

**CV date: 8/23/2009**

**Markus Wohlgenannt**

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## **EDUCATIONAL AND PROFESSIONAL HISTORY**

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### **Education**

1998 - 2000            Ph.D., Physics, University of Utah  
1992 -1997            Undergraduate and Master program, Physics, Technical University of Graz, Austria

### **Positions**

2008 -                Associate Professor, University of Iowa, Department of Physics & Astronomy  
2002 -                Assistant Professor, University of Iowa, Department of Physics & Astronomy  
2001 - 2002           Research Assistant Professor, University of Utah, Physics Department  
2000 - 2001           Postdoctoral research associate, University of Utah, Physics Department  
1997 - 1998           Visiting Scientist, University of Utah, Physics Department

### **Honors and Awards**

2002    The Synthetic Metals Young Scientist Award, post-doc category  
2001    Outstanding Postdoctoral Research Award, awarded by the Physics Department, University of Utah.  
2000    Outstanding Graduate Research Award, awarded by the Physics Department, University of Utah.  
1999    Outstanding Graduate Research Award, awarded by the Physics Department, University of Utah.

### **Professional Memberships**

1998 -                American Physical Society

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## Students Supervised

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Degree objective	Student name	Years	Outcome
a) Ph. D. candidates			
	Emre Araci	2002-2003	changed schools
	Omer Mermer	2003-2006	graduated
	Govindarajan Veeraraghavan	2003-2006	graduated
	Yugang Sheng	2004-2008	graduated
	Tho Duc Nguyen	2004-2008	graduated
	Jim Rybicki	2006-	
	Ran Lin	2007-	
	Kent Hutchinson	2008-	
	Jia Hou	2009-	
b) Master's candidates			
	Thomas Francis	2003-2004	graduated
c) Postdocs			
	Ajey Jacob	2003-2004	
	Govindarajan Veeraraghavan	2007	
	Fujian Wang	2009	

## SCHOLARSHIP

### Publications

*Article: Fully Refereed*

1. "Spin-orbit coupling in singly charged pi-conjugated polymers", J. Rybicki, M. Wohlgenannt, Physical Review B 79, 153202 (2009)
2. "Theory for Spin Diffusion in Disordered Organic Semiconductors", P. A. Bobbert, W. Wagemans, F. W. A. van Oost, B. Koopmans, M. Wohlgenannt, Physical Review Letters 102, 156604 (2009)
3. "Magnetic field-effects in bipolar, almost hole-only and almost electron-only tris-(8-hydroxyquinoline) aluminum devices", T. D. Nguyen, Y. Sheng, J. Rybicki, M. Wohlgenannt, Physical Review B **77**, 235209 (2008).
4. "A two-site bipolaron model for organic magnetoresistance", W. Wagemans, F. L. Bloom, P.A. Bobbert, M. Wohlgenannt, B. Koopmans, Journal of Applied Physics **103**, 07F303 (2008).
5. "Device spectroscopy of magnetic field effects in a polyfluorene organic light-emitting diode", T. D. Nguyen, J. Rybicki, Y. Sheng, M. Wohlgenannt, Physical Review B **77**, 035210 (2008).
6. "Bipolaron mechanism for organic magnetoresistance", P.A. Bobbert, T.D. Nguyen, F.W.A. van Oost, B. Koopmans, M. Wohlgenannt, Physical Review Letters **99**, 216801 (2007).
7. "On the role of hydrogen in organic magnetoresistance: A study of C-60 devices", T. D. Nguyen, Y. Sheng, M. Wohlgenannt, T. D. Anthopoulos, Synthetic Metals **157**, 930-934 (2007).

8. \*\*\*"Comment on "Frequency response and origin of the spin-1/2 photoluminescence-detected magnetic resonance in a pi-conjugated polymer", C. G. Yang, E. Ehrenfreund, M. Wohlgenannt, Z. V. Vardeny, *Physical Review B* **75**, 246201 (2007).
9. \*\*\*"An 8 × 8 Pixel Array Pen-Input OLED Screen Based on Organic Magnetoresistance", G. Veeraraghavan, T. D. Nguyen, Y. Sheng, O. Mermer, M. Wohlgenannt, *IEEE Trans. Electr. Dev.* **54**, 1571-1577 (2007).
10. \*\*\*"Magnetic field effects on current, electroluminescence and photocurrent in organic light emitting diodes", G. Veeraraghavan, T. D. Nguyen, Y. Sheng, O. Mermer, M. Wohlgenannt, *J. Phys.-Cond. Mat.* **19**, 036209 (13 pages) (2007).
11. \*\*\*"The effect of spin-orbit coupling on magnetoresistance in organic semiconductors", Y. Sheng, T. D. Nguyen, G. Veeraraghavan, O. Mermer, M. Wohlgenannt, *Physical Review B* **75**, 035202 (6 pages) (2007).
12. \*\*\*"Hyperfine interaction and magnetoresistance in organic semiconductors", Y. Sheng, T. D. Nguyen, G. Veeraraghavan, O. Mermer, M. Wohlgenannt, S. Qiu, U. Scherf, *Physical Review B* **74** (4), 045213 (9 pages) (2006)
13. \*\*\*"Large magnetoresistance in nonmagnetic pi-conjugated semiconductor thin film devices", O. Mermer, G. Veeraraghavan, T. L. Francis, Y. Sheng, D. T. Nguyen, M. Wohlgenannt, A. Kohler, M. K. Al-Suti, M. S. Khan, *Physical Review B* **72**, 205202 (12 pages) (2005).
14. \*\*\*"Large magnetoresistance at room temperature in small molecular organic sandwich devices", O. Mermer, G. Veeraraghavan, T. L. Francis, and M. Wohlgenannt, *Solid State Communications* **134**, 631-636 (2005).
15. \*\*\*"Single-step-multiphonon-emission model of spin-dependent exciton formation in organic semiconductors", M. Wohlgenannt and O. Mermer, *Physical Review B*, **71**, 165111 (8 pages) (2005)
16. \*\*\*"Spectroscopic study of spin-dependent exciton formation rates in pi-conjugated semiconductors: Comparison with electroluminescence techniques", C. Yang, Z. V. Vardeny, A. Köhler, M. Wohlgenannt, M. K. Al-Suti, and M. S. Khan, *Physical Review B* **70**, 241202 (R, 4 pages) (2004).
17. \*\*\*"Large magnetoresistance at room temperature in semiconducting polymer sandwich devices", T. L. Francis, O. Mermer, G. Veeraraghavan, and M. Wohlgenannt, *New Journal of Physics* **6**, 185 (8 pages) (2004).
18. \*\*\*"Confined and delocalized polarons in pi-conjugated oligomers and polymers: A study of the effective conjugation length", M. Wohlgenannt, X. M. Jiang, Z. V. Vardeny, *Physical Review B* **69**, 241204 (R, 4 pages) (2004).
19. \*\*\*"Excitons, polarons, and laser action in poly(p-phenylene vinylene) films, R. Österbacka, M. Wohlgenannt, M. Shkunov, D. Chinn, Z. V. Vardeny, *Journal of Chemical Physics* **118**, 8905-8916 (2003).
20. \*\*\*"Linear and nonlinear photoexcitation dynamics in pi-conjugated polymers", O. Epshtein, Y. Eichen, E. Ehrenfreund, M. Wohlgenannt, Z. V. Vardeny, *Physical Review Letters* **90**, 046804 (4 pages) (2003).

21. \**“Spin-dependent delayed luminescence from non-geminate polarons in pi-conjugated polymer films”*, M. Wohlgenannt, C. Yang, Z.V. Vardeny, *Physical Review B* **66**, 241201(R, 4 pages) (2002)
22. \**“Excited-state relaxation in pi-conjugated polymers”*, S. V. Frolov, Z. Bao, M. Wohlgenannt, and Z. V. Vardeny, *Physical Review B* **65**, 205209 (12 pages) (2002).
23. \**“Conjugation-length dependence of spin-dependent exciton formation in pi-conjugated oligomers and polymers”*, M. Wohlgenannt, X.M. Jiang, Z.V. Vardeny, and R.A.J. Janssen, *Physical Review Letters* **88**, 197401 (4 pages) (2002).
24. \**“Excitation dynamics in single molecular crystals of alpha -hexathiophene from femtoseconds to milliseconds”*, Frolov, S.V.; Kloc, Ch.; Batlogg, B.; Wohlgenannt, M.; Jiang, X.; Vardeny, Z.V., *Physical Review B* **63**, 205203 (12 pages) (2001).
25. \**“Formation cross-sections of singlet and triplet excitons in pi -conjugated polymers”*, Wohlgenannt, M.; Tandon, K.; Mazumdar, S.; Rameshesha, S.; Vardeny, Z.V., *Nature* **409**, 494-497 (2001).
26. \**“Film morphology and photophysics of polyfluorene”*, Cadby, A.J.; Lane, P.A.; Mellor, H.; Martin, S.J.; Grell, M.; Giebeler, C.; Bradley, D.D.C.; Wohlgenannt, M.; An, C.; Vardeny, Z.V., *Physical Review B* **62**, 15604-15609 (2000).
27. \**“Ultrafast spectroscopy of even-parity states in pi -conjugated polymers”*, Frolov, S.V.; Bao, Z.; Wohlgenannt, M.; Vardeny, Z.V., *Physical Review Letters* **85**, 2196-2199 (2000).
28. \**“Optical studies of triplet excitations in poly(p-phenylene vinylene)”*, Osterbacka, R.; Wohlgenannt, M.; Chinn, D.; Vardeny, Z.V., *Physical Review B* **60**, R11253-11256 (1999)
29. \**“Photogeneration and recombination processes of neutral and charged excitations in films of a ladder-type poly(para-phenylene)”*, Wohlgenannt, M.; Graupner, W.; Leising, G.; Vardeny, Z.V., *Physical Review B* **60**, 5321-5330 (1999).
30. \**“Photogeneration action spectroscopy of neutral and charged excitations in films of a ladder-type poly(para-phenylene)”*, Wohlgenannt, M.; Graupner, W.; Leising, G.; Vardeny, Z.V., *Physical Review Letters* **82**, 3344-3347 (1999).

*Article: Invited*

31. \**“Magnetoresistance in pi-conjugated organic sandwich devices with varying hyperfine and spin-orbit coupling strengths, and varying dopant concentrations”*, T. D. Nguyen, Y. Sheng, J. Rybicki, G. Veeraraghavan, M. Wohlgenannt, *J. Mater. Chem.* **17**, 1995–2001 (2007).
32. \**“Spin and magnetic field effects in organic semiconductor devices”*, M. Wohlgenannt, Z. V. Vardeny, J. Shi J, T. L. Francis, X. M. Jiang, O. Mermer, G. Veeraraghavan, D. Wu, Z. H. Xiong, *IEE Proceedings – Circuits, Devices and Systems* **152**, 385-392 (2005)
33. \**“Photophysics properties of blue-emitting polymers”*, M. Wohlgenannt and Z.V. Vardeny, *Synthetic Metals* **125**, 55-63 (2001).

34. \**“Polarons in ladder-type polymer films; recombination channels and electron-phonon coupling”*, Wohlgenannt, M.; An, C.P.; Vardeny, Z.V., *Journal of Physical Chemistry B* **104**, 3846-3850 (2000).
35. \**“Photophysics of excitation energy transfer in highly fluorescent polymers”*, Wohlgenannt, M., Graupner, W., Wenzl, F.P., Tasch, S., List, E.J.W., Leising, G., Graupner, M., Hermetter, A., Rohr, U., Schlichting, P., Geerts, Y., Scherf, U., Mullen, K., *Chemical Physics* **227**, 99-109 (1998)

*Article: Conference Proceeding, refereed*

36. \**“Magnetoconductivity and magnetoluminescence studies in bipolar and almost hole-only sandwich devices made from films of a pi-conjugated molecule”*, T. D. Nguyen, Y. Sheng, J. Rybicki, M. Wohlgenannt, *Science and Technology of Advanced Materials* **9**, 024206 (2008).
37. \**“Magnetic field effects on current, electroluminescence and photocurrent in Alq3 organic light emitting diodes”*, G. Veeraraghavan, T. D. Nguyen, Y. Sheng, O. Mermer, M. Wohlgenannt, *Advances in Science and Technology* **52**, 53-61 (2006).
38. \**“Large magnetoresistance at room temperature in organic semiconductor devices”*, O. Mermer, M. Wohlgenannt, T. L. Francis, G. Veeraraghavan, *IEEE Transactions on Magnetics* **41**, 3682-3684 (2005).
39. \**“Morphology-dependent optical properties of substituted poly(p-phenylene-ethynylene) (PPE) films”*, X. M. Jiang, C. C. Wu, M. Wohlgenannt, W. Y. Huang, T. K. Kwei, Y. Okamoto, Z. V. Vardeny, *Physica B* **338**, 235-239 (2003)
40. \**“Spin-dependent exciton formation rates in pi-conjugated oligomers and polymers”*, M. Wohlgenannt, X. M. Jiang, Z. V. Vardeny, *Physica B* **338**, 318-322 (2003).
41. \**“Photoinduced charge transfer in poly(p-phenylene vinylene) derivatives and carbon nanotube/C-60 composites”*, C. Yang, M. Wohlgenannt, Z. V. Vardeny, W. J. Blau, A. B. Dalton, R. Baughman, A. A. Zakhidov, *Physica B* **338**, 366-369 (2003)
42. \**“Spin-dependent polaron pair recombination in pi-conjugated polymers: enhanced singlet exciton densities”*, M. Wohlgenannt, X. M. Jiang, C. Yang, O. J. Korovyanko, Z. V. Vardeny, *Synthetic Metals* **139**, 921-924 (2003).
43. \**“Spin-dependent exciton formation in pi-conjugated polymers and oligomers”*, Wohlgenannt, M.; Jiang, X.M.; Vardeny, Z.V, *Synthetic Metals* **137**, 1069-1071 (2003).
44. \**“Dispersive nonlinear dynamics of photoexcitations in pi-conjugated polymers”*, Ehrenfreund E, Epshtein O, Eichen Y, Wohlgenannt M, Vardeny ZV, *Synthetic Metals* **137**, 1363-1365 (2003).
45. \**“Hexathiophene single crystals: luminescence and magnetic resonance”*, Wohlgenannt, M.; Jiang, X.M.; Vardeny, Z.V.; Frolov, S.V.; Kloc, C.; Batlogg, *Synthetic Metals (International Conference on Science and Technology of Synthetic Metals)* **119**, 647-648 (2001).
46. \**“Long-lived photoexcitations in alpha -hexathiophene single crystals”*, Wohlgenannt, M.; Vardeny, Z.V.; Frolov, S.V.; Kloc, C.; Batlogg, B., *Synthetic Metals (Fourth International Topical Conference on Optical Probes of pi-Conjugated Polymers and Photonic Crystals)* **116**, 181-184 (2001).

47. \*\*\*"Multiple pulse transient spectroscopy in luminescent pi -conjugated polymers", Frolov, S.V.; Bao, Z.; Wohlgenannt, M.; Vardeny, Z.V., Synthetic Metals (Fourth International Topical Conference on Optical Probes of pi-Conjugated Polymers and Photonic Crystals) **116**, 5-7 (2001).
48. \*\*\*"Studies of optical transitions related to pi -conjugated polymers and laser dyes infiltrated in opal photonic crystals", Eradat, N.; Wohlgenannt, M.; Vardeny, Z.V.; Zakhidov, A.A.; Baughman, R.H., Synthetic Metals (Fourth International Topical Conference on Optical Probes of pi-Conjugated Polymers and Photonic Crystals) **116**, 509-513 (2001).
49. \*\*\*"Spectroscopy of conducting and insulating ladder-type poly(para-phenylene) device structures", Wohlgenannt, M.; List, E.J.W.; Zenz, C.; Leising, G.; Graupner, W.; Vardeny, Z.V., Synthetic Metals (Fourth International Topical Conference on Optical Probes of pi-Conjugated Polymers and Photonic Crystals), **116**, 353-356 (2001).
50. \*\*\*"Density of states of ensembles of conjugated molecules deduced from the photobleaching and absorption spectra", Graupner, W., Wohlgenannt, M., Synthetic Metals (Fourth International Topical Conference on Optical Probes of pi-Conjugated Polymers and Photonic Crystals), **116**, 193-197 (2001).
51. \*\*\*"Optical studies of photoexcitations of poly(9,9-dioctyl fluorene)", Cadby, A.J.; Lane, P.A.; Wohlgenannt, M.; An, C.; Vardeny, Z.V.; Bradley, D.D.C., Synthetic Metals (2<sup>nd</sup> International Conference on Electroluminescence of Molecular Materials and Related Phenomena), 111-112, 515-518 (2000).
52. \*\*\*"Singlet fission in luminescent and nonluminescent pi -conjugated polymers", Wohlgenannt, M.; Graupner, W.; Osterbacka, R.; Leising, G.; Comoretto, D.; Vardeny, Z.V., Synthetic Metals (International Conference on Science and Technology of Synthetic Metals) **101**, 267-268 (1999).
53. \*\*\*"Optical spectroscopies of excited states in poly(para phenylene vinylene)", Osterbacka, R.; Shkunov, M.; Chinn, D.; Wohlgenannt, M.; DeLong, M.; Viner, J.; Vardeny, Z.V., Synthetic Metals (International Conference on Science and Technology of Synthetic Metals) **101**, 226-229 (1999).
54. \*\*\*"Optimizing hexaphenyl thin film quality for opto-electronic applications by heat treatment", Resel, R.; Graupner, W.; Hochfilzer, C.; Koch, N.; Meghdadi, F.; Tasch, S.; Wohlgenannt, M.; Leising, G.; Reichmann, K., Proceedings of the XVII International Conference on Applied Crystallography, 413 (1998)
55. \*\*\*"Dynamics of photoexcitations in highly fluorescent organic guest-host-systems", List, E.J.W.; Graupner, W.; Wohlgenannt, M.; Leising, G.; Partee, J.; Shinar, J.; Schlichting, P.; Rohr, U.; Geerts, Y.; Scherf, U.; Mullen, K., Optical Materials (Materials, Physics and Devices for Molecular Electronics and Photonics. Symposium of the E-MRS Spring Conference) **9**, 494-497 (1998).

### Published Reviews of Scholarship

56. \*\*\*"Polarons in pi-conjugated semiconductors: absorption spectroscopy and spin-dependent recombination", M. Wohlgenannt, Physica Status Solidi A **201**, 1188-1204 (2004).
57. \*\*\*"Spin-dependent exciton formation rates in pi-conjugated materials", M. Wohlgenannt and Z. V. Vardeny, Journal of Physics: Condensed Matter **15**, R83-R107 (2003)

*Article: Invited Book Chapter*

58. \*"Magnetoresistance and spin-effects in organic light-emitting diodes", M. Wohlgenannt, Z. V. Vardeny, in "Handbook of Organic Electronics and Photonics", ed. H. S. Nalwa, American Scientific Publishers (www.aspbs.com), 2007.
59. \*"Spectroscopy of long lived photoexcitations in pi-conjugated semiconductors", M. Wohlgenannt, E. Ehrenfreund, Z. V. Vardeny, in "Photophysics of molecular materials", ed. G. Lanzani, Wiley-VCH, 2005.
60. \*"Polarons in pi-conjugated semiconductors: absorption spectroscopy and spin-dependent recombination", M. Wohlgenannt, in "Physics of organic semiconductors", ed. W. Brutting, Wiley-VCH, 2005.

***Under Review/In Progress:****Article: Fully Refereed*

61. \*"Theory of spin-diffusion in disordered organic semiconductors", P. A. Bobbert, W. Wagemans, F.W.A. van Oost, B. Koopmans, M. Wohlgenannt, submitted to Physical Review Letters.
62. \*"Spin-orbit coupling in singly charged pi-conjugated polymer chains", J. Rybicki, M. Wohlgenannt, submitted to Physical Review B.

*Article: Conference Proceeding, refereed*

63. "Device-spectroscopy of magnetic field effects in several different polymer organic light-emitting diodes ", T. D. Nguyen, Y. Sheng, J. Rybicki, G. Veeraraghavan, M Wohlgenannt, submitted to Synthetic Metals (2009)
64. "Spin relaxation and magnetoresistance in disordered organic semiconductors", P. A. Bobbert, T. D Nguyen, W. Wagemans, F. W van Oost, B. Koopmans, M Wohlgenannt, submitted to Synthetic Metals (2009)
65. "Hyperfine and Spin-orbit coupling in singly charged pi-conjugated polymers", J. Rybicki, M. Wohlgenannt, submitted to Synthetic Metals (2009)

*Article: Invited**Article: Invited Book Chapter*

66. \*"Magnetoresistance and spin transport in organic semiconductor devices", M. Wohlgenannt, P. A. Bobbert, B. Koopmans, to be published by Taylor and Francis, submitted.
67. \*"Spectroscopy of Photoexcitations in Conjugated Polymers", Z. V. Vardeny and M. Wohlgenannt, in "Semiconducting Polymers" to be published by Wiley-VCH, submitted.

**International and National Presentations:***Invited Plenary talks*

1. CECAM workshop: Modelling electronic processes in molecular scale devices September 2003 Lyon, France, Invited plenary talk: "Polarons in organic semiconductor films and their spin-dependent recombination", M. Wohlgenannt and Z. V. Vardeny.

*Invited talks*

2. Spin Chemistry Meeting, St. Catherines, ON, Canada, June 2009, "Magnetic-field effects in organic semiconductors"
3. Excited States Processes In Electronic And Bio-Materials, Santa Fe, NM, June 2009, "Spin-orbit coupling and magnetoresistance in organic semiconductor spintronic devices"
4. Optical Probes in Conjugated Polymers Meeting, Beijing, China, June 2009, "Spectroscopy of magnetic field effects"
5. 36th International Conference On Metallurgical Coatings And Thin Films, April 2009, San Diego, CA, Invited Talk "Large Magnetoresistance in Organic Semiconductor Thin Film Devices", M. Wohlgenannt
6. Midwest Solid State Physics Meeting, Iowa City, IA, April 2009, "Magnetoresistance and spin-transport in organic semiconductor thin film devices"
7. American Physical Society Meeting, Pittsburgh, PA, Invited Talk: "Magnetoresistance and Spin Transport in Organic Semiconductor Devices", M. Wohlgenannt
8. International Conference on Synthetic Metals (ICSM), July 2008, Recife, Brazil, Invited Talk: "Device Spectroscopy of Magnetic-Field-Effects in Organic Light-Emitting Diodes", M. Wohlgenannt
9. Meeting of the Society of Electron Spin Science and Technology (SEST 2007), November 2007, Shizuoka, Japan, Invited Talk: "Characterization and Application of Large Magnetoresistance in Organic Semiconductors", M. Wohlgenannt
10. International Conference on Magneto-Science (ICMS2007), November 2007, Hiroshima, Japan, Invited Talk: "Characterization and Application of Large Magnetoresistance in Organic Semiconductors", M. Wohlgenannt
11. Device Research Conference, June 2007, South Bend, IN, Invited Talk, "Characterization and Application of Large Magnetoresistance in Organic Semiconductors", M. Wohlgenannt
12. Optical Probes of Conjugated Polymers, June 2007, Turku, Finland, Invited Talk: "Device-spectroscopy of magnetic field effects in organic light-emitting diodes", M. Wohlgenannt
13. American Physical Society Meeting, March 2007, Denver, CO Invited Talk: "Characterization and Application of Large Magnetoresistance in Organic Semiconductors", M. Wohlgenannt
14. CIMTEC 2006: June 2006 Acireale, Italy Invited Talk: "Very large magnetoresistance in non-magnetic organic light-emitting diodes", M. Wohlgenannt.
15. Frontiers in Optics 2005: October 2005 Tucson, AZ Invited talk: "Very large magnetoresistance in non-magnetic organic light-emitting diodes", M. Wohlgenannt.

16. Nanoforum DC 2005: April 2005 Alexandria, VA Invited talk: "Very large magnetoresistance in non-magnetic organic light-emitting diodes", M. Wohlgenannt.
17. Workshop on Fundamental Research Needs in Organic Electronic Materials (sponsored by DOE): May 2003 Salt Lake City, UT Invited talk: "Spin-dependent exciton formation and OLED quantum efficiency", M. Wohlgenannt and Z. V. Vardeny.
18. International Conference on Science and Technology of Synthetic Metals: June/July 2002 Shanghai, China Invited talk: "Spin-dependent exciton formation in pi-conjugated polymers and oligomers", M. Wohlgenannt and Z. V. Vardeny.
19. American Physical Society March meeting: March 2002 Indianapolis, IN Invited talk: "Studies of spin-dependent exciton formation from charge recombination in pi-conjugated polymers", M. Wohlgenannt and Z. V. Vardeny.
20. American Physical Society March meeting: March 2000 Minneapolis, MI Invited talk: "Photophysics of blue-emitting polymer films and LEDs", M. Wohlgenannt and Z. V. Vardeny.

#### *Colloquia/Seminars*

21. Technische Universiteit Eindhoven, Solid State Seminar, Oct 2008: "Hyperfine Coupling, Spin-Orbit Coupling and Magnetoresistance in Organic Semiconductor Devices", M. Wohlgenannt.
22. University of Arizona, colloquium, Oct 2007: "Organic Magnetoresistance", M. Wohlgenannt.
23. University of Arizona, low energy physics seminar, Oct 2007: "Theory of Organic Magnetoresistance", M. Wohlgenannt.
24. University of Iowa, physical chemistry seminar, Nov 2006: "Theory of Organic Magnetoresistance", M. Wohlgenannt.
25. University of Iowa, OSTC seminar series, June 2006: "Very large magnetoresistance in non-magnetic organic light-emitting diodes", M. Wohlgenannt.
26. University of Linz, Austria, physical chemistry seminar, June 2006: "Very large magnetoresistance in non-magnetic organic light-emitting diodes", M. Wohlgenannt.
27. University of Wisconsin, colloquium: November 2005, Madison, WI: "Very large magnetoresistance in non-magnetic organic light-emitting diodes", M. Wohlgenannt
28. University of Illinois, colloquium: November 2005, Chicago, IL: "Very large magnetoresistance in non-magnetic organic light-emitting diodes", M. Wohlgenannt
29. University of Iowa, solid state seminar series: November 2004, Iowa City, IA: "A novel large magnetoresistance effect in polymer sandwich devices", O. Mermer, M. Wohlgenannt, T. L. Francis
30. University of Iowa, solid state seminar series: September 2004, Iowa City, IA: "Single-step-multiphonon-emission model of spin-dependent exciton formation in organic semiconductors", M. Wohlgenannt, O. Mermer

31. University of Iowa, solid state seminar series: January 2004, Iowa City, IA: "Weak localization in polymer sandwich devices?", M. Wohlgenannt, O. Mermer, G. Veeraraghavan, T. L. Francis
32. University of Iowa, solid state seminar series: September 2003, Iowa City, IA: "Confined and delocalized polarons in pi-conjugated oligomers and polymers: A study of the effective conjugation length", M. Wohlgenannt, Z. V. Vardeny
33. University of Linz, physical chemistry seminar: July 2003, Linz, Austria: "Spin-dependent Exciton Formation in Organic Semiconductors", M. Wohlgenannt, Z. V. Vardeny
34. Technical University of Graz, solid state physics seminar: July 2003, Graz, Austria: "Spin-dependent Exciton Formation in Organic Semiconductors", M. Wohlgenannt, Z. V. Vardeny
35. University of Iowa, physical chemistry seminar: April 2003, Iowa City, IA: "Spin-dependent Exciton Formation in Organic Semiconductors", M. Wohlgenannt, Z. V. Vardeny
36. University of Northern Iowa, Physics Colloquium: March 2003, Waterloo, IA: "Spin-dependent Exciton Formation in Organic Semiconductors", M. Wohlgenannt, Z. V. Vardeny
37. University of Iowa, solid state seminar series: September 2002, Iowa City, IA: "The field of pi-conjugated polymers: A survey", M. Wohlgenannt
38. University of Missouri, Physics Colloquium: March 2002, Columbia, Missouri: "Spin-dependent Exciton Formation in Organic Semiconductors", M. Wohlgenannt, Z. V. Vardeny
39. University of Iowa, solid state seminar: March 2002, Iowa City, IA: "Spin-dependent Exciton Formation vs. Triplet Exciton Harvesting", M. Wohlgenannt, Z. V. Vardeny
40. Tulane University, Physics Colloquium: February 2002, New Orleans, Louisiana: "Spin-dependent Exciton Formation in Organic Semiconductors", M. Wohlgenannt, Z. V. Vardeny
41. University of Nebraska, Physics Colloquium: February 2002, Lincoln, NE: "Spin-dependent Exciton Formation in Organic Semiconductors", M. Wohlgenannt, Z. V. Vardeny
42. Washington University in St. Louis, Physics Colloquium: January 2002, St. Louis, Missouri: "Spin-dependent Exciton Formation in Organic Semiconductors", M. Wohlgenannt, Z. V. Vardeny
43. Washington State University, Physics Colloquium: January 2002, Pullman, WA: "Spin-dependent Exciton Formation in Organic Semiconductors", M. Wohlgenannt, Z. V. Vardeny
44. University of Osaka, Electrical Engineering Seminar: January 2001, Osaka, Japan: "Formation cross-sections of singlet and triplet excitons in pi-conjugated polymers", M. Wohlgenannt, Z. V. Vardeny
45. University of Utah, Solid State Seminar: December 2000, Salt Lake City, UT: "Formation cross-sections of singlet and triplet excitons in pi-conjugated polymers", M. Wohlgenannt, Z. V. Vardeny

*Talks and posters*

46. International Conference on Synthetic Metals 2006, Dublin, Ireland, July 2006, Talk: "Very large magnetoresistance in non-magnetic organic light-emitting diodes", M. Wohlgenannt
47. European MRS 2006, Strasbourg, France, April 2006, Talk: "Very large magnetoresistance in non-magnetic organic light-emitting diodes", M. Wohlgenannt
48. IMAG, Nagoya, Japan, April 2005, Talk: "Very large magnetoresistance in non-magnetic organic light-emitting diodes", M. Wohlgenannt
49. American Physical Society March meeting: March 2004 Montreal, Canada Talk: "Confined and delocalized polarons in pi-conjugated oligomers and polymers: A study of the effective conjugation length", M. Wohlgenannt and Z. V. Vardeny.
50. American Physical Society March meeting: March 2003 Austin, TX Talk: "Spin-dependent exciton formation in pi-conjugated polymers and oligomers", M. Wohlgenannt and Z. V. Vardeny.
51. Fifth International Topical Conference On Optical Probes Of Conjugated Polymers And Organic & Inorganic Nanostructures, Feb 2003 Venice, Italy Talk: "Spin-dependent exciton formation in pi-conjugated polymers and oligomers", M. Wohlgenannt and Z. V. Vardeny.
52. Sixth International Conference on Electrical Transport and Optical Properties of Inhomogeneous Media July 2002 Snowbird, Utah Talk: "Spin-dependent exciton formation in pi-conjugated polymers and oligomers", M. Wohlgenannt and Z. V. Vardeny.
53. 2nd International Conference on Electroluminescence of Molecular Materials and Related Phenomena: September 2001 Los Angeles, CA Talk: "Enhanced singlet exciton yield from charge recombination in pi-conjugated polymers", M. Wohlgenannt and Z. V. Vardeny.
54. Excited State Processes in Electronic and Bio-Materials: August 2001 Los Alamos, NM Talk: "Enhanced singlet exciton yield from charge recombination in pi-conjugated polymers", M. Wohlgenannt and Z. V. Vardeny.
55. American Physical Society March meeting: March 2001 Seattle, WA Two talks: "Direct determination of singlet and triplet formation cross sections in pi-conjugated polymers", M. Wohlgenannt and Z. V. Vardeny and "Optically detected magnetic resonance of organic single crystals", M. Wohlgenannt and Z. V. Vardeny.
56. International Conference on Science and Technology of Synthetic Metals: July 2000 Gastein, Austria Poster on "Optically detected magnetic resonance of organic single crystals", M. Wohlgenannt and Z. V. Vardeny.
57. Fourth International Topical Conference on Optical Probes of pi-Conjugated Polymers and Photonic Crystals: February 2000 Salt Lake City, UT Talk: "Charge induced absorption spectroscopy of blue-emitting polymer LEDs" M. Wohlgenannt and Z. V. Vardeny, and poster on "Long-lived photoexcitations in semi-thiophene single crystals", M. Wohlgenannt and Z. V. Vardeny.
58. American Physical Society March meeting: March 1999 Atlanta, GA Two talks: "Photogeneration of triplet excitons and polarons in mLPPP", M. Wohlgenannt and Z. V. Vardeny and "Photophysics and morphology of Poly-Fluorene films", M. Wohlgenannt and Z. V. Vardeny.

59. International Conference on Science and Technology of Synthetic Metals: July 1998 Montpellier, France Poster on “Photogeneration of triplet excitons and polarons”, M. Wohlgenannt and Z. V. Vardeny.
60. American Physical Society March meeting: March 1998 Los Angeles, CA Talk “Photophysics of a polymeric guest-host system”, M. Wohlgenannt and Z. V. Vardeny.

## Patent Application

1. Patent application filed by University of Iowa Research Foundation: “Magneto Resistive Elements and Methods for Manufacture and Use of Same”, inventors: Markus Wohlgenannt, Thomas Francis, Ömer Mermer, and Govindarajan Veeraraghavan. For further information consult Mr. Won Joe of UIRF.

## SERVICE

### Department

#### *Present*

2009/2010	Condensed matter/materials physics/optics theorist search committee.
2009/2010	Qualifier exam committee.
2008/2009	Condensed matter/materials physics/optics theorist search committee.
2007/2008	Admissions Committee.
2006/2007	Admissions Committee.
2005/2006	Admissions Committee.
2004/2005	Condensed matter/materials physics/optics theorist search committee.
2004/2005	Admissions Committee.
2003/2004	Organizer, solid state seminar series.
2003-	Member, Executive Committee for Microfabrication lab (170 IATL).
2002/2003	Organizer, solid state seminar series.

### Profession

#### *Journal Referee*

2006-	Nature Materials
2006-	Nature Nanotechnology
2006	Applied Physics Letters
2006	Organic Electronics
2003-	Physica Status Solidi A
2002-	The Journal of Physical Chemistry
2001-	Physical Review B and Physical Review Letters

#### *NSF panels*

2009-	ECS/Dr. Varshney panel, Arlington, VA
2007-	ECS/Dr. Olowolafe panel, Arlington, VA
2005-	ECS/Dr. Mink panel, Arlington, VA
2004-	ECS/Dr. Mulpuri panel, Arlington, VA

*Conferences*

- 2009 Conference chairman, "2nd Topical Meeting on Spins in Organic Semiconductors (SPINOS2009)", Salt Lake City, Utah, USA, 6-9 February 2009 (<http://ostc.physics.uiowa.edu/~spinos2009/>)
- 2009- International Advisory Board member, "Spin Chemistry"
- 2009- International Advisory Board member, "Optical Probes in conjugated polymers"
- 2007- International Advisory Board member, "Topical Meeting on Spins in Organic Semiconductors"