Undergraduate Research at the 2007 APS-CA meeting

2009 Nasim Eibagi, Senior Thesis

University of Gothenburg

2013 Yeyu Fang, PhD (co-advisor)

2013- Afshin Houshang (PhD co-advisor), **Winner of the best student presentation at 2016 Joint MMM-INTERMAG meeting**

Professional Activity

Member of the American Physical Society and IEEE Magnetic Society

Reviewer for Nature series, PRL, PRB, APL, JAP, IEEE Trans. Magn.

Session chair for APS March Meeting, MMM and INTERMAG meetings

Invited Talks

1. “Spin wave beam driven synchronization of NC-STOs”, The 9th International Symposium on Metallic Multilayers, 2016, Uppsala, Sweden, June 20-24, 2016.
2. “Recent advances in synchronizing nanoscale magnetic oscillators”, International Conference on Microwave Magnetics 2016, University of Alabama, Tuscaloosa, Alabama, June 5-8, 2016.
3. “Recent advances in synchronizing nanoscale magnetic oscillators”, XMLS16 Workshop, Vail, Colorado, March 22, 2016.
4. “Recent advances in synchronizing nano-contact spin torque oscillators”, (keynote speaker) International Workshop on Flow Dynamics and Spintronics, Royal Institute of Technology (KTH), Stockholm, Sweden, November 13, 2015.
5. “Spin wave beam mediated synchronization of nano-contact spin torque oscillators”, Magnonics 2015, Seon Abbey, Germany, August 4, 2015.
6. “Recent advances and prospects for nano-contact and spin Hall nano-oscillators”, UC Davis Condensed Matter Physics Seminar, Davis, California, January 7, 2015.
7. “Recent advances and prospects for nano-contact and spin Hall nano-oscillators”, Beyond CMOS Workshop, IMEC, Leuven, Belgium, October 17, 2014.
8. “Spin wave mode coexistence on the nanoscale: A consequence of the Oersted field induced asymmetric energy landscape”, APS March Meeting 2014, Denver, Colorado, March 3, 2014.
9. “Mode coexistence in nanocontact spin torque oscillators”, Magnonics 2013, Varberg, Sweden, August 7, 2013.
10. “Mode coexistence and self-modulation in nanocontact spin torque oscillators”, XMLS13 Workshop, Vail, Colorado, March 26, 2013.
11. “Consequences of the asymmetric Oersted field in nanocontact spin torque oscillators”, UC Davis Condensed Matter Physics Seminar, Davis, California, January 10, 2013.
12. “Spin wave mode coexistence on the nano-scale: Consequences of an Oersted field induced energy landscape in nano-contact spin torque oscillators”, Recent Advances in Spintronics Workshop, Stockholm, Sweden, December 6, 2012
13. “Graded anisotropy FePtCu films”, Physics at the Nanoscale, Madrid, Spain, October 21, 2011.
14. “Graded anisotropy FePtCu thin films: A solution to the magnetic recording trilemma?”, Magnetism Seminar, University of Minnesota, Minnesota, May 6, 2011.
15. “Spin wave dynamics in spin torque oscillators: Manipulation, synchronization, and prospects for magnonics”, APS Short Pulse X-Ray Workshop, Argonne, Illinois, May 4, 2011.
16. “Graded anisotropy FePtCu thin films: A solution to the magnetic recording trilemma”, UC Davis Condensed Matter Physics Seminar, Davis, California, January 13, 2011.
17. “Graded anisotropy FePtCu thin films: A solution to the magnetic recording trilemma?”, Joint NSLS-II and MAX-lab Workshop, Port Jefferson, New York, November 23, 2010.
18. “Magnetization reversal mechanisms of Fe nanodots”, LLNL Seminar, Livermore, California, September 17, 2007.

