Axel Hoffmann

WORK:
Argonne National Laboratory
Materials Science Division
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RESEARCH EXPERIENCE

Argonne National Laboratory

Senior Group Leader *2014 – present*
- Magnetic Films Group

Materials Scientist *2001 – 2014*
- Pure Spin Currents
- Nanomagnetism

Assistant Materials Scientist *2001 – 2005*
- Magnetic Nanostructures
- Exchange bias
- Biomagnetic sensors

Los Alamos National Laboratory

Postdoctoral Fellow *1999 – 2001*
- Neutron-scattering on magnetic heterostructures.

University of California, San Diego *1995 – 1999*

Graduate research with Prof. Ivan K. Schuller
- Magnetic nanostructures
- Periodic pinning in superconducting films,
- Persistent photoconductivity in high-Tc superconductors,
- Combinatorial search for new superconductors using phase-spread alloys.

Rheinisch-Westfälische Technische Hochschule Aachen *1993 – 1994*

Diploma research thesis with Prof. Gernot Güntherodt
- Anisotropy of the superconducting ordering parameter in high-T_c materials investigated with electronic Raman scattering.

University of California, San Diego *1992 – 1993*

Graduate research with Prof. Ivan K. Schuller
- Flux flow transformer in YBCO-STO-YBCO trilayers.

• EDUCATION

The University of Chicago, Booth School of Business *2011 - 2012*
Chicago, IL
- Strategic Laboratory Leadership Program

University of California, San Diego *1988 - 1994*
La Jolla, CA
- Ph.D. in Physics, February 1999.
  Advisor: Ivan K. Schuller
  Thesis Title: "Periodic Pinning in Superconducting Nb Thin Films"

Rheinisch-Westfälische Technische Hochschule Aachen *1988 - 1994*
Aachen, Germany
- Diplom Degree in Physics with Honors, December 1994.
  Advisor: Gernot Güntherodt
  Thesis Title: "Elektronische Raman-Streuung in Hochtemperatur-Supraleitern in Abhängigkeit von der Anisotropie"

AWARDS

American Vacuum Society *2015*
- Outstanding Researcher Award of the AVS Prairie Chapter

IEEE *2014*
- Fellow

American Physical Society *2014*
- Outstanding Referee

American Physical Society *2011*
- Fellow

IEEE Magnetics Society *2011*
- Distinguished Lecturer

IEEE *2009*
- Senior Membership

Argonne National Laboratory, Argonne, Illinois *2003*
- Pacesetter Award, October 2003

Los Alamos National Laboratory, Los Alamos, New Mexico *1999*
- Director's Funded Postdoctoral Fellowship, September 1999

Rheinisch-Westfälische Technische Hochschule Aachen, Aachen, Germany *1995*
- Springorum Medal for Diploma thesis with honors, June 1995

• PROFESSIONAL SERVICE

MMM Conference Advisory Committee *2014*
- Chair

MMM 2013, Denver, Colorado *2013*
- General Chair

IEEE Magnetics Society *2010 – 2012*
- Member of the IEEE Magnetics Society Advisory Committee

MMM 2010, Atlanta, Georgia *2010*
- Program Chair

American Institute of Physics *Since 2009*
- Associate Editor, Journal of Applied Physics

American Physical Society *2007 – 2010*
- Vice-Chair, Chair-Elect, Chair, and Past-Chair of the Topical Group on Magnetism & its Applications

IEEE Magnetics Society *2007 – 2009*
- Chair of the IEEE Magnetics Society Technical Committee

MMM/Intermag 2007, Baltimore, Maryland *2007*
- Publication Chair (IEEE)

Los Alamos National Laboratory, Los Alamos, New Mexico *2003 – 2014*
- Member of the LANSCE Materials Program Advisory Committee

Reviews for Funding Agencies *ongoing*
- Including Department of Energy, National Science Foundation, European Research Council, and German Science Foundation (DFG)

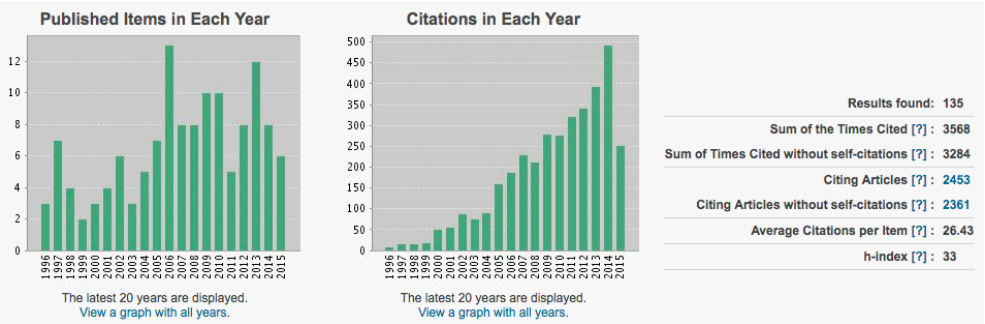
Reviews for Journals *ongoing*
- Including Science, Nature, Nat. Mater., Nat. Nanotechn., Nat. Phys., Phys. Rev. Lett., Adv. Funct. Mater., Appl. Phys. Lett., and Phys. Rev. B

International Advisory Committee Member for Conferences
- ICMS 2016, Fethiye, Turkey; ICM 2015, Barcelona, Spain; ICMS 2014, Antalya, Turkey; ICM 2012, Busan, Korea

Program Committee Member for Conferences
- MML 2013, Kyoto, Japan; Joint MMM-Intermag 2010, Washington, D.C.; Intermag 2009, Sacramento, California; MMM 2008, Austin, Texas; MMM 2007, Tampa, Florida; Joint MMM-Interamg 2007, Baltimore, Maryland; and MMM 2005, San Jose, California

Publications and Presentations

- Over 100 Invited Talks at U.S. and Foreign Research Conferences (details see pp. 7–15)
- Over 100 Invited Seminars at U.S. and Foreign Research Institutions (details see pp. 17–28)
- Over 90 publications in Peer-Reviewed Journals (details see pp. 29–40)
- Over 50 publications in Conference Proceedings (details see pp. 41–47)
- 4 Book Chapters, 1 Book (details see p. 48)
- In total more than 3000 citations, h-index: 33



Patents

- US Patent # 7,639,359 *2009*
  "Magneto-optic biosensor using bio-functionalized magnetized nanoparticles"
  S.-H. Chung, A. F. Hoffmann, and S. D. Bader
- US Patent # 7,323,113 *2008*
  "Pattern transfer with self-similar sacrificial mask layer and vector magnetic field sensor"
  A. Hoffmann
- US Patent # 7,042,036 *2006*
  "Magnetic memory using single domain switching by direct current"
  S.-H. Chung and A. F. Hoffmann

Professional Associations

- American Physical Society
- American Vacuum Society
- Deutsche Physikalische Gesellschaft e.V.
- Institute of Electronic and Electrical Engineers (IEEE), Senior Member
- Materials Research Society
- Neutron Scattering Society of America

POSTDOCS SUPERVISED

Post-Doctoral Researchers

- Wanjun Jiang *2014 – present*
- Benjamin Jungfleisch *2014 – present*
- Wei Zhang *2013 – present*
- Vincent Vlaminck *2010 – 2013*
  (now assistant professor at Universidad San Francisco de Quito, Ecuador)
- Helmut Schultheiß *2010 – 2013*
  (now research scientist at Helmholtz-Zentrum Dresden-Rossendorf, Germany)
- Oleksander Mosendz *2008 – 2010*
  (now research staff at HGST)
- Goran Mihajlović *2007 – 2010*
  (now research staff at HGST)
- Paolo Messina *2008 – 2009*
  (now at NewMediaLytic)
- Yi Ji *2003 – 2006*
  (now associate professor at University of Delaware)
- Seok-Hwan Chung *2003 – 2007*
  (now research scientist at Daegu Gyeongbuk Institute of Science and Technology, South Korea)

