

CURRICULUM VITAE

Dr. Andre J. Gesquiere

University of Central Florida

NanoScience Technology Center, Department of Chemistry, Department of Materials
Science and Engineering, and College of Optics and Photonics (CREOL)

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Professional Preparation

- 1997, Catholic University Leuven, Belgium, Chemistry, M.Sc./B.Sc.
- 2001, Catholic University Leuven, Belgium, Chemistry, Ph.D.
- 2002-2002, Postdoctoral Fellow, Department of Chemical Engineering and Chemistry, Eindhoven University of Technology, The Netherlands.
- 2002-2005, Postdoctoral Fellow, Department of Chemistry and Biochemistry, University of Texas at Austin.

Appointments

- 2011-present, Associate Professor, University of Central Florida
- 2005–2011, Assistant Professor, University of Central Florida

Honors

- Research Incentive Award, University of Central Florida, 2014
- National Science Foundation CAREER award (2008-2013)
- Fellow of the Institute for the Promotion of Innovation by Science and Technology in Flanders (1997-1999 and 1999-2001)

Research Interests

My primary research interest include nanoscience, nanotechnology, the physical chemistry of organic materials, optical and electronic processes in materials and devices for energy conversion, photophysics and photochemistry of nanomaterials, supramolecular chemistry and self-assembly of functional organic materials, scanning probe microscopy, biophysics, and imaging of biological systems including live cells.

Current research activities

Nanoscale Optical and Electronic Processes in Active Nanostructures and Devices for Solar Energy Conversion: understand how the architecture and morphology of materials and devices for solar energy conversion affect device function/performance. This research is focused on interfacial charge transfer phenomena at the nanoscale.

Biophysics: single molecule studies aimed at developing a mechanistic and kinetic understanding of interactions between biomolecules.

Past Research Experience

University of Central Florida, Orlando, Florida

Assistant Professor at the NanoScience Technology Center (NSTC) (07/2005 – 07/2011)
Our research program is focused on the imaging and spectroscopy of nanomaterials with applications in energy conversion devices and biological imaging and involves real time simultaneous study of the electrical and optical properties of materials embedded in single molecule/nanoparticle photovoltaic devices and imaging of intracellular processes in living cells and tissue models.

University of Texas at Austin, Austin, Texas

Postdoctoral Research Scientist at the Department of Chemistry and Center for Nano- and Molecular Science and Technology (06/2002 – 07/2005)

Supervisor: Prof. Paul F. Barbara

A new direction for single-molecule studies was developed. Novel spectroscopic techniques were developed that allow us to study the optical and opto-electronic processes occurring in single molecules of active materials (such as the conjugated polymer MEH-PPV) embedded in fully functional light-emitting-diode (LED) type devices. We discovered that the oxygen impurities in the device cause reversible photo-oxidation of the conjugated polymer molecules. These experiments have led to a detailed understanding of the photo-oxidation mechanism of conjugated polymers. Our studies have also revealed the importance of fundamental understanding of device processes in achieving efficient devices. New fundamental insights into the complex interactions among excited state and charged species that exist in the materials and the devices in which they are embedded were uncovered. Specifically, we have quantified the interactions between: singlet excitons (singlets) and charges (injected into the device from the electrodes), triplet excitons (triplets) and charges, singlets and triplets, and between triplets inside a functioning device. This novel research approach may lead to the optimization of LEDs by providing greater understanding of the fundamental processes that are directly related to the device operation and breakdown.

Eindhoven University of Technology, Eindhoven, The Netherlands

Postdoctoral Research Scientist at the Department of Chemical Engineering and Chemistry (01/2002-06/2002)

Supervisor: Prof. E. W. Meijer (Bert)

The two-dimensional self-assembly of pi-conjugated chiral oligo-phenylene vinylenes into physisorbed supramolecular structures was characterized. Of specific interest was the effect of chirality on the supramolecular structure, and the nature of the specific quadruple hydrogen bonding interactions that can be formed between oligomers. Differences in expression of molecular chirality were observed as a function of molecular length and the number of stereocenters the molecules carried. Mixing of oligomers of different length did not lead to phase separation, but to the formation of heterodimers,

stressing the important role of hydrogen bonding in the self-assembly process in both solution and at the liquid/solid interface.