Journal Publications

1. M.I. Montero, R.K. Dumas, G. Liu, M. Viret, O.M. Stoll, W.A.A. Macedo, and Ivan K. Schuller, "Magnetoresistance of mechanically stable Co nanoconstrictions", *Physical Review B* **70**, 184418 (2004); also included in *Virtual Journal of Nanoscale Science & Technology*, **10** (22) (2004).
2. J. Y. Kim, F. E. Osterloh, H. Hiramatsu, R. K. Dumas, and Kai Liu, "Synthesis and real-time magnetic manipulation of a biaxial superparamagnetic colloid", *Journal of Physical Chemistry B*, **109**, 11151 (2005).
3. S. M. Gravano, R. K. Dumas, K. Liu, and Timothy E. Patten, "Methods for the surface functionalization of γ -Fe₂O₃ nanoparticles with initiators for atom transfer radical polymerization and formation of coreshell inorganic-polymer structures", *Journal of Polymer Science A*, **43**, 3675 (2005).
4. F. E. Osterloh, H. Hiramatsu, R. K. Dumas, and Kai Liu, "Fe₃O₄-LiMo₃Se₃ nanoparticle clusters as superparamagnetic nanocompasses", *Langmuir*, **21**, 9709 (2005).
5. D. Dosev, M. Nichkova, R.K. Dumas, S.J. Gee, B.D. Hammock, K. Liu, and Ian M. Kennedy, "Magnetic/luminescent core/shell particles synthesized by spray pyrolysis and their application in immunoassays with internal standard", *Nanotechnology*, **18**, 055102 (2007).
6. R. K. Dumas, C. -P. Li, I. V. Roshchin, I. K. Schuller, and Kai Liu, "Magnetic fingerprints of sub-100 nm Fe dots", *Physical Review B*, **75**, 134405 (2007); also included in *Virtual Journal of Nanoscale Science & Technology*, **15** (15) (2007).
7. R.K. Dumas, C.-P. Li, I.V. Roshchin, I.K. Schuller, and Kai Liu, "Temperature induced single domain – vortex state transition in sub-100nm Fe nanodots", *Applied Physics Letters*, **91**, 202501 (2007).
8. M. Winklhofer, R.K. Dumas, and Kai Liu, "Identifying reversible and irreversible magnetization changes in prototype patterned media using first- and second-order reversal curves", *Journal of Applied Physics*, **103**, 07C518 (2008).
9. C. Du, J. Yun, R. K. Dumas, X. Yuan, K. Liu, N. D. Browning, and Ning Pan, "Three-dimensionally Intercrossing Mn₃O₄ Nanowires", *Acta Materialia*, **56**, 3516 (2008).
10. Jared Wong, Peter Greene, Randy K. Dumas, Kai Liu, "Probing magnetic configurations in buried Cobalt/Copper multilayered nanowires", *Applied Physics Letters*, **94**, 032504 (2009).
11. M.T Rahman, R.K. Dumas, N. Eibagi, N. Shams, Y.-C. Wu, K. Liu, and Chih-Huang Lai, "Controlling magnetization reversal by engineering the geometry of nanostructures with perpendicular anisotropy", *Applied Physics Letters*, **94**, 042507 (2009).
12. Z. Ma, D. Dosev, M. Nichkova, R.K. Dumas, S.J. Gee, B.D. Hammock, K. Liu, and Ian M. Kennedy, "Synthesis and characterization of multifunctional silica core-shell nanocomposites with magnetic and fluorescent functionalities", *Journal of Magnetism and Magnetic Materials*, **321**, 1368 (2009).
13. R.K. Dumas, T. Gredig, C.-P. Li, I.K. Schuller, and Kai Liu, "Angular dependence of vortex annihilation fields in asymmetric Co dots", *Physical Review B*, **80**, 014416 (2009).
14. D. Perez de Lara, F.J. Castaño, B.G. Ng, R.K. Dumas, E.M. Gonzalez, K. Liu, C.A. Ross, I. K. Schuller, and Jose L. Vicent, "Rocking ratchet induced by pure magnetic potentials with broken reflection symmetry", *Physical Review B*, **80**, 224510 (2009).