STUDENTS SUPERVISED

Graduate Students

- Hilal Saglam *2015 – present*
  (now Ph.D. student at Illinois Institute of Technology)
- Pavel Lapa *2014 – present*
  (now Ph.D. student at Texas A&M University)
- Joseph Sklenar *2014 – present*
  (now Ph.D. student at Northwestern University)
- Guan-Yu Luo *2013*
  (now Ph.D. student at National Taiwan University, Taiwan)
- Katrin Schultheiß *2010 – 2013*
  (now postdoctoral researcher at Helmholtz-Zentrum Dresden-Rossendorf, Germany)
- Oscar Arnarche *2006 – 2007*
  (now professor at Universidad de Antioquia, Colombia)
- Klaus Brüggemann *2005 – 2006*
- Volker Rose *2005*
  (now staff scientist at Argonne National Laboratory)
- Gloria Campillo *2004*
  (now professor at Universidad de Antioquia, Colombia)

Undergraduate students

- Nicolas Ferrer *2015*
  (now master student at Universitat Autònoma de Barcelona)
- Sebastian Höll *2009*
- Michael Patrick *2008 – 2009*
  (now graduate student at Case-Western University)

Invited Talks at Conferences

In Total More than 100 Invited Talks at U.S. and Foreign Research Conferences

International Workshop on Spintronics with Antiferromagnets *2015*
Sendai, Japan, November 16–17, 2015
- "Spin Hall Effects in CuAu-I-type metallic antiferromagnets"

14th International Union of Materials Research Societies – International Conference on Advanced Materials *2015*
Jeju, South Korea, October 25–29, 2015
- "Electrically Driven Magnetization Dynamics in Ferrimagnetic Oxide Insulators"

SpinIcur Summer School 2015 *2015*
Braga, Portugal, September 7–11, 2015
- "Spin Hall Effects in Metals"

22nd International Colloquium on Magnetic Films and Surfaces *2015*
Cracow, Poland, July 12–17, 2015
- "Magnetization Dynamics Driven by Spin Hall Effects"

20th International Conference on Magnetism *2015*
Barcelona, Spain, July 5–10, 2015
- "Electric Manipulations of Spin Textures"

Recent Trends in Nanomagnetism, Spintronics, and their Application *2015*
San Sebastian, Spain, June 30–July 3, 2015
- "Spin Hall Effects in Magnetically Ordered Materials"

Hefei Mini-Workshop on Skyrmions *2015*
Hefei, China, May 18–19, 2015
- "Electric Manipulation of Skyrmions in Metals and Insulators"

Intermag 2015 *2015*
Beijing, China, May 11–15, 2015
- "Electric Manipulation of Skyrmions in Metals and Insulators"

Recent Advances in Spintronics *2015*
Safed, Israel, May 10–14, 2015
- "Blowing Magnetic Skyrmion Bubbles"

2015 Conference on Magnetism and Its Applications *2015*
Shanghai, China, January 31–February 2, 2015
- "Electric Manipulations of Spin Textures"

III Brazilian Workshop on Magnetization Dynamics *2014*
Santa Maria, Brazil, November 19–21, 2014
- "Connecting Spin Waves to Charge Currents"

INVITED TALKS AT CONFERENCES (CONT.)

59th Annual Magnetism & Magnetic Materials Conference *2014*
Honolulu, Hawaii, November 3–7, 2014
- "Insights about spin Hall effects from spin pumping"

Workshop on Oxide Materials: Novel Multifunctional Properties *2014*
Cali, Colombia, September 15–19, 2014
- "Magnetization dynamics in nanometer-thick yttrium iron garnet films"
- "Magnetic skyrmions in metals and insulators"

SPIE NanoScience+Engineering *2014*
San Diego, California, August 17–24, 2014
- "Insight about spin Hall effects from spin pumping"

International Workshop on Nanoscale Spectroscopy and Nanotechnology *2014*
Chicago, Illinois, July 28–31, 2014
- "Connecting Spin Waves to Charge Currents"

Spincaloritronics VI *2014*
Irsee, Germany, July 14–18, 2014
- "Reduction of Spin Hall Effects due to Magnetic Proximity"

Concepts in Spintronics *2013*
Santa Barbara, California, September 30–October 4, 2013
- "Electric control and detection of spinwaves"

Experimental Condensed Matter Physics PI Meeting *2013*
Gaithersburg, Maryland, September 23–25, 2013
- "Magnetic thin films"

2013 JSAP-MRS Joint Symposia *2013*
Kyoto, Japan, September 16–20, 2013
- "Magnetic damping in nanometer-thick yttrium iron garnet films"
- "Connecting Spinwaves to Charge Currents in Ferromagnetic/Non-magnetic Heterostructures"

Donostia International Conference on Nanoscaled Magnetism and Applications *2013*
San Sebastian, Spain, September 9–13, 2013
- "Charge Voltages from Magnetization Dynamics"

SPIE NanoScience+Engineering *2013*
San Diego, California, August 25–29, 2013
- "Magnetic damping in nanometer-thick yttrium iron garnet films"

Magnonics 2013 *2013*
Varberg, Sweden, August 4–8, 2013
- "Electric control and detection of spin waves"

INVITED TALKS AT CONFERENCES (CONT.)

International French-USA Workshop "Toward low power spintronics devices" *2013*
La Jolla, California, July 8–12, 2013
- "Electric control and detection of spin waves"

Spin Caloritronics V *2013*
Columbus, Ohio, May 12–15, 2013
- "Charge Voltages from Magnetization Dynamics"

MXLS13 "New Opportunities for Magnetic Dynamics and Materials at NSLS-II and MAX-IV" *2013*
Vail, Colorado, March 24–28, 2013
- "Imaging Spin Currents"

2013 March Meeting of the American Physical Society *2013*
Baltimore, Maryland, March 18–22, 2013
- "Charge Voltages from Magnetization Dynamics"

W.-E. Hereaus Seminar "Spin-orbit driven transverse transport phenomena" *2012*
Bad Honnef, Germany, December 3–6, 2012
- "Quantifying Spin Hall Effects in Non-Magnetic Metals"

XXX Conference Egyptian Materials Society *2012*
Marsa Alam, Egypt, November 24–27, 2012
- "Quantifying Spin Hall Effects in Metals"
- "Connecting Spinwaves to Electronics: Towards Charge-Free Spintronics"

Japan Society of Applied Physics 73rd Fall Meeting *2012*
Matsuyama, Japan, September 11–14, 2012
- "Quantifying Spin Hall Effects in Metals"
- "Connecting Spinwaves to Electronics: Towards Charge-Free Spintronics"

Spin Caloritronics IV *2012*
Sendai, Japan, June 2–5, 2012
- "Quantifying Spin Hall Effects in Non-Magnetic Metals"

Materials Research Society Spring Meeting 2012 *2012*
San Francisco, California, April 9–13, 2012
- "Quantifying Spin Hall Effects in Non-Magnetic Metals"

Magnetic Single Nano-Object Workshop & School *2012*
Les Houches, France, February 5–10, 2012
- "Quantifying Spin Hall Effects in Non-Magnetic Metals"

Bilateral NTU/ANL Workshop *2012*
Taipei, Taiwan, January 12–14, 2012
- "Spin Hall Effects: A Pathway towards Charge-Free Spintronics"

INVITED TALKS AT CONFERENCES (CONT.)

Center for Materials for Information Technology Research Workshop *2011*
Tuscaloosa, Alabama, October 28, 2011
- "Discharging Spintronics: Pure Spin Currents"

Symposium "Physics at the Nanoscale" *2011*
Madrid, Spain, October 18–21, 2011
- "Discharging Spintronics: Pure Spin Currents"

8th IEEE Romanian Magnetic Society Chapter Conference *2011*
Iaşi, Romania, October 17, 2011
- "Discharging Spintronics: Pure Spin Currents"

Magnetics Symposium 2011 *2011*
Singapore, Singapore, October 3–5, 2011
- "Discharging Spintronics: Pure Spin Currents"

1st Centennial of Superconductivity International Workshop *2011*
Cali, Colombia, June 29–July 1, 2011
- "Superconducting vortex pinning with magnetic dots: Does the size and magnetization matter?"

II International Conference for Young Scientists – Low Temperature Physics *2011*
Kharkov, Ukraine, June 6–10, 2011
- "Pure Spin Currents: Discharging Spintronics"

IEEE Magnetics Society Summer School *2011*
New Orleans, Lousiana, May 22–28, 2011
- "Spintronics"

Intermag 2011 *2011*
Taipei, Taiwan, April 25–29, 2011
- "Quantifying Spin-Hall Effects in Metals"

Korean Physical Society Meeting 2011 *2011*
Daejon, Korea, April 13–15, 2011
- "Quantifying Spin-Hall Effects in Metals"

APS March Meeting 2011 *2011*
Dallas, Texas, March 21–25, 2011
- "Quantifying Spin-Hall Effects in Nonmagnetic Metals"

75. Jahrestagung der DPG und DPG Frühjahrstagung *2011*
Dresden, Germany, March 13–18, 2011
- "Quantifying Spin-Hall Effects in Nonmagnetic Metals"

INVITED TALKS AT CONFERENCES (CONT.)

International Conference on Quantum Effects in Solids of Today *2010*
New Dehli, India, December 20–23, 2010
- "Quantifying Spin-Hall Effects in Metals"

International Conference on Magnetic Materials *2010*
Kolkata, India, October 25–29, 2010
- "Quantifying Spin-Hall Effects in Metals"

Advanced Light Source Users' Meeting *2010*
Berkeley, California, October 13–15, 2009
- "New Insights into Spin Relaxation from Pure Spin Currents"

95ª Reunión Nacional de la Asociación Física Argentina *2010*
Malargüe, Argentina, September 28–October 1, 2010
- "Teaching Electrons New Tricks: Pure Spin Currents"

2010 IEEE 7th International Symposium on Metallic Multilayers *2010*
Berkeley, California, September 19–24, 2010
- "Pure Spin Currents in Silver Nanowires"

COMA-RUGA 2010, *2010*
6th International Workshop on Nanomagnetism and Superconductivity
Coma-Ruga, Spain, June 30–July 4, 2010
- "Quantifying Spin Hall Effects in Non-Magnetic Metals"

NordicSpin'10 – 2nd Nordic Workshop on Spintronics and Nanomagnetism *2010*
Gimo, Sweden, May 7–9, 2010
- "Quantifying Spin Hall Effects in Metals"

2nd International Conference on Advanced Materials and their Applications *2010*
and its workshop on "New Trends in Nanoscience and Laser Physics"
Cairo, Egypt, April 6–8, 2010
- "Teaching Electrons New Tricks: Pure Spin Currents"

International Workshop on Spin Current and Spin Caloritronics *2010*
Sendai, Japan, February 8–10, 2010
- "Spin Hall Effects in Gold, Platinum, and Molybdenum"

Taiwan-Argonne Workshop on Nano-structured Materials *2010*
Tainan, Taiwan, February 1–2, 2010
- "New Insights into Spin Relaxation and Scattering from Pure Spin Currents"

2009 Advanced Light Source Users' Meeting *2009*
Berkeley, California, October 15–17, 2009
- "Pure Spin Currents via Non-local Injection and Spin Pumping"

INVITED TALKS AT CONFERENCES (CONT.)

XXXII Encontro Nacional de Física da Matéria Condensada *2009*
Águas de Lindóia, Brazil, May 11 – 15, 2009
- "Teaching Electrons New Tricks: Pure Spin Currents"

Asian Magnetic Conference *2008*
Busan, Korea, December 10 – 13, 2008
- "Exchange Biased Magnetic Vortices"

2nd Internal Workshop "Vortex dynamics and its future" *2008*
Seoul, Korea, December 8 – 9, 2008
- "Exchange Biased Magnetic Vortices"

X Congreso Iberoamericano de Metalurgia y Materiales Iberomet *2008*
Cartagena de Indias, Colombia, October 13 – 17, 2008
- "Pure Spin Currents in Lateral Spin-Valves"

5th Nanoscale Spectroscopy and Nanotechnology – *2008*
2nd Spin Polarized Scanning Tunneling Microscopy International Workshop
Athens, Ohio, July 15 – 19, 2008
- "Pure Spin Currents in Lateral Spin-Valves"

Strongly Correlated Electron Workshop on Oxide Heterostructures *2008*
Oak Ridge, Tennessee, June 17 – 18, 2008
- "Interfacial Magnetism in Complex Oxide Heterostructures"

First Nordic Workshop on Spintronics and Nanomagnetism *2008*
Bålsta, Sweden, April 22 – 24, 2008
- "Pure Spin Currents in Lateral Spin-Valves"

52nd Magnetism and Magnetic Materials Conference *2007*
Tampa, Florida, November 5 – 9, 2007
- "Pure Spin Currents in Lateral Spin-Valves"

XXII Congreso Nacional de Física *2007*
Ibague, Colombia, October 22 – 26, 2007
- "Shaken Not Stirred: Using Brownian Motion for Biomagnetic Sensing"

IEEE Sixth Metallic Multilayer Symposium *2007*
Perth, Australia, October 14 – 19, 2007
- "Exchange Biased Vortices"

Materials Science & Technology 2007 Conference and Exhibition *2007*
Detroit, Michigan, September 16 – 20, 2007
- "Spin Injection, Diffusion, and Detection in Lateral Spin-Valves"

International Storage Technology Symposium 2007 *2007*
Kalamata, Greece, June 17 – 22, 2007
- "Biomagnetic Sensing via Brownian Motion"

INVITED TALKS AT CONFERENCES (CONT.)

Strategic Partnership for Research in Nanotechnology IV *2007*
Houston, Texas, February 6 – 7, 2007
- "Shaken Not Stirred: Magnetic Viruses for Biomagnetic Sensing"

Trends on Novel Materials *2006*
Santa Marta, Colombia, October 16 – 20, 2006
- "Lateral Spin Transport in Metallic Devices"

Kinken-Wakate, 3rd Materials Science School for Young Scientists *2006*
"Physics and Applications of Advanced Magnetic Materials"
Sendai, Japan, August 26 – 28, 2006
- "Shaken Not Stirred: Magnetic Viruses for Biomagnetic Sensing"

International Conference on Magnetism 2006 *2006*
Kyoto, Japan, August 20 – 25, 2006
- "Shaken Not Stirred: A New Way of Biomagnetic Sensing"

Ultrasmooth Summer School *2006*
Durham, United Kingdom, July 9 – 14, 2006
- "Lateral Spintransport: Teaching Electrons New Tricks"

Intermag 2006 *2006*
San Diego, California, May 8 – 12, 2006
- "Shaken Not Stirred: Magnetic Viruses for Biomagnetic Sensing"

Midwest Workshop on Quantum Transport and Magnetics *2006*
Evanston, Illinois, March 27 – 28, 2006
- "Shaken Not Stirred: A New Approach to Biomagnetic Sensing"

APS March Meeting 2006 *2006*
Baltimore, Maryland, March 13 – 17, 2006
- "Magnetic Viruses: Utilizing Self-Assembly for Biomedical Applications"

Pacifichem 2005 *2005*
Honolulu, Hawaii, December 15 – 20, 2005
- "Shaken Not Stirred, Using the Brownian Motion of Magnetite Nanoparticles for Biomagnetic Sensing"

Pacific Polymer Federation IX Conference *2005*
Maui, Hawaii, December 11 – December 14, 2005
- "Using Brownian Motion of Magnetic Nanoparticles for Biomagnetic Sensing"

AVS 52nd International Symposium *2005*
Boston, Massachussetts, October 30 – November 4, 2005
- "Shaken Not Stirred: A New Approach to Biomagnetic Sensing"

INVITED TALKS AT CONFERENCES (CONT.)