Catholic University Leuven, Leuven, Belgium

Graduate Student at the Department of Chemistry (07/1997 – 12/2001)

Supervisor: Prof. Frans C. De Schryver, Co-Supervisor: Dr. Steven De Feyter

Thesis: Scanning Tunneling Microscopy and Spectroscopy of Organic Supramolecular Systems

Using Scanning Tunneling Microscopy the two-dimensional self-assembly of organic molecules into physisorbed supramolecular structures was characterized. This research has led to a profound understanding of the factors governing the supramolecular organization of organic molecules on a surface, resulting in better capability of predicting which molecular design is required for obtaining desired two-dimensional supramolecular patterns. With Scanning Tunneling Spectroscopy the electronic structure of pi-conjugated supramolecular structures was characterized. The effect of pi-stacking within a single stack was elucidated as a function of oligomer length and stack length. This work involved several collaborations with the group of Jean-Luc Bredas for modelling of the data (Georgia Tech (Atlanta, USA) and University of Mons-Hainaut (Mons, Belgium))

Teaching Experience

University of Central Florida students and postdocs:

James Worden: postdoctoral fellow: development of nanocomposite materials for solar energy conversion. Jim obtained a position as assistant professor at Lakeland University (Florida)

Daeri Tenery: graduate student, PhD Chemistry: development of nanocomposite materials for solar energy conversion

Maxwell Bonner: graduate student, PhD Chemistry: live cell imaging and characterization of fluorescent probes for intracellular imaging and tracking, solar energy materials for broadband absorption

Zhongjian Hu: graduate student, PhD Chemistry: development of nanocomposite materials for solar energy conversion

Mona Mathew: graduate student, PhD Chemistry: started first semester spring 2009. Will work on study of DNA diffusion in confined geometries (lipid tubules) for gene delivery application

Ulka Patel: undergraduate student (graduated), Valencia Community College, Orlando, FL: study of DNA diffusion in confined geometries (lipid tubules) for gene delivery application

Mark Russell: undergraduate student, Chemistry, solar energy materials for broadband absorption

Kevin White: undergraduate student, IDS Nanotrack, solar energy materials for broadband absorption

Ankit Gupta: undergraduate student, AMPAC (graduated): study of novel nanomaterials for solar energy conversion at the single molecule/nanoparticle level. Ankit was accepted as a graduate student at the University of Manchester (UK)

Joshua Truit: undergraduate student (graduated), Chemistry and Biomedical Sciences: study of novel nanomaterials for solar energy conversion at the single molecule/nanoparticle level

Aamna Dhillon, Jyoti Lodha, and Ruchi Jahagirdar: These three high school students (Seminole High School, Sanford, FL) are working on a solar project and won first prize in the regional science fair. The students learned about solar cells and how to make and improve them in the lab (collaboration with Dr. Zhai at UCF)

Kaley Smith: Lake Howell High School, Winter Park FL: developed a method based on magnetic nanobeads and quantum dots to detect E. Coli in contaminated water samples

Carlyle Waugh: Dr. Phillips High School, Orlando, FL, 9th grade: working on energy related research: solar energy materials for broadband absorption

Arjun Mathur: Lake Highland ASPIRE program: working on near IR organic dye photovoltaic cells

Simon Tang: undergraduate student, Chemistry, working on near IR organic dye photovoltaic cells

Lauren Simon-Bower: undergraduate student, Chemistry, working on single molecule studies of conducting polymer chain folding behavior as a function of chemical structure

Kristi Baker: undergraduate student, Chemistry, working on single conducting polymer nanoparticle studies to investigate effect of thermal annealing on nanoscale morphology of conducting polymer

Anne Ahlvers: undergraduate student, CREOL, REU student summer 2011 working on ternary blended polymer solar cells

Jeff Geldmeier: undergraduate student, NSTC, REU student summer 2012 working on tandem polymer solar cells and studying morphology of composite polymer nanoparticles

Eshwari Murty: undergraduate student, NSTC, REU student summer 2012 working on correlating single chain polymer folding with architecture of polymer backbone

Lacey Bennett: undergraduate student, Chemistry, conjugated polymer nanoparticles for cancer treatment

Henry Sanchez: undergraduate student, NSTC, REU student summer 2013, working on composite polymer nanoparticles for biophotonics

Samantha Pollack-Schneider: undergraduate student, NSTC, REU student summer 2013 working on correlating single chain polymer folding with architecture of polymer backbone through polarization studies

Marissa Krienke: undergraduate student, Chemistry, conjugated polymer nanoparticles for cancer treatment, surface modification and imaging

Saeid Khederzadeh: undergraduate student, MSE, conjugated polymer nanoparticles for cancer treatment, surface modification and imaging

Jamie Murbach: : undergraduate student, NSTC, REU student summer 2014, working on composite polymer nanoparticles for biophotonics

Edward Price: graduate student, Chemistry, working on predictive modeling of in-vitro properties of nanomaterials.

Tahmina Banu: graduate student, MSE, conjugated polymer nanoparticles for cancer treatment, surface modification and imaging.