15. C.L. Zha, R.K. Dumas, J. Persson, S.M. Mohseni, J. Nogués, and Johan Åkerman, “Pseudo spin valves using a (112)-textured $\text{D0}_{22} \text{Mn}_{2.3-2.4}\text{Ga}$ fixed layer”, *IEEE Magnetics Letters*, **1**, 2500104 (2010).
16. B. J. McMorran, A. C. Cochran, R. K. Dumas, K. Liu, P. Morrow, D. T. Pierce, and J. Unguris, “Measuring the effects of low energy ion milling on the magnetization of Co/Pd multilayers using SEMPA”, *Journal of Applied Physics*, **107**, 09D305 (2010).
17. J. W. Liao, R. K. Dumas, H. C. Hou, Y. C. Huang, W. C. Tsai, L. W. Wang, D. S. Wang, M. S. Lin, Y. C. Wu, R. Z. Chen, J. L. Lee, J. W. Lau, K. Liu, and Chih-Huang Lai, “Simultaneous enhancement of anisotropy and grain segregation in CoPtCr-SiO₂ perpendicular recording media by a MnRu intermediate layer”, *Physical Review B*, **82**, 014423 (2010).
18. Z.Y. Wang, T. Lin, P. Wei, X.F. Liu, R.K. Dumas, K. Liu, and Jing Shi, “Tuning carrier type and density in Bi₂Se₃ by Ca-doping”, *Applied Physics Letters*, **97**, 042112 (2010).
19. C.L. Zha, R.K. Dumas, Y.Y. Fang, V. Bonanni, J. Nogués, and Johan Åkerman, “Continuously graded anisotropy in single $(\text{Fe}_{53}\text{Pt}_{47})_{100-x}\text{Cu}_x$ films”, *Applied Physics Letters*, **97**, 182504 (2010).
20. V. Bonanni, Y.Y. Fang, R.K. Dumas, C.L. Zha, S. Bonetti, J. Nogués, and Johan Åkerman, “First order reversal curve analysis of graded anisotropy FePtCu films”, *Applied Physics Letters*, **97**, 202501 (2010).
21. R.K. Dumas, D. Gilbert, N. Eibagi, and Kai Liu, “Chirality control via double vortices in asymmetric Co dots”, *Physical Review B (Rapid Communications)*, **83**, 060415 (2011).
22. X.M. Kou, X. Fan, R.K. Dumas, Q. Lu, Y.P. Zhang, H. Zhu, X.K. Zhang, K. Liu, and John Q. Xiao, “Memory effect in magnetic nanowire arrays”, *Advanced Materials*, **23**, 1393 (2011).
23. Y.Y. Fang, R.K. Dumas, C.L. Zha, and Johan Åkerman, “An in-situ anneal study of graded anisotropy FePtCu films”, *IEEE Magnetics Letters*, **2**, 5500104 (2011).
24. J.E. Davies, P. Morrow, C.L. Dennis, J.W. Lau, B. McMorran, A. Cochran, J. Unguris, R.K. Dumas, P. Greene, and Kai Liu, “Reversal of patterned Co/Pd multilayers with graded magnetic anisotropy” *Journal of Applied Physics*, **109**, 07B909 (2011).
25. T.N. Anh Nguyen, Y.Y. Fang, M. Mohseni, R.K. Dumas, and Johan Åkerman, “[Co/Pd]-NiFe exchange springs with tunable top layer magnetization tilt angle”, *Applied Physics Letters*, **98**, 172502 (2011).
26. R.K. Dumas, C.L. Zha, Y.Y. Fang, V. Bonanni, J.W. Lau, J. Nogués, and Johan Åkerman, “Graded anisotropy FePtCu films”, *IEEE Transactions on Magnetics*, **47**, 1580 (2011).
27. R.K. Dumas, Y.Y. Fang, B.J. Kirby, C.L. Zha, V. Bonanni, J. Nogués, and Johan Åkerman, “Probing vertically graded anisotropy in FePtCu films”, *Physical Review B*, **84**, 054434 (2011).
28. C.L. Zha, R.K. Dumas, J.W. Lau, S.M. Mohseni, S.R. Sani, I.V. Golosovsky, Å.F. Monsen, J. Nogués, and Johan Åkerman, “Nanostructured MnGa films on Si/SiO₂ with 20.5 kOe room temperature coercivity”, *Journal of Applied Physics*, **110**, 093902 (2011).
29. D. Perez de Lara, F.J. Castaño, B.G. Ng, H.S. Körner, R.K. Dumas, E.M. Gonzalez, K. Liu, C.A. Ross, I. K. Schuller, and Jose L. Vicent, ”Magnetic pinning of flux lattice in superconducting-nanomagnet hybrids”, *Applied Physics Letters*, **99**, 182509 (2011).
30. S.M. Mohseni, R.K. Dumas, Y. Fang, J.W. Lau, S.R. Sani, J. Persson, and Johan Åkerman, “Temperature-dependent interlayer coupling in Ni/Co perpendicular pseudo-spin-valve structures”, *Physical Review B*, **84**, 174432 (2011).

31. Alberto López-Ortega, Marta Estrader, German Salazar-Alvarez, Sònia Estradé, Igor V. Golosovsky, Randy K. Dumas, David J. Keavney, Marianna Vasilakaki, Kalliopi N. Trohidou, Jordi Sort, Francesca Peiró, Santiago Suriñach, Maria Dolors Baró, and Josep Nogués, “Strongly exchange coupled inverse ferromagnetic soft|hard, $Mn_xFe_{3-x}O_4|Fe_xMn_{3-x}O_4$, core|shell heterostructured nanoparticles”, *Nanoscale*, **4**, 5138 (2012).
32. T.N. Anh Nguyen, N. Benatmane, V. Fallahi, Y. Fang, S.M. Mohseni, R.K. Dumas, and Johan Åkerman, “[Co/Pd]₄-Co-Pd-NiFe spring magnets with highly tunable and uniform magnetization tilt angles”, *Journal of Magnetism and Magnetic Materials*, **324**, 3929 (2012).
33. R.K. Dumas, C.P. Li, I.V. Roshchin, I.K. Schuller, and Kai Liu, “Deconvoluting reversal modes in exchange-biased nanodots”, *Physical Review B*, **86**, 144410 (2012).
34. B.J. Kirby, M.T. Rahman, R.K. Dumas, J.E. Davies, C.H. Lai, and Kai Liu, “Depth-resolved magnetization reversal in nanoporous perpendicular anisotropy multilayers”, *Journal of Applied Physics*, **113**, 033909 (2013).
35. S. Chung, S.M. Mohseni, V. Fallahi, T.N. Anh Nguyen, N. Benatmane, R.K. Dumas, and Johan Åkerman, “Tunable spin configuration in [Co/Ni]-NiFe spring magnets” *Journal of Physics D: Applied Physics*, **46**, 125004 (2013).
36. S.M. Mohseni, S.R. Sani, J. Persson, T.N. Anh Nguyen, S. Chung, Ye. Pogoryelov, P.K. Muduli, E. Iacocca, A. Eklund, R.K. Dumas, S. Bonetti, A. Deac, M. A. Hofer, and Johan Åkerman, “Spin torque-generated magnetic droplet solitons”, *Science*, **339**, 1295 (2013).
37. Y.Y. Fang, R.K. Dumas, T.N. Anh Nguyen, S. M. Mohseni, S. Chung, C.W. Miller, and Johan Åkerman, “A non-volatile spintronic memory element with a continuum of resistance states”, *Advanced Functional Materials*, **23**, 1919 (2013).
38. S. Tacchi, T.N. Anh Nguyen, G. Carlotti, G. Gubbiotti, M. Madami, R.K. Dumas, J.W. Lau, Johan Åkerman, A. Rettori, and M. G. Pini, “Spin wave excitations in exchange-coupled [Co/Pd]-NiFe films with tunable tilting of the magnetization”, *Physical Review B*, **87**, 144426 (2013).
39. R.K. Dumas, E. Iacocca, S. Bonetti, S.R. Sani, S.M. Mohseni, J. Persson, and Johan Åkerman, “Spin wave mode coexistence on the nano-scale: A consequence of an Oersted field induced asymmetric energy landscape”, *Physical Review Letters*, **110**, 257202 (2013).
40. J.E. Davies, D.A. Gilbert, S.M. Mohseni, R.K. Dumas, J. Åkerman, and Kai Liu, “Reversal mode instability in perpendicular [Co/Pd]/Cu/[Co/Ni] pseudo-spin-valves”, *Applied Physics Letters*, **103**, 022409 (2013).
41. M. Ranjbar, R. Shbiaa, R.K. Dumas, J. Åkerman, and S.N. Piramanayagam, "Spin reorientation via antiferromagnetic coupling", *Journal of Applied Physics*, **115**, 17C103 (2014).
42. E. Iacocca, R.K. Dumas, L. Bookman, S.M. Mohseni, S. Chung, M.A. Hofer, Johan Åkerman, "Confined dissipative droplet solitons in spin-valve nanowire with perpendicular magnetic anisotropy", *Physical Review Letters*, **112**, 047201 (2014).
43. S.M. Mohseni, S.R. Sani, R.K. Dumas, J. Persson, T.N. Anh Nguyen, S. Chung, Ye. Pogoryelov, P.K. Muduli, E. Iacocca, A. Eklund, and Johan Åkerman, "Magnetic droplet solitons in orthogonal nano-contact spin torque oscillators", *Physica B*, **435**, 84 (2014).
44. Y. Wei, S. Jana, R. Brucas, Ye. Pogoryelov, M. Ranjbar, R. K. Dumas, P. Warnicke, J. Åkerman, D.A. Arena, O. Karis, and P. Svedlindh, "Magnetic coupling in asymmetric FeCoV/Ru/NiFe trilayers", *Journal of Applied Physics*, **115**, 17D129 (2014).

45. D.A. Gilbert, G.T. Zimanyi, R.K. Dumas, M. Winklhofer, A. Gomez, N. Eibagi, J.L. Vicent, and Kai Liu, "Quantitative decoding of Interactions in tunable nanomagnet arrays using first order reversal curves", *Scientific Reports*, **4**, 4204 (2014).
46. S. Chung, S.M. Mohseni, S.R. Sani, E. Iacocca, R.K. Dumas, T.N. Anh Nguyen, Ye. Pogoryelov, P.K. Muduli, A. Eklund, M. Hofer, and J. Åkerman, "Spin transfer torque generated magnetic droplet solitons", *Journal of Applied Physics*, **115**, 172612 (2014).
47. T.N. Anh Nguyen, V. Fallahi, Q. Tuan Le, S. Chung, S.M. Mohseni, R.K. Dumas, C. W. Miller, and Johan Åkerman, "Investigation of the tunability of spin configuration inside exchange coupled springs of hard/soft magnets", *IEEE Transactions on Magnetics*, **50**, 2004906 (2014).
48. R.K. Dumas, S.R. Sani, S.M. Mohseni, E. Iacocca, Ye. Pogoryelov, P.K. Muduli, S. Chung, P. Dürrenfeld, and Johan Åkerman, "Recent advances in nano-contact spin torque oscillators", *IEEE Transactions on Magnetics*, **50**, 4100107 (2014).
49. R.K. Dumas, P.K. Greene, D.A. Gilbert, L. Ye, C. Zha, J. Åkerman, and Kai Liu, "Accessing different spin-disordered states using first-order reversal curves", *Physical Review B*, **90**, 104410 (2014).
50. R.K. Dumas and J. Åkerman, "Spintronics: Channelling spin waves", *Nature Nanotechnology*, **9**, 503 (2014).
51. T.N. Anh Nguyen, R. Knut, V. Fallahi, S. Chung, Q. Tuan Le, S.M. Mohseni, O. Karis, S. Peredkov, R.K. Dumas, C. W. Miller, and J. Åkerman, "Depth-dependent magnetization profiles of hybrid exchange springs", *Physical Review Applied*, **2**, 044014 (2014).
52. A. Houshang, M. Fazlali, S.R. Sani, P. Dürrenfeld, E. Iacocca, J. Åkerman, and R.K. Dumas, "Effect of excitation fatigue on the synchronization of multiple nanocontact spin torque oscillators", *IEEE Magnetics Letters*, **5**, 300404 (2014).
53. M. Ranjbar, P. Dürrenfeld, M. Haidar, E. Iacocca, M. Balinsky, T.Q. Le, M. Fazlali, A. Houshang, A. Awad, R.K. Dumas, and J. Åkerman, "CoFeB based spin Hall nano-oscillators", *IEEE Magnetics Letters*, **5**, 300504 (2014).
54. S. Tacchi, T.N. Anh Nguyen, G. Gubbiotti, M. Madami, G. Carlotti, M.G. Pini, A. Rettori, V. Fallahi, R.K. Dumas, and J. Åkerman, "[Co/Pd]-CoFeB exchange springs with tunable gap of spin wave excitations", *Journal of Physics D: Applied Physics*, **47**, 495004 (2014).
55. K. Lodewijks, N. Maccaferri, T. Pakizeh, R.K. Dumas, I. Zubritskaya, J. Åkerman, P. Vavassori, and A. Dmitriev, "Magnetoplasmonic design rules for active magneto-optics", *Nano Letters*, **14**, 7207 (2014).
56. Y. Wei, S. Akansei, T. Thesleff, I. Harward, R. Brucas, M. Ranjbar, S. Jana, P. Lansåker, Y. Pogoryelov, R.K. Dumas, K. Leifer, O. Karis, J. Åkerman, Z. Celinski, and P. Svedlindh, "Exponentially decaying magnetic coupling in sputtered thin film FeNi/Cu/FeCo trilayers", *Applied Physics Letters* **106**, 042405 (2015).
57. E. Iacocca, P. Dürrenfeld, Olle Heinonen, J. Åkerman, and R.K. Dumas, "Mode coupling mechanisms in nano-contact spin torque oscillators", *Physical Review B*, **91**, 104405 (2015).
58. M. Haidar, M. Ranjbar, M. Balinsky, R.K. Dumas, S. Khartsev, and J. Åkerman, "Thickness and temperature dependent magnetodynamic properties of YIG thin films" *Journal of Applied Physics*, **117**, 17D119 (2015).
59. C. Morrison, J.J. Miles, T.N. Anh Nguyen, Y. Fang, R.K. Dumas, J. Åkerman, and T. Thomson, "Exchange coupling in hybrid anisotropy magnetic multilayers quantified by vector magnetometry", *Journal of Applied Physics*, **117**, 17B526 (2015).

60. I. Zubritskaya, K. Lodewijks, N. Maccaferri, A. Mekonnen, R.K. Dumas, J. Åkerman, P. Vavassori, and A. Dmitriev, "Active magnetoplasmonic ruler", *Nano Letters* **15**, 3205 (2015).
61. M. Madami, E. Iacocca, S. Sani, G. Gubbiotti, S. Tacchi, R.K. Dumas, J. Åkerman, and G. Carlotti, "Propagating spin waves excited by spin-transfer torque: A combined electrical and optical study", *Physical Review B*, **92**, 024403 (2015).
62. Y. Yin, F. Pan, M. Ahlberg, M. Ranjbar, P. Dürrenfeld, A. Houshang, M. Haidar, L. Bergqvist, Y. Zhai, R.K. Dumas, A. Delin, and J. Åkerman, "Tunable permalloy-based films for magnonic devices", *Physical Review B* **92**, 024427 (2015).
63. Y. Wei, P. Svedlindh, M. Kostylev, M. Ranjbar, R.K. Dumas, and J. Åkerman, "Measuring acoustic mode resonance alone at multiple unsaturated states as a sensitive technique to extract the antiferromagnetic coupling strength", *Physical Review B* **92**, 064418 (2015).
64. Y. Zhou, E. Iacocca, A. Awad, R.K. Dumas, F.C. Zhang, and J. Åkerman, "Dynamical magnetic skyrmions", *Nature Communications* **6**, 8193 (2015).
65. M. Balinsky, M. Ranjbar, M. Haidar, P. Dürrenfeld, S. Khartsev, A. Slavin, J. Åkerman, and R.K. Dumas, "Spin pumping and the inverse spin Hall effect via magnetostatic surface spin wave modes in YIG/Pt bilayers", *IEEE Magnetics Letters* **6**, 3000604 (2015).
66. M. Hanson, R. Bručas, T. Antosiewicz, R.K. Dumas, B. Hjörvarsson, V. Flovik, and E. Wahlström, "Arrays of elliptical Fe(001) nanoparticles: magnetization reversal, dipolar interactions, and effects of finite array sizes", *Physical Review B*, **92**, 094436 (2015).
67. R. Sharma, P. Dürrenfeld, M. Ranjbar, R.K. Dumas, J. Åkerman, and P.K. Muduli, "Modulation rate study in spin torque oscillator based wireless communication systems", *IEEE Transactions on Magnetics* **51**, 1401304 (2015).
68. P. Dürrenfeld, F. Gerhard, J. Chico, R.K. Dumas, M. Ranjbar, A. Bergman, L. Bergqvist, A. Delin, C. Gould, L.W. Molenkamp, and J. Åkerman, "Tunable damping, saturation magnetization, and exchange stiffness of half-Heusler NiMnSb thin films", *Physical Review B* **92**, 214424 (2015).
69. A. Houshang, E. Iacocca, P. Dürrenfeld, S.R. Sani, J. Åkerman, and R.K. Dumas, "Spin wave beam mediated synchronization of nano-contact spin torque oscillators", *Nature Nanotechnology*, **11**, 280 (2016).
70. D.A. Gilbert, J. Olamit, R.K. Dumas, B.J. Kirby, A. Grutter, B.B. Maranville, E. Arenholz, J. A. Borchers, and K. Liu, "Tunable positive exchange bias via redox-driven oxygen migration", *Nature Communications* **7**, 11050 (2016).
71. S. Chung, A. Eklund, E. Iacocca, S.M. Mohseni, S.R. Sani, L. Bookman, M.A. Hofer, R.K. Dumas, and J. Åkerman, "Magnetic droplet nucleation in orthogonal nano-contact spin-torque oscillators", *Nature Communications*, **7**, 11209 (2016).
72. M. Fazlali, M. Dvornik, E. Iacocca, P. Dürrenfeld, M. Haidar, J. Åkerman, and R.K. Dumas, "Homodyne detected ferromagnetic resonance of in-plane magnetized nano-contacts: composite spin wave resonances and their excitation mechanism", *Physical Review B*, **93**, 134427 (2016).
73. T. Chen, R.K. Dumas, A. Eklund, P.K. Muduli, A. Houshang, A.A. Awad, P. Dürrenfeld, G. Malm, A. Rusu, J. Åkerman, "Spin-torque and spin-Hall nano-oscillators", *Proceedings of the IEEE*, in press.
74. A.A. Awad, P. Dürrenfeld, A. Houshang, R.K. Dumas, and J. Åkerman, "Long range mutual synchronization of spin Hall nano-oscillators", *Nature Materials*, under review.

Conference Proceedings and Other Publications

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1. “Spin wave beam mediated driven synchronization of NC-STOs”, A. Houshang, E. Iacocca, P. Dürrenfeld, S.R. Sani, J. Åkerman, and R.K. Dumas, 2016 MRS Spring Meeting, Phoenix, Arizona, March 31, 2016.
2. “Toggling synchronization in nano-contact spin torque oscillators with spin wave beams”, A. Houshang, E. Iacocca, P. Dürrenfeld, S.R. Sani, J. Åkerman, and R.K. Dumas, 2016 APS March Meeting, Baltimore, Maryland, March 16, 2016.
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4. “Spin wave mode coexistence: A consequence of the Oersted field induced asymmetric energy landscape”, R.K. Dumas, E. Iacocca, S. Bonetti, S.R. Sani, S.M. Mohseni, A. Eklund, J. Persson, O. Heinonen, and Johan Åkerman, 2013 APS March Meeting, Baltimore, Maryland, March 22, 2013.
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