US –Spain Workshop on Nanoscale Materials *2005*
Segovia, Spain, September 20 – 23, 2005
- "Teaching Spins new Tricks: Magnetotransport in Lateral Geometries"

12th International Conference on Composites/Nano Engineering *2005*
Santa Cruz de Tenerife, Spain, August 1 – 6, 2005
- "Incommensurate Magnetization Profiles in Complex Oxide Heterostructures"

2004 CSUI Conference on Graduate Student Research and Research in Nano-Science and Technology *2004*
Argonne, Illinois, November 5–6, 2004
- "Separating Spin and Charge in Lateral Magnetotransport Structures"

Workshop on Nanomagnetism Using X-ray Techniques *2004*
Lake Geneva, Wisconsin, August 29 – September 1, 2004
- "Magnetic Structure at Buried Interfaces"

Nanoscience Workshop *2004*
Chicago, Illinois, August 25, 2004
- "Nanomagnetism at Argonne National Laboratory"

11th International Conference on Composites/Nano Engineering *2004*
Hilton Head, South Carolina, August 8–14, 2004
- "Inhomogeneous Magnetization in $La_{0.7}Ca_{0.3}MnO_3/YBa_2Cu_3O_{7-\delta}$"

Magnetics 2004: Advancements in Magnetic Applications, Technology & Materials *2004*
Denver, Colorado, June 9–10, 2004
- "Shaken Not Stirred; A New Approach to Biomagnetic Sensing"

Satellite Seminar on Variety of Oxide Materials and Properties *2003*
Tsukuba, Japan, October 14, 2003
- "Persistent Photoconductivity in High T_c Oxides"

8th IUMRS International Conference on Advanced Materials *2003*
Yokohama, Japan, October 8 – 13, 2003
- "Persistent Photoconductivity in High T_c Oxides"

Grand Challenges in Modelling the Assembly and Properties of Nanomaterials *2003*
Argonne, Illinois, August 20 – 22, 2003
- "Magnetic Anisotropies in coupled antiferromagnetic/ferromagnetic systems"

Nanoscience Research Summer School *2003*
Argonne, Illinois, August 3 – 10, 2003
- "Spintronics"

INVITED TALKS AT CONFERENCES (CONT.)

2002 MRS Fall Meeting *2002*
Boston, Massachusetts, December 2 – 6, 2002
- "Magnetic Proximity Effects studied with Neutron Scattering"

International Workshop on Polarized Neutrons in Condensed Matter Investigations *2002*
Jülich, Germany, September 15 – 19, 2002
- "Magnetization Reversal in Exchange Bias Systems: New Insights with Polarized Neutron Reflectometry"
- "Overview of Polarized Neutrons at LANSCE"

Magnetic and Semiconductor Nanostructures Symposium at the International Materials Research Congress 2002 *2002*
Cancun, Quintana Roo, Mexico, August 25 – 29, 2002
- "Magnetic Proximity Effects"

2nd CNMS Workshop on "Magnetism in Nanostructured Materials" *2002*
Knoxville, Tennesee, June 23 – 25, 2002
- "APS beamlines for magnetism"

International Workshop on "Nanocomposites: Materials, Neutrons, and Data Interpretation" *2002*
Argonne, Illinois, March 28 – 30, 2002
- "Nanoscience and Nanotechnology Initiative at ANL"

1st CNMS Workshop on "Magnetism in Nanostructured Materials" *2001*
Oak Ridge, Tennesee, December 6 and 7, 2001
- "Neutrons as a tool for nano-magnetism"

International Conference on Neutron Scattering (ICNS 2001) *2001*
München, Germany, September 9 – 12, 2001
- "Exchange Bias in the Fe/Difluoride System"

Warren Symposium *2001*
Tegernsee, Germany, January 21 – 24, 2001
- "Future Trends in Polarized Neutron Reflectometry"

Workshop "Superlattice and Microstructure" *1999*
Cancun, Mexico, August 27 – 29, 1999
- "Artificially Induced Reconfiguration of the Vortex Lattice in Nb"

1999 Centennial Meeting of The American Physical Society *1999*
Atlanta, Georgia March 20 – 26, 1999
- "Periodic Pinning with Magnetic Dots: Does the Size and Geometry Matter?"

INVITED TALKS AT CONFERENCES (CONT.)

International Symposium on Optical Science, Engineering, and Instrumentation at SPIE's 43rd Annual Meeting *1998*
San Diego, California July 19 – 24, 1998

- "Photodoping of YBaCuO Grain Boundary Josephson Junctions"

Symposium on "Applications of spectroscopy to superconducting material" at the 215th National American Chemical Society Meeting *1998*
Dallas, Texas March 29 – April 2, 1998

- "Persistent Photoconductivity in High T_c Cuprates"

INVITED SEMINARS

In Total More than 100 Invited Seminars at U.S. and Foreign Research Institutions

University of California, Riverside *2015*
Riverside, California, June 5, 2015
- "Magnetism at the Mesoscale: Harnessing Competing Interactions"

University of California – San Diego *2015*
La Jolla, California, June 4, 2015
- "Magnetism at the Mesoscale: Harnessing Competing Interactions"

New York University *2015*
New York, New York, June 2, 2015
- "Spin Hall Effects: From Spin Current Detection to Manipulation of Skyrmions"

Nanjing University *2015*
Nanjing, China, May 20, 2015
- "Magnetism at the Mesoscale: Harnessing Competing Interactions"

Bar-Ilan University *2015*
Ramat-Gan, Israel, May 7, 2015
- "Spin Hall Effects: From Spin Current Detection to Manipulation of Skyrmions"

University of California, Davis *2015*
Davis, California, February 12, 2015
- "Magnetism at the Mesoscale: Harnessing Competing Interactions"

Fudan University *2015*
Shanghai, China, January 30, 2015
- "Magnetism at the Mesoscale: Harnessing Competing Interactions"

SLAC National Accelerator Laboratory *2014*
Menlo Park, California, December 5, 2014
- "Spin Hall Effects: From Spin Current Detection to Manipulation of Skyrmions"

Centro Brasileiro de Pesquisas Fisicas *2014*
Rio de Janeiro, Brazil, November 20, 2014
- "Electric Manipulation of Spin Textures"

University of Illinois at Chicago *2014*
Chicago, Illinois, October 30, 2014
- "Electric Manipulation of Spin Textures"

Northwestern University *2014*
Evanston, Illinois, October 16, 2014
- "Electric Manipulation of Spin Textures"

INVITED SEMINARS (CONT.)

Ohio State University *2013*
Columbus, Ohio, November 21, 2013
- "Connecting Spin Waves to Electronics: Towards Charge-Free Spintronics"

HGST *2013*
San Jose, California, September 5, 2013
- "Spin Hall Effects in Metals"

Samsung *2013*
Milpitas, California, August 30, 2013
- "Spin Hall Effects in Metals"

Texas A&M University *2013*
College Station, Texas, February 22, 2013
- "Connecting Spin Waves to Electronics: Towards Charge-Free Spintronics"

Kyoto University *2012*
Kyoto, Japan, September 11, 2012
- "Pure Spin Currents: Discharging Spintronics"

Mie University *2012*
Tsu, Japan, September 10, 2012
- "Pure Spin Currents: Discharging Spintronics"

ETH Zürich *2012*
Zürich, Switzerland, February 10, 2012
- "Spin Hall Effects: A Pathway towards Charge-Free Spintronics"

Argonne National Laboratory, Materials Science Colloquium *2012*
Argonne, Illinois, January 19, 2012
- "Spin Hall Effects: A Pathway towards Charge-Free Spintronics"

Simon-Fraser University *2011*
Vancouver, Canada, November 29, 2011
- "Pure Spin Currents: Discharging Spintronics"

University of Washington *2011*
Seattle, Washington, November 28, 2011
- "Pure Spin Currents: Discharging Spintronics"

University of California – San Diego *2011*
San Diego, California, November 22, 2011
- "Pure Spin Currents: Discharging Spintronics"

California State University Long Beach *2011*
Long Beach, California, November 21, 2011
- "Pure Spin Currents: Discharging Spintronics"

INVITED SEMINARS (CONT.)

University of California Los Angeles *2011*
Los Angeles, California, November 17, 2011
- "Pure Spin Currents: Discharging Spintronics"

University of California, Irvine *2011*
Irvine, California, November 16, 2011
- "Pure Spin Currents: Discharging Spintronics"

IEEE Magnetics Society Santa Clara Valley Chapter *2011*
San Jose, California, November 15, 2011
- "Pure Spin Currents: Discharging Spintronics"

Carnegie Mellon University *2011*
Pittsburgh, Pennsylvania, October 24, 2011
- "Pure Spin Currents: Discharging Spintronics"

Boğaziçi University *2011*
Istanbul, Turkey, October 12, 2011
- "Pure Spin Currents: Discharging Spintronics"

Hong Kong University *2011*
Hong Kong, Hong Kong, October 11, 2011
- "Pure Spin Currents: Discharging Spintronics"

City University of Hong Kong *2011*
Kowloon, Hong Kong, October 10, 2011
- "Pure Spin Currents: Discharging Spintronics"

Paul-Scherrer Institut *2011*
Villingen, Switzerland, September 30, 2011
- "Pure Spin Currents: Discharging Spintronics"

Ecole Polytechnique Fédérale de Lausanne *2011*
Lausanne, Switzerland, September 29, 2011
- "Pure Spin Currents: Discharging Spintronics"

Trinity College *2011*
Dublin, Ireland, September 27, 2011
- "Pure Spin Currents: Discharging Spintronics"

Cardiff University *2011*
Cardiff, United Kingdom, September 26, 2011
- "Pure Spin Currents: Discharging Spintronics"

University of York *2011*
York, United Kingdom, September 22, 2011
- "Pure Spin Currents: Discharging Spintronics"

INVITED SEMINARS (CONT.)

University of Leeds *2011*
Leeds, United Kingdom, September 21, 2011
- "Pure Spin Currents: Discharging Spintronics"

Reykjavik University *2011*
Reykjavik, Iceland, September 19, 2011
- "Pure Spin Currents: Discharging Spintronics"

New York University *2011*
New York, New York, September 15, 2011
- "Pure Spin Currents: Discharging Spintronics"

Massachusetts Institute of Technology *2011*
Cambridge, Massachusetts, September 14, 2011
- "Pure Spin Currents: Discharging Spintronics"

Northeastern University *2011*
Boston, Massachucetts, September 13, 2011
- "Pure Spin Currents: Discharging Spintronics"

University of Southern Florida *2011*
Tampa, Florida, September 9, 2011
- "Pure Spin Currents: Discharging Spintronics"

University of Central Florida *2011*
Orlando, Florida, September 8, 2011
- "Pure Spin Currents: Discharging Spintronics"

Victoria University of Wellington *2011*
Wellington, New Zealand, August 8, 2011
- "Pure Spin Currents: Discharging Spintronics"

Monash University *2011*
Melbourne, Australia, August 5, 2011
- "Pure Spin Currents: Discharging Spintronics"

University of Wollongong *2011*
Wollongong, Australia, August 3, 2011
- "Pure Spin Currents: Discharging Spintronics"

Australian Nuclear Science and Technology Organisation *2011*
Lucas Heights, Australia, August 2, 2011
- "Pure Spin Currents: Discharging Spintronics"

Universidad de Antioquia *2011*
Medellin, Colombia, July 25, 2011
- "Pure Spin Currents: Discharging Spintronics"

INVITED SEMINARS (CONT.)

Universidad Nacional de Colombia *2011*
Bogota, Colombia, July 22, 2011
- "Pure Spin Currents: Discharging Spintronics"

Universidade Federal do Pernambuco *2011*
Recife, Brazil, July 20, 2011
- "Pure Spin Currents: Discharging Spintronics"

Universidade Federal do Rio Grande de Norte *2011*
Natal, Brazil, July 18, 2011
- "Pure Spin Currents: Discharging Spintronics"

Centro de Desenvolvimento da Tecnologia Nuclear *2011*
Belo Horizonte, Brazil, July 15, 2011
- "Pure Spin Currents: Discharging Spintronics"

Universidad de Buenos Aires *2011*
Buenos Aires, Argentina, July 13, 2011
- "Pure Spin Currents: Discharging Spintronics"

Centro Atómico Constituyentes *2011*
Buenos Aires, Argentina, July 12, 2011
- "Pure Spin Currents: Discharging Spintronics"

Pontificia Universidad Catolica *2011*
Santiago, Chile, July 7, 2011
- "Pure Spin Currents: Discharging Spintronics"

Universidad San Francisco de Quito *2011*
Quito, Ecuador, July 4 and 5, 2011
- "Pure Spin Currents: Electrical Injection"
- "Pure Spin Currents: Spin Hall Effects and Spin Pumping"

Universidad del Valle *2011*
Cali, Colombia, June 28, 2011
- "Pure Spin Currents: Discharging Spintronics"

Université de Paris-Sud *2011*
Orsay, France, June 16, 2011
- "Pure Spin Currents: Discharging Spintronics"

Université de Lyon *2011*
Lyon, France, June 15, 2011
- "Pure Spin Currents: Discharging Spintronics"

SPINTEC *2011*
Grenoble, France, June 14, 2011
- "Pure Spin Currents: Discharging Spintronics"

INVITED SEMINARS (CONT.)

Technische Universität Kaiserslautern *2011*
Kaiserslautern, Germany, June 8, 2011
- "Pure Spin Currents: Discharging Spintronics"

Nancy Université *2011*
Nancy, France, June 6, 2011
- "Pure Spin Currents: Discharging Spintronics"

Universitat de Barcelona *2011*
Barcelona, Spain, June 3, 2011
- "Pure Spin Currents: Discharging Spintronics"

nanoGune *2011*
San Sebastian, Spain, June 2, 2011
- "Pure Spin Currents: Discharging Spintronics"

Instituto de Ciencia de Materiales, *2011*
Consejo Superior de Investigaciones Científicas
Cantoblanco, Spain, May 31, 2011
- "Pure Spin Currents: Discharging Spintronics"

Universidad Complutense de Madrid *2011*
Madrid, Spain, May 30, 2011
- "Pure Spin Currents: Discharging Spintronics"

IEEE Magnetics Society Twin Cities Chapter *2011*
Minneapolis, Minnesota, May 23, 2011
- "Pure Spin Currents: Discharging Spintronics"

2011
Seagate
Bloomington, Minnesota, May 23, 2011
- "Pure Spin Currents: Discharging Spintronics"

Argonne National Laboratory, Physics Colloquium *2011*
Argonne, Illinois, May 20, 2011
- "Pure Spin Currents: Discharging Spintronics"

CINVESTAV-Unidad Queretaro *2011*
Queretaro, Mexico, May 4, 2011
- "Pure Spin Currents: Discharging Spintronics"

Universidad Nacional Autónoma de México *2011*
Mexico City, Mexico, May 2, 2011
- "Pure Spin Currents: Discharging Spintronics"

Fudan University *2011*
Shanghai, China, April 22, 2011
- "Pure Spin Currents: Discharging Spintronics"

INVITED SEMINARS (CONT.)

Nanjing University *2011*
Nanjing, China, April 20, 2011
- "Pure Spin Currents: Discharging Spintronics"

Chinese Academy of Sciences *2011*
Beijing, China, April 18, 2011
- "Pure Spin Currents: Discharging Spintronics"

National Taiwan University *2011*
Taipei, Taiwan, April 12, 2011
- "Pure Spin Currents: Discharging Spintronics"

National Tsing Hua University *2011*
Hsin-Chu, Taiwan, April 11, 2011
- "Pure Spin Currents: Discharging Spintronics"

IFW Dresden *2011*
Dresden, Germany, March 10, 2011
- "Pure Spin Currents: Discharging Spintronics"

Forschungszentrum Dresden-Rossendorf e.V. *2011*
Dresden, Germany, March 8, 2011
- "Pure Spin Currents: Discharging Spintronics"

The Academy of Sciences of the Czech Republic *2011*
Halle, Germany, March 7, 2011
- "Pure Spin Currents: Discharging Spintronics"

2011
Max-Planck-Institut für Mikrostrukturphysik
Halle, Germany, March 4, 2011
- "Pure Spin Currents: Discharging Spintronics"

Los Aalmos National Laboratory *2011*
Los Alamos, New Mexico, February 22, 2011
- "Pure Spin Currents: Discharging Spintronics"

Stanford Univeristy *2011*
Stanford, California, February 18, 2011
- "Pure Spin Currents: Discharging Spintronics"

University of California, Davis *2011*
Davis, California, February 17, 2011
- "Pure Spin Currents: Discharging Spintronics"

Advanced Light Source *2011*
Berkeley, California, February 16, 2011
- "Pure Spin Currents: Discharging Spintronics"

INVITED SEMINARS (CONT.)

Hitachi Global Storage *2011*
San Jose, California, February 15, 2011
- "Pure Spin Currents: Discharging Spintronics"

Grandis *2011*
San Jose, California, February 14, 2011
- "Pure Spin Currents: Discharging Spintronics"

Oregon State University *2011*
Corvalis, Oregon, February 11, 2011
- "Pure Spin Currents: Discharging Spintronics"

University of Denver *2011*
Denver, Colorado, February 9, 2011
- "Pure Spin Currents: Discharging Spintronics"

University of Wyoming *2011*
Laramie, Wyoming, February 8, 2011
- "Pure Spin Currents: Discharging Spintronics"

Colorado State University *2011*
Fort Collins, Colorado, February 7, 2011
- "Pure Spin Currents: Discharging Spintronics"

University of Colorado, Colorado Springs *2011*
Colorado Springs, Colorado, February 4, 2011
- "Pure Spin Currents: Discharging Spintronics"

IEEE Magnetics Society Rocky Mountain Chapter, University of Colorado, College of Engineering and Applied Science *2011*
Boulder, Colorado, February 3, 2011
- "Pure Spin Currents: Discharging Spintronics"

Ruhr Universität Bochum, SFB Seminar *2011*
Bochum, Germany, January 27, 2011
- "Pure Spin Currents: Discharging Spintronics"

Delft University of Technology *2011*
Delft, The Netherlands, January 26, 2011
- "Pure Spin Currents: Discharging Spintronics"

RWTH Aachen, Physik Kolloquium *2011*
Aachen, Germany, January 24, 2011
- "Pure Spin Currents: Discharging Spintronics"

Katholieke Universiteit Leuven *2011*
Leuven, Belgium, January 18, 2011
- "Pure Spin Currents: Discharging Spintronics"

INVITED SEMINARS (CONT.)

Forschungszentrum Jülich, Peter-Grünberg-Institut *2011*
Jülich, Germany, January 17, 2011
- "Pure Spin Currents: Discharging Spintronics"

Centro Atómico Bariloche *2010*
Bariloche, Argentina, October 5, 2010
- "Teaching Electrons New Tricks: Pure Spin Currents"

Universitat Autònoma de Barcelona *2010*
Bellaterra, Spain, June 23, 2010
- "Teaching Electrons New Tricks: Pure Spin Currents"

RWTH Aachen *2010*
Aachen, Germany, May 5, 2010
- "Teaching Electrons New Tricks: Pure Spin Currents"

Miami University *2010*
Oxford, Ohio, February 24, 2010
- "Teaching Electrons New Tricks: Pure Spin Currents"

University of California, Berkeley *2010*
Berkeley, California, February 22, 2010
- "Teaching Electrons New Tricks: Pure Spin Currents"

Nanjing University *2010*
Nanjing, China, February 4, 2010
- "Teaching Electrons New Tricks: Pure Spin Currents"

Academia Sinica *2009*
Taipei, Taiwan, October 22, 2009
- "Shaken not Stirred: Using Brownian Motion for Biomagnetic Sensing"

National Tsing Hua University *2009*
Hsinchu, Taiwan, October 21, 2009
- "Teaching Electrons New Tricks: Pure Spin Currents"

National Taiwan University *2009*
Taipei, Taiwan, October 20, 2009
- "Teaching Electrons New Tricks: Pure Spin Currents"

Centro de Desenvolvimento da Tecnologia Nuclear *2009*
Belo Horizonte, Brazil, May 18, 2009
- "Nanomagnetism at Argonne National Laboratory"

Advanced Light Source, Lawrence Berkeley National Laboratory *2009*
Berkeley, California, February 18, 2009
- "Teaching Electrons New Tricks: Pure Spin Currents"

INVITED SEMINARS (CONT.)

Hitachi Global Storage *2009*
San Jose, California, January 28, 2009
- "Teaching Electrons New Tricks: Pure Spin Currents"

Condensed Matter Seminar, University of California, Davis *2009*
Davis, California, January 22, 2009
- "Teaching Electrons New Tricks: Pure Spin Currents"

California State University Long Beach *2008*
Long Beach, California, September 22, 2008
- "Teaching Eelctrons New Tricks: Pure Spin Currents"

Simon Fraser University *2008*
Burnaby, Canada, August 1, 2008
- "Non-Local Detection of Pure Spin Currents"

Universidad de Antioquia *2007*
Medellín, Colombia, November 1, 2007
- "Shaken Not Stirred: Using Brownian Motion for Biomagnetic Sensing"

Universidad del Valle *2007*
Cali, Colombia, October 29 – 31, 2007
- "Surprises with Exchange Bias"
- "Teaching Electrons New Tricks: Pure Spin Currents"

Australian Nuclear Science And Technology Organization *2007*
Sydney, Australia, October 12, 2007
- "Shaken Not Stirred: Using Brownian Motion for Biomagnetic Sensing"

University of Delaware *2007*
Newark, Delaware, October 2, 2007
- "Shaken Not Stirred: Using Brownian Motion for Biomagnetic Sensing"

Donostia International Physics Center *2007*
San Sebastian, Spain, September 12, 2007
- "Teaching Electrons New Tricks: Pure Spin Currents"

National Institute of Standards and Technology *2007*
Boulder, Colorado, August 3, 2007
- "Pure Spin Currents"

Colorado State University *2007*
Fort Collins, Colorado, August 1, 2007
- "Exchange Biased Vortices"

Materials Science Colloquium *2007*
Argonne, Illinois, March 15, 2007
- "Pure Spin Currents"

INVITED SEMINARS (CONT.)

University of Texas at Arlington *2007*
Arlington, Texas, February 23, 2007
- "Teaching Electrons New Tricks: Pure Spin Currents"

Northern Illinois University *2007*
De Kalb, Illinois, February 2, 2007
- "Shaken Not Stirred: A New Approach to Biomagnetic Sensing"

Northwestern University *2007*
Evanston, Illinois, January 25, 2007
- "Shaken Not Stirred: A New Approach to Biomagnetic Sensing"
- "Teaching Electrons New Tricks: Pure Spin Currents"

Georgia Institute of Technology, Center for Nonlinear Science *2006*
Atlanta, GA, September 20, 2006
- "Shaken Not Stirred: A New Approach to Biomagnetic Sensing"

Mie University, Graduate School of Engineering *2006*
Tsu, Japan, August 31, 2006
- "Shaken Not Stirred: Magnetic Nanoparticles for Biomedical Applications"

Martech Seminar, Florida State University *2006*
Tallahassee, Florida, January 23, 2006
- "Shaken Not Stirred: A New Approach to Biomagnetic Sensing"

Universitat Autònoma de Barcelona *2005*
Bellaterra, Spain, September 30, 2005
- "Shaken Not Stirred: A New Approach to Biomagnetic Sensing"

Universidad Complutense de Madrid *2005*
Madrid, Spain, September 28, 2005
- "Interplay between Exchange Bias and Magnetic Anisotropies"

Forschungszentrum Jülich *2005*
Jülich, Germany, May 11, 2005
- "Shaken Not Stirred: A New Approach to Biomagnetic Sensing"

Katholieke Universiteit Leuven *2005*
Leuven, Belgium, May 9, 2005
- "Interplay between Exchange Bias and Magnetic Anisotropies"

Kavli Institute of Nanoscience, Delft University of Technology *2005*
Delft, The Netherlands, May 4, 2005
- "Shaken Not Stirred: A New Approach to Biomagnetic Sensing"

Nano-Club, RWTH Aachen *2005*
Aachen, Germany, May 2, 2005
- "Interplay between Exchange Bias and Magnetic Anisotropies"

INVITED SEMINARS (CONT.)

Kungliga Tekniska Högskolan (Royal Institute of Technology) *2005*
Stockholm, Sweden, April 26 and 27, 2005
- "Shaken not Stirred: Brownian Motion in Biological Sensing"
- "Lateral Spintransport: Teaching Electrons new Tricks"

West Virginia University *2004*
Morgantown, West Virginia, January 29, 2004
- "Shaken Not Stirred; A New Approach to Biomagnetic Sensing"

Osaka University *2003*
Osaka, Japan, October 16, 2003
- "The Role of Anisotropy in Exchange Bias"

Materials Science Colloquium *2003*
Argonne, Illinois, August 28, 2003
- "The Role of Anisotropy for Exchange Bias in Antiferromagnet/Ferromagnet Exchange Coupled Systems"

West Virginia University *2001*
Morgantown, West Virginia, October 4, 2001
- "Magnetization Reversal in Exchange Bias Systems: New Insights with Polarized Neutron Reflectometry"

Paul Scherrer Institut *2001*
Villingen, Switzerland, September 7, 2001
- "Exchange Bias in the Fe/Difluoride System"

IBM Zürich Research Laboratory *2001*
Zürich, Switzerland, September 27, 2000
- "Magnetization Reversal in Exchange Bias Systems"

Gerhard-Mercator-Universität-Duisburg *2000*
Duisburg, Germany, September 21, 2000
- "Magnetization Reversal in Exchange Bias Systems"

Rheinisch-Westfälische Technische Hochschule Aachen *2000*
Aachen, Germany, September 19, 2000
- "Exchange Bias in Fe/FeF_2 and Fe/MnF_2: Neue Einsichten mit Neutronenreflektometrie"

Friedrich-Schiller Universität Jena, Institutsseminar *2000*
Jena, Germany, March 10, 2000
- "Flusslinienverankerung mit magnetischen Punkten"

PEER REVIEWED PUBLICATIONS

In Total More than 90 Peer-Reviewed Publications

Direct observation of spin-torque ferromagnetic resonance in insulators
M. B. Jungfleisch, W. Zhang, J. Sklenar, W. Jiang, H. Chang, J. E. Pearson, J. B. Ketterson, M. Wu, and A. Hoffmann,
(unpublished).

Observation of microwave driven self-induced inverse spin Hall effect in metallic ferromagnets
M. B. Jungfleisch, W. Zhang, J. Sklenar, W. Jiang, F. Y. Fradin, J. E. Pearson, J. B. Ketterson, and A. Hoffmann,
(unpublished).

Current induced spin torque resonance in Permalloy on a monolayer MoS_2 at room temperature
W. Zhang, J. N. Sklenar, B. Hsu, W. Jiang, M. B. Jungfleisch, K. Sarkar, F. Y. Fradin, Y. Liu, J. E. Pearson, J. B. Ketterson, Z. Yang, and A. Hoffmann,
(unpublished).

Manipulation of Giant Skyrmion Bubbles in Magnetic Insulator via the Pure Spin Current
W. Jiang, P. Upadhyaya, Q. Yang, G. Yu, Z. Wang, J. Tang, K. L. Wong, M. Akyol, L.-T. Chang, M Lang, Y. Fan, Q. Wen, H. Zhang, S. G. E. te Velthuis, R. N. Schwartz, A. Hoffmann, Y. Tserkovnyak, and K. L. Wang,
(unpublished).

New Opportunities at the Frontiers of Spontronics
A. Hoffmann and S. D. Bader
Physical Review Applied, submitted.

Near Ideal Transport in Few-Layer Black Phosphorous
S. Das, W. Zhang, A. Hoffmann, M. Demarteau, and A. Roelofs,
Nano Letters, submitted.

Driving and detecting ferromagnetic resonance in insulators with the spin Hall effect
J. Sklenar, W. Zhang, M. B. Jungfleisch, W. Jiang, H. Chang, J. E. Pearson, M. Wu, J. B. Ketterson, and A. Hoffmann,
Physical Review B, submitted.

Blowing Magnetic Skyrmion Bubbles
W. Jiang, P. Upadhyaya, W. Zhang, G. Yu, M. B. Jungfleisch, F. Y. Fradin, J. E. Pearson, Y. Tserkovnyak, K. L. Wang, O. Heinonen, S. G. E. te Velthuis, and A. Hoffmann,
Science, to be published.

PEER REVIEWED PUBLICATIONS (CONT.)

Mesoscale magnetism
A. Hoffmann and H. Schultheiß,
Current Opinion in Solid State & Materials Science, to be published.

A Small Signal Amplifier Based on Ionic Liquid Gated Black Phosporous Field Effect Transistor
S. Das, W. Zhang, L. R. Thoutam, Z. Xiao, A. Hoffmann, M. Demarteau, and A. Roelofs,
IEEE Electron Device Letters **36**, 621 (2015).

A new reversal mode in exchange coupled antiferromagnetic/ferromagnetic disks: distorted viscous vortex
D. A. Gilbert, L. Ye, A. Varea, S. Agramunt-Puig, N. Del Valle, C. Navau, J. F. López-Barbera, K. S. Buchanan, A. Hoffmann, A. Sánchez, J. Sort, and J. Nogués,
Nanoscale **7**, 9878 (2015).

Reduced spin-Hall effects from magnetic proximity
W. Zhang, M. B. Jungfleisch, W. Jiang, Y. Liu, J. E. Pearson, S. G. E. te Velthuis, A. Hoffmann, F. Freimuth, and Y. Mokrousov,
Physical Review B **91**, 115316 (2015).

Spin Hall Effects in Metallic Antiferromagnets
W. Zhang, M. B. Jungfleisch, W. Jiang, J. E. Pearson, A. Hoffmann, F. Freimuth, and Y. Mokrousov,
Physical Review Letters **113**, 196602 (2014).

Engineering the Transport Gap in Phosphorene
S. Das, W. Zhang, M. Demarteau, A. Hoffmann, M. Dubey, and A. Roelofs,
Nano Letters **14**, 5733 (2014).

Study of critical exponents in doped $La_{2/3}Ca_{1/3}Mn_{1-y}Fe_yO_3$ (y = 0, 0.03) manganite films
O. Arnarche, G. Campillo, and A. Hoffmann,
Applied Physics A **117**, 937 (2014).

Nanometer-Thick Yttrium Iron Garnet Films With Extremely Low Damping
H. Chang, P. Li, W. Zhang, T. Liu, A. Hoffmann, L. Deng, and M. Wu,
IEEE Magnetics Letters **5**, 6700104 (2014).

Realization of a spin-wave multiplexer
K. Vogt, F. Y. Fradin, J. E. Pearson, S. D. Bader, T. Sebastian, B. Hillebrands, A. Hoffmann, and H. Schultheiss,
Nature Communications **5**, 3727 (2014).

Determination of the Pt spin diffusion length by spin-pumping and spin Hall effect
W. Zhang, V. Vlaminck, J. E. Pearson, R. Divan, S. D. Bader, and A. Hoffmann,
Applied Physics Letters **103**, 242414 (2013).

PEER REVIEWED PUBLICATIONS (CONT.)

Universal Method for Separating Spin Pumping from Spin Rectification Voltage in Ferromagnetic Resonance
L. Bai, P. Hyde, Y. S. Gui, C,-M. Hu, V. Vlaminck, J. E. Pearson, S. D. Bader, and A. Hoffmann,
Physical Review Letters **111**, 217602 (2013).

Spin Hall Effects in Metals
A. Hoffmann,
IEEE Transactions on Magnetics **49**, 5172 (2013).

Magnetization Dynamics Through Magnetoimpedance Effect in Isotropic $Co_2FeAl/Au/Co_2FeAl$ Full-Heusler Alloy Trilayer Films
M. A. Corrêa, V. M. Escobar, O. Trigueiro-Neto, F. Bohn, K. D. Sossmeier, C. C. Bezerra, C. Chesman, J. Pearson, and A. Hoffmann,
Applied Physics Express **6**, 093001 (2013).

Damping in Yttrium Iron Garnet Nanoscale Films Capped by Platinum
Y. Sun, H. Chang, M. Kabatek, Y.-Y. Song, Z. Wang, M. Jantz, W. Schneider, M. Wu, E. Montoya, B. Kardasz, B. Heinrich, S. G. E. te Velthuis, H. Schultheiss, and A. Hoffmann,
Physical Review Letters **111**, 106601 (2013).

Dependence of spin-pumping spin Hall effect measurements on layer thicknesses and stacking order
V. Vlaminck, J. E. Pearson, S. D. Bader, and A. Hoffmann,
Physical Review B **88**, 064414 (2013).

Observation of microwave-assisted magnetization reversal in perpendicular recording media
L. Lu, M. Wu, M. Mallary, G. Bertero, K. Srinivasan, R. Acharya, H. Schultheiß, and A. Hoffmann,
Applied Physics Letters **103**, 042413 (2013).

Magnetic field dependence of non-local lateral spin-valve signals beyond the Hanle effect
K. Výborný, G. Mihajlović, A. Hoffmann, and S. I. Erlingsson,
Journal of Physics: Condensed Matter **25**, 216007 (2013).

Mapping microwave field distributions via the spin Hall effect
V. Vlaminck, H. Schultheiss, J.E. Pearson, F.Y. Fradin, S. D. Bader, and A. Hoffmann,
Applied Physics Letters **101**, 252406 (2012).

Thermoelectric detection of spin waves
H. Schultheiss, J.E. Pearson, S.D. Bader and A. Hoffmann,
Physical Review Letters **109**, 237204 (2012).

Growth and ferromagnetic resonance properties of nanometer-thick yttrium iron garnet films
Y. Sun, Y.-Y. Song, H. Chang, M. Kabatek, M. Jantz, W. Schneider, M. Wu, H. Schultheiss, and A. Hoffmann,
Applied Physics Letters **101**, 152405 (2012).

PEER REVIEWED PUBLICATIONS (CONT.)

Spin waves turning a corner
K. Vogt, H. Schultheiss, S. Jain, J. E. Pearson, A. Hoffmann, S. D. Bader, and B. Hillebrands,
Applied Physics Letters **101**, 042410 (2012).

Anomalous Magnetoresistance in Fibonacci Multilayers
L. D. Machado, C. G. Bezerra, M. A. Correa, C. Chesman, J. E. Pearson, and A. Hoffmann,
Physical Review B **85**, 224416 (2012).

Effect of Interface-Induced Exchange Fields on Cuprate-Manganite Spin Switches
Y. Liu, C. Visani, N. M. Nemes, M. R. Fitzsimmons, L. Y. Zhu, J. Tornos, M. Garcia-Hernandez, M. Zhernenkov, A. Hoffmann, C. Leon, J. Santamaria, and S. G. E. te Velthuis,
Physical Review Letters **108**, 207205 (2012).

Electric Control of Magnetization Relaxation in Thin Film Ferromagnetic Insulators
Z. Wang, Y. Sun, Y.-Y. Song, M. Wu, H. Schultheiß, J. E. Pearson, and A. Hoffmann,
Applied Physics Letters **99**, 162511 (2011).

Magnetic-field enhancement of nonlocal spin signal in $Ni_{80}Fe_{20}$/Ag lateral spin valves
G. Mihajlović, S. I. Erlingsson, K. Výborný, J. E. Pearson, S. D. Bader, and A. Hoffmann,
Physical Review B **84**, 132407 (2011).

Symmetrical interfacial reconstruction in $La_{0.7}Ca_{0.3}MnO_3/YBa_2Cu_3O_7/La_{0.7}Ca_{0.3}MnO_3$ heterostructures
C. Visani, J. Tornos, N. M. Nemes, M. Rocci, C. Leon, J. Santamaria, S. G. E. te Velthuis, Y. Liu, A. Hoffmann, J. W. Freeland, M. Garcia-Hernandez, M. Varela, M. R. Fitzsimmons, B. J. Kirby, and S. J. Pennycook
Physical Review B **84**, 060405(R) (2011).

Detection and quantification of inverse spin Hall effect from spin pumping in permalloy/normal metal bilayers
O. Mosendz, V. Vlaminck, J. E. Pearson, F. Y. Fradin, G. E. W. Bauer, S. D. Bader, and A. Hoffmann,
Physical Review B **82**, 214403 (2010).

Enhanced spin signals due to native oxide formation in $Ni_{80}Fe_{20}$/Ag lateral spin valves
G. Mihajlović, D. K. Schreiber, Y. Liu, J. E. Pearson, S. D. Bader, A. K. Petford-Long, and A. Hoffmann,
Applied Physics Letters **97**, 112502 (2010).

Magnetic memory based on $La_{0.7}Ca_{0.3}MnO_3/YBa_2Cu_3O_7/La_{0.7}Ca_{0.3}MnO_3$ ferromagnet/superconductor hybrid structures
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