Andrew Towers: graduate student, Chemistry, working on manufacturing and stability of polymer solar cells

University of Central Florida courses:

- Fall 2015, Course CHM3422.0001 Applied Physical Chemistry, 3 credit hours, revised course content
- Fall 2015, IDS6253 Bioanalytical Technology, , 3 credit hours, new course preparation
- Spring 2015, Course IDS 6252-0002 Biomedical Nanotechnology, 3 credit hours, new course preparation
- Spring 2015, Course PCB 4174-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours
- Spring 2015, Course IDS5127-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours
- Fall 2014, Course CHM3422.0001 Applied Physical Chemistry, 3 credit hours, revised course content
- Fall 2014, Course OSE 3490.0061 Nanophotonics 3 credit hours
- Spring 2014, Course PCB 4174-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours, revised course content
- Spring 2014, Course IDS5127-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours, revised course content
- Fall 2013, Course PHY3422.0001 Nanophysics 3 credit hours, new course preparation
- Fall 2013, Course CHM3422.0001 Applied Physical Chemistry 3 credit hours, revised course content
- Fall 2013, Course OSE 3490.0061 Nanophotonics 3 credit hours
- Spring 2013, Course PCB 4174-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours
- Spring 2013, Course IDS5127-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours
- Fall 2012, Course CHM3422.0001 Applied Physical Chemistry 3 credit hours, integrated writing assignments (from WAC training)
- Fall 2012, Course OSE 3490.0061 Nanophotonics 3 credit hours, integrated writing assignments (from WAC training)
- Spring 2012, Course PCB 4174-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours, updated course with molecular spectroscopy
- Spring 2012, Course IDS5127-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours, updated course with molecular spectroscopy

- Fall 2011, Course CHM3422.0001 Applied Physical Chemistry 3 credit hours, new course preparation
- Fall 2011, Course OSE 3490.0061 Nanophotonics 3 credit hours, updated course with molecular spectroscopy and labs
- Spring 2011, Course PCB 4174-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours, updated course with instructional videos
- Spring 2011, Course IDS5127-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours, updated course with instructional videos
- Fall 2010, Course CHM3410.0001 PCHEM 1 (Thermodynamics) 4 credit hours, updated and expanded curriculum to include more example and homework problems
- Fall 2010, Course OSE 3490.0061 Nanophotonics 3 credit hours, updated course with molecular and nanocrystal photophysics
- Spring 2010, Course PCB 4174-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours, new course preparation
- Spring 2010, Course IDS5127-0001 FBIS (Foundations of Bioimaging Science), 3 credit hours, new course preparation
- Fall 2009, Course CHM3410.0001 PCHEM 1 (Thermodynamics) 4 credit hours, updated and expanded curriculum to include quantum chemistry and molecular spectroscopy
- Fall 2009, Course OSE 3490.0061 Nanophotonics 3 credit hours, updated course with labs (new preparation)
- Fall 2008, Course CHS 6240.0001 Chemical Thermodynamics 3 credit hours, updated and expanded curriculum to include biothermodynamics, quantum chemistry, molecular spectroscopy and kinetics
- Fall 2008, Course OSE 3490.0061 Nanophotonics 3 credit hours, new course preparation
- Spring 2008, Course 4130L-00012 Advanced Analytical Chemistry Lab 2 credit hours
- Fall 2007, Course CHS 6240.0001 Chemical Thermodynamics 3 credit hours, new course preparation
- Fall 2007, Course BSC 3424.0001 Nanobiotechnology 3 credit hours, guest lecturer
- Spring 2007, Course CHM4130L.0013 Advanced Analytical Techniques (Lab) 4 credit hours, new course preparation
- Fall 2006, Course CHM3410.0001 PCHEM 1 (Thermodynamics) 4 credit hours, updated course with 3 additional chapters
- Spring 2006, Course CHM4906.0016 PCHEM 1 (Thermodynamics) independent study section
- Fall 2005, Course CHM3410.0001 PCHEM 1 (Thermodynamics) 4 credit hours, new course preparation
- Proposed nanoscience track course on energy applications of nanoscience

Teaching assistant Biochemical Engineering Course: supervised, instructed and graded students (Catholic University Leuven, 1997-2001)

Supervised Masters Degree student (chemistry), thesis: Scanning Tunneling Microscopy of Self-assembled Fluorinated Isophthalic acid derivatives on Graphite (Catholic University Leuven, 1998)

Supervised Masters Degree student (chemistry), thesis: Scanning Tunneling Microscopy of Diacetylene Compounds (Catholic University Leuven, 1999)

Atomic Force Microscopy training and assisting of over 70 users at the Center for Nano- and Molecular Science and Technology (University of Texas at Austin, 2002-2005)

Outreach program of the Center for Nano- and Molecular Science and Technology:

- educated groups of children aged 5 – 10 years old in nanoscience and nanotechnology, and provided demonstrations (University of Texas at Austin, 2003-2005)
- gave tours for undergraduates in the Science Undergraduate Research Group program at UT Austin, explaining the technological and societal impact of nanoscience in our present and future. This included live demonstrations of Atomic Force Microscopy and Electron Beam Lithography (University of Texas at Austin, 2004)

Invited Lectures Presented

Invited talk: Energy, Materials, and Nanotechnology (ENM, Orlando, FL) on December 9 2013: Near-infrared Photoresponse Sensitization of Solvent Additive Processed Poly(3-hexylthiophene)-Fullerene Solar Cells by a Low Band Gap Polymers

Invited talk: UCF Physics Colloquium on November 1 2013: Conjugated polymer nanostructured materials for device and biophotonics applications

Invited talk: Energy, Materials, and Nanotechnology (ENM, Orlando, FL) on April 18 2012: Towards polymer nanoparticle imaging and memory devices: charge trapping and storage by composite P3HT/PC₆₀BM nanoparticles

Invited talk: NanoFlorida 2011 (Orlando, FL) on October 1 2011: Correlation between Morphology and Electronic Processes Investigated from Single Conjugated Polymers to their Materials and Devices

Invited talk: ACS Denver on August 22 2011: Conducting polymer nanoparticles for optoelectronic devices and bioimaging

Invited talk: Optical Probes (OP)/Excited State Processes (ESP) (Santa FE, NM) on June 24 2011: Correlation between Morphology and Electronic Processes Investigated from Single Conjugated Polymers to their Materials and Devices

Invited talk FIAVS 2011 (Orlando, FL) on March 8 2011: Conducting polymer nanoparticles for cell imaging and therapy

Invited talk: University of Texas at San Antonio on September 17 2010: Composite Organic Nanoparticles for Solar Cell Applications: Exciton Migration and Morphology Investigated at the Nanoscale

Invited talk: ACS Spring 2010 meeting (San Francisco) on March 22 2010: Composite organic nanoparticles for solar cell applications: Exciton migration and morphology investigated at the nanoscale

Program Committee and Session Chair Smart Biomedical and Physiological Sensor Technologies VII Conference DS207, 2009-2010 on 5-9 April 2010, (Orlando,FL)

Session Chair FI-AVS 2010 (Orlando, FL) on March 9 2010: Optical Techniques for Applied Surface Analysis

Session Chair NanoFlorida 2009 (Orlando, FL) on September 26 2009: Nanophotonics and Nanoelectronics

Invited talk: NanoFlorida 2009 (Orlando, FL) on September 25 2009: Composite Organic Nanoparticles for Solar Cell Applications: Exciton Migration and Morphology Investigated at the Nanoscale

Invited talk: Florida International University on September 18 2009: Molecular scale structure-property relationships for amorphous and crystalline conjugated polymers

Invited talk: NanoRomania (Iasi, Romania) on June 03 2009: Structure-Property Relationships of Conjugated Polymer Materials Investigated at the Single Nanoparticle Level

Invited talk: Brookhaven National Lab, Center for Functional Nanomaterials on May 20 2009: Conjugated Polymer Photochemistry and Photophysics Investigated at the Single Molecule and Single Nanoparticle Level

Invited talk: University of Central Florida (Chemistry) on November 14 2008: Single Particle Spectroscopy on Conducting Polymer-Fullerene Composite Materials for Application in Organic Photovoltaic Devices

Invited talk: University of Southern Mississippi on October 24 2008: A Nanoscale Spectroscopic Study of Chain Morphology in Conducting Polymer Materials for Optoelectronic Device Applications

Invited talk: University of Central Florida (CREOL) on September 19 2008: A Nanoscale Spectroscopic Study of Chain Morphology in Conducting Polymer Materials for Optoelectronic Device Applications

Invited talk: Particles 2008 (international conference) on May 13 2008: Composite conjugated polymer-fullerene nanoparticles as model systems for the study of optoelectronic processes in organic photovoltaic devices

Invited talk: University of Central Florida Department of Mathematics and Physics on September 28, 2007. Excited State Interaction in Conjugated Polymer Devices

Invited talk: Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) (international conference) on October 16, 2007. Excited State Interaction in Conjugated Polymer Devices

Invited talk: University of New Mexico on November 02, 2007. Building a qualitative and quantitative understanding of optoelectronic processes in materials for solar energy conversion: from molecules to material

Invited talk: University of Florida on November 20, 2007. Building a qualitative and quantitative understanding of optoelectronic processes in conducting polymer materials

Invited talk: McGill University on May 19, 2006. Excitons, Polarons, and Their Interactions in Conjugated Polymer Nanoparticles and Devices

Publications: Book Chapters

UCF

Book review Journal of the American Chemical Society (JACS), published online **DOI:** 10.1021/ja101350v

Young Jong Lee, **Andre J. Gesquiere**, So-Jung Park, Paul F. Barbara Fluorescence-Voltage Single Molecule Spectroscopy of Conjugated Polymers, Dekker Encyclopedia of Nanoscience and Nanotechnology (Taylor & Francis)
DOI: 10.1081/E-ENN-120042180, (2006)

U.T. Austin

Andre J. Gesquiere, Doo Young Kim, So-Jung Park, and Paul F. Barbara

Applications of Scanned Probe Microscopy to Polymers:

Edited by James D. Batteas, Chris A. Michaels and Gilbert C. Walker

Oxford university press (2005)

“Chapter 1: Near Field Spectroscopic Studies of Fluorescence Quenching by Charge Carriers”

ISBN13: 9780841238831

ISBN10: 0841238839

K. U. Leuven

F.C. De Schryver, J. Hofkens, T. Gensch, S. De Feyter, P. Vanoppen, K. Tsuda, **A. Gesquière**, P. Foubert, K. Jeuris, W. Verheyen, L. Latterini, G. Schweitzer, T. Vosch, P.C.M. Grim, R. Shukla and W. Dehaen, De Boeck-Université Publ.

Bibliothèque Scientifique Francqui Monograph, Chapter 4, “Space resolved photochemistry from ensembles to single molecules”

Chapter 19, 561-589 (1999) ISBN2-8041-3218-8

S. De Feyter, P.C. Grim, P. Vanoppen, **A. Gesquiere**, F.C. De Schryver

Dynamics and photochemistry of 2-dimensional molecular crystals at the liquid-solid interface

“Organic Mesoscopic Chemistry”, ed. H. Masuhara, F.C. De Schryver, IUPAC

Chemistry for the 21st Century, Blackwell Science, ISBN 06320512563, p. 127-143, 1999

UCF

1. Development and Characterization of Conducting Polymer Nanoparticles for Photodynamic Therapy *In Vitro* Mona Doshi, Alicja Copik, Andre J. Gesquiere *Photodiagnosis and photodynamic therapy* **2005**, 12, 476-89
2. Conducting Polymer Nanoparticles for Targeted Cancer Therapy. Mona Doshi, Marissa Krienke, Saeid Khederzadeh, Henry Sanchez, Alicja Copik, Jeremiah Oyer, Andre J Gesquiere *RSC Advances*, **2015**, 5, 37943 - 37956
3. Molecular Packing in Organic Solar Cell Materials: Insights from the Emission Line Shapes of P3HT/PCBM Polymer Blend Nanoparticles. Crotty, A. M.; Gizzi, A. N.; Rivera-Jacquez, H. J.; Masunov, A. E.; Hu, Z.; Geldmeier, J. A.; Gesquiere, A. J. *J. Phys. Chem. C* **2014**, 118, 19975-19984
4. Composite Conjugated Polymer/Fullerene Nanoparticles as Sensitizers in Photodynamic Therapy for Cancer. Doshi, M.; Treglown, K.; Copik, A.; Gesquiere, A. J. *BioNanoScience* **2014**, 4, 15-26. **invited paper**
5. Caveolae-Mediated Endocytosis of Conjugated Polymer Nanoparticles. Lee, J. H.; Towney, M.; Machado, C.; Gomez, G.; Doshi, M.; Gesquiere, AJ; Moon, J. H. *Macromolecular Bioscience* **2013**, 13, 913-920.
6. P3HT Chain Morphology in Composite P3HT/PCBM Nanoparticles Studied by Single Particle Fluorescence Excitation Polarization Spectroscopy. Schneider-Pollack, S.; Doshi, M.; Geldmeier, J.; Gesquiere, A. J. *Biophysical Reviews and Letters* **2013**, 08, 243-253. **invited paper**
7. Influence of Backbone Rigidity on Single Chain Conformation of Thiophene-Based Conjugated Polymers. Hu, Z. J.; Liu, J. H.; Simon-Bower, L.; Zhai, L.; Gesquiere, A. J. *J. Phys. Chem. B* **2013**, 117, 4461.
8. Probing intra-cellular drug release event using activatable (OFF/ON) CdS:Mn/ZnS quