

PUBLICATION LIST WOHLGENANNT GROUP, SEPT. 2009

- [1] J. Rybicki and M. Wohlgenannt, "Spin-orbit coupling in singly charged pi-conjugated polymers," *Physical Review B* **79**, 153202 (2009).
- [2] P. A. Bobbert, W. Wagemans, F. W. A. van Oost, B. Koopmans, and M. Wohlgenannt, "Theory for Spin Diffusion in Disordered Organic Semiconductors," *Physical Review Letters* **102**, 156604 (2009).
- [3] W. Wagemans, F. L. Bloom, P. A. Bobbert, M. Wohlgenannt, and B. Koopmans, "A two-site bipolaron model for organic magnetoresistance," *Journal of Applied Physics* **103**, 07f303 (2008).
- [4] T. D. Nguyen, Y. Sheng, J. E. Rybicki, and M. Wohlgenannt, "Magnetoconductivity and magnetoluminescence studies in bipolar and almost hole-only sandwich devices made from films of a pi-conjugated molecule," *Science and Technology of Advanced Materials* **9**, 024206 (2008).
- [5] T. D. Nguyen, Y. Sheng, J. Rybicki, and M. Wohlgenannt, "Magnetic field-effects in bipolar, almost hole-only and almost electron-only tris-(8-hydroxyquinoline) aluminum devices," *Physical Review B* **77**, 235209 (2008).
- [6] T. D. Nguyen, J. Rybicki, Y. Sheng, and M. Wohlgenannt, "Device spectroscopy of magnetic field effects in a polyfluorene organic light-emitting diode," *Physical Review B* **77**, 035210 (2008).
- [7] C. G. Yang, E. Ehrenfreund, M. Wohlgenannt, and Z. V. Vardeny, "Comment on "Frequency response and origin of the spin-1/2 photoluminescence-detected magnetic resonance in a pi-conjugated polymer," *Physical Review B* **75**, 246201 (2007).
- [8] G. Veeraraghavan, T. D. Nguyen, Y. G. Sheng, O. Mermer, and M. Wohlgenannt, "An 8 x 8 pixel array pen-input OLED screen based on organic magnetoresistance," *Ieee Transactions on Electron Devices* **54**, pp. 1571-1577 (2007).
- [9] G. Veeraraghavan, T. D. Nguyen, Y. Sheng, O. Mermer, and M. Wohlgenannt, "Magnetic field effects on current, electroluminescence and photocurrent in organic light-emitting diodes," *Journal of Physics-Condensed Matter* **19**, 036209 (2007).
- [10] Y. Sheng, T. D. Nguyen, G. Veeraraghavan, O. Mermer, and M. Wohlgenannt, "Effect of spin-orbit coupling on magnetoresistance in organic semiconductors," *Physical Review B* **75**, 035202 (2007).

- [11] T. D. Nguyen, Y. G. Sheng, J. Rybicki, G. Veeraraghavan, and M. Wohlgenannt, "Magnetoresistance in pi-conjugated organic sandwich devices with varying hyperfine and spin-orbit coupling strengths, and varying dopant concentrations," *Journal of Materials Chemistry* **17**, pp. 1995-2001 (2007).
- [12] T. D. Nguyen, Y. Sheng, M. Wohlgenannt, and T. D. Anthopoulos, "On the role of hydrogen in organic magnetoresistance: A study of C-60 devices," *Synthetic Metals* **157**, pp. 930-934 (2007).
- [13] P. A. Bobbert, T. D. Nguyen, F. W. A. van Oost, B. Koopmans, and M. Wohlgenannt, "Bipolaron mechanism for organic magnetoresistance," *Physical Review Letters* **99**, 216801 (2007).
- [14] Y. Sheng, T. D. Nguyen, G. Veeraraghavan, O. Mermer, M. Wohlgenannt, S. Qiu, and U. Scherf, "Hyperfine interaction and magnetoresistance in organic semiconductors," *Physical Review B* **74**, 045213 (2006).
- [15] M. Wohlgenannt, Z. V. Vardeny, J. Shi, T. L. Francis, X. M. Jiang, O. Mermer, G. Veeraraghavan, D. Wu, and Z. H. Xiong, "Spin and magnetic field effects in organic semiconductor devices," *Ieee Proceedings-Circuits Devices and Systems* **152**, pp. 385-392 (2005).
- [16] M. Wohlgenannt and O. Mermer, "Single-step multiphonon emission model of spin-dependent exciton formation in organic semiconductors," *Physical Review B* **71**, 165111 (2005).
- [17] O. Mermer, M. Wohlgenannt, T. L. Francis, and G. Veeraraghavan, "Large magnetoresistance at room temperature in organic semiconductor devices," *Ieee Transactions on Magnetics* **41**, pp. 3682-3684 (2005).
- [18] O. Mermer, G. Veeraraghavan, T. L. Francis, and M. Wohlgenannt, "Large magnetoresistance at room-temperature in small-molecular-weight organic semiconductor sandwich devices," *Solid State Communications* **134**, pp. 631-636 (2005).
- [19] O. Mermer, G. Veeraraghavan, T. L. Francis, Y. Sheng, D. T. Nguyen, M. Wohlgenannt, A. Kohler, M. K. Al-Suti, and M. S. Khan, "Large magnetoresistance in nonmagnetic pi-conjugated semiconductor thin film devices," *Physical Review B* **72**, 205202 (2005).
- [20] C. Yang, Z. V. Vardeny, A. Kohler, M. Wohlgenannt, M. K. Al-Suti, and M. S. Khan, "Spectroscopic study of spin-dependent exciton formation rates in pi-conjugated semiconductors: Comparison with electroluminescence techniques," *Physical Review B* **70**, 241202 (2004).

- [21] M. Wohlgenannt, X. M. Jiang, and Z. V. Vardeny, "Confined and delocalized polarons in pi-conjugated oligomers and polymers: A study of the effective conjugation length," *Physical Review B* **69**, 241204 (2004).
- [22] M. Wohlgenannt, "Polarons in pi-conjugated semiconductors: absorption spectroscopy and spin-dependent recombination," *Physica Status Solidi a-Applications and Materials Science* **201**, pp. 1188-1204 (2004).
- [23] T. L. Francis, O. Mermer, G. Veeraraghavan, and M. Wohlgenannt, "Large magnetoresistance at room temperature in semiconducting polymer sandwich devices," *New Journal of Physics* **6**, 185 (2004).
- [24] C. Yang, M. Wohlgenannt, Z. V. Vardeny, W. J. Blau, A. B. Dalton, R. Baughman, and A. A. Zakhidov, "Photoinduced charge transfer in poly(p-phenylene vinylene) derivatives and carbon nanotube/C-60 composites," *Physica B-Condensed Matter* **338**, pp. 366-369 (2003).
- [25] M. Wohlgenannt and Z. V. Vardeny, "Spin-dependent exciton formation rates in pi-conjugated materials," *Journal of Physics-Condensed Matter* **15**, pp. R83-R107 (2003).
- [26] M. Wohlgenannt, X. M. Jiang, C. Yang, O. J. Korovyanko, and Z. V. Vardeny, "Spin-dependent polaron pair recombination in pi-conjugated polymers: enhanced singlet exciton densities," *Synthetic Metals* **139**, pp. 921-924 (2003).
- [27] M. Wohlgenannt, X. M. Jiang, and Z. V. Vardeny, "Spin-dependent exciton formation rates in pi-conjugated oligomers and polymers," *Synthetic Metals* **137**, pp. 1069-1071 (2003).
- [28] M. Wohlgenannt, X. M. Jiang, and Z. V. Vardeny, "Spin-dependent exciton formation rates in pi-conjugated oligomers and polymers," *Physica B-Condensed Matter* **338**, pp. 318-322 (2003).
- [29] R. Osterbacka, M. Wohlgenannt, M. Shkunov, D. Chinn, and Z. V. Vardeny, "Excitons, polarons, and laser action in poly(p-phenylene vinylene) films," *Journal of Chemical Physics* **118**, pp. 8905-8916 (2003).
- [30] X. M. Jiang, C. C. Wu, M. Wohlgenannt, W. Y. Huang, T. K. Kwei, Y. Okamoto, and Z. V. Vardeny, "Morphology-dependent optical properties of substituted poly(p-phenylene-ethynylene) (PPE) films," *Physica B-Condensed Matter* **338**, pp. 235-239 (2003).
- [31] O. Epshtein, Y. Eichen, E. Ehrenfreund, M. Wohlgenannt, and Z. V. Vardeny, "Linear and nonlinear photoexcitation dynamics in pi-conjugated polymers," *Physical Review Letters* **90**, 046804 (2003).

- [32] E. Ehrenfreund, O. Epshtein, Y. Eichen, M. Wohlgenannt, and Z. V. Vardeny, "Dispersive nonlinear dynamics of photoexcitations in pi-conjugated polymers," *Synthetic Metals* **137**, pp. 1363-1365 (2003).
- [33] M. Wohlgenannt, C. Yang, and Z. V. Vardeny, "Spin-dependent delayed luminescence from nongeminate pairs of polarons in pi-conjugated polymers," *Physical Review B* **66**, 241201 (2002).
- [34] M. Wohlgenannt, X. M. Jiang, Z. V. Vardeny, and R. A. J. Janssen, "Conjugation-length dependence of spin-dependent exciton formation rates in Pi-conjugated oligomers and polymers," *Physical Review Letters* **88**, 197401 (2002).
- [35] S. V. Frolov, Z. Bao, M. Wohlgenannt, and Z. V. Vardeny, "Excited-state relaxation in pi-conjugated polymers," *Physical Review B* **65**, 205209 (2002).
- [36] M. Wohlgenannt, Z. V. Vardeny, S. V. Frolov, C. Kloc, and B. Batlogg, "Long-lived photoexcitations in alpha-hexathiophene single crystals," *Synthetic Metals* **116**, pp. 181-184 (2001).
- [37] M. Wohlgenannt, K. Tandon, S. Mazumdar, S. Ramasesha, and Z. V. Vardeny, "Formation cross-sections of singlet and triplet excitons in pi-conjugated polymers," *Nature* **409**, pp. 494-497 (2001).
- [38] M. Wohlgenannt, E. J. W. List, C. Zenz, G. Leising, W. Graupner, and Z. V. Vardeny, "Spectroscopy of conducting and insulating ladder-type poly(para-phenylene) device structures," *Synthetic Metals* **116**, pp. 353-356 (2001).
- [39] M. Wohlgenannt, X. M. Jiang, Z. V. Vardeny, S. V. Frolov, C. Kloc, and B. Batlogg, "Hexathiophene single crystals: luminescence and magnetic resonance," *Synthetic Metals* **119**, pp. 647-648 (2001).
- [40] A. Wohlgenannt and Z. V. Vardeny, "Photophysics properties of blue-emitting polymers," *Synthetic Metals* **125**, pp. 55-63 (2001).
- [41] W. Graupner and M. Wohlgenannt, "Density of states of ensembles of conjugated molecules deduced from the photobleaching and absorption spectra," *Synthetic Metals* **116**, pp. 193-197 (2001).
- [42] S. V. Frolov, C. Kloc, B. Batlogg, M. Wohlgenannt, X. Jiang, and Z. V. Vardeny, "Excitation dynamics in single molecular crystals of alpha-hexathiophene from femtoseconds to milliseconds," *Physical Review B* **63**, 205203 (2001).

- [43] S. V. Frolov, Z. Bao, M. Wohlgenannt, and Z. V. Vardeny, "Multiple pulse transient spectroscopy in luminescent pi-conjugated polymers," *Synthetic Metals* **116**, pp. 5-7 (2001).
- [44] N. Eradat, M. Wohlgenannt, Z. V. Vardeny, A. A. Zakhidov, and R. H. Baughman, "Studies of optical transitions related to pi-conjugated polymers and laser dyes infiltrated in opal photonic crystals," *Synthetic Metals* **116**, pp. 509-513 (2001).
- [45] M. Wohlgenannt, C. P. An, and Z. V. Vardeny, "Polarons in ladder-type polymer films; Recombination channels and electron-phonon coupling," *Journal of Physical Chemistry B* **104**, pp. 3846-3850 (2000).
- [46] S. V. Frolov, Z. Bao, M. Wohlgenannt, and Z. V. Vardeny, "Ultrafast spectroscopy of even-parity states in pi-conjugated polymers," *Physical Review Letters* **85**, pp. 2196-2199 (2000).
- [47] A. J. Cadby, P. A. Lane, M. Wohlgenannt, C. An, Z. V. Vardeny, and D. D. C. Bradley, "Optical studies of photoexcitations of poly(9,9-dioctyl fluorene)," *Synthetic Metals* **111**, pp. 515-518 (2000).
- [48] A. J. Cadby, P. A. Lane, H. Mellor, S. J. Martin, M. Grell, C. Giebeler, D. D. C. Bradley, M. Wohlgenannt, C. An, and Z. V. Vardeny, "Film morphology and photophysics of polyfluorene," *Physical Review B* **62**, pp. 15604-15609 (2000).
- [49] M. Wohlgenannt, W. Graupner, R. Osterbacka, G. Leising, D. Comoretto, and Z. V. Vardeny, "Singlet fission in luminescent and nonluminescent Pi-conjugated polymers," *Synthetic Metals* **101**, pp. 267-268 (1999).
- [50] M. Wohlgenannt, W. Graupner, G. Leising, and Z. V. Vardeny, "Photogeneration action spectroscopy of neutral and charged excitations in films of a ladder-type poly(para-phenylene)," *Physical Review Letters* **82**, pp. 3344-3347 (1999).
- [51] M. Wohlgenannt, W. Graupner, G. Leising, and Z. V. Vardeny, "Photogeneration and recombination processes of neutral and charged excitations in films of a ladder-type poly(para-phenylene)," *Physical Review B* **60**, pp. 5321-5330 (1999).
- [52] R. Osterbacka, M. Wohlgenannt, D. Chinn, and Z. V. Vardeny, "Optical studies of triplet excitations in poly(p-phenylene vinylene)," *Physical Review B* **60**, pp. 11253-11256 (1999).
- [53] R. Osterbacka, M. Shkunov, D. Chinn, M. Wohlgenannt, M. DeLong, J. Viner, and Z. V. Vardeny, "Optical spectroscopies of excited states in poly(para phenylene vinylene)," *Synthetic Metals* **101**, pp. 226-229 (1999).

- [54] M. Wohlgenannt, W. Graupner, F. P. Wenzl, S. Tasch, E. J. W. List, G. Leising, M. Graupner, A. Hermetter, U. Rohr, P. Schlichting, Y. Geerts, U. Scherf, and K. Mullen, "Photophysics of excitation energy transfer in highly fluorescent polymers," *Chemical Physics* **227**, pp. 99-109 (1998).
- [55] E. J. W. List, W. Graupner, M. Wohlgenannt, G. Leising, J. Partee, J. Shinar, P. Schlichting, U. Rohr, Y. Geerts, U. Scherf, and K. Mullen, "Dynamics of photoexcitations in highly fluorescent organic guest-host-systems," *Optical Materials* **9**, pp. 494-497 (1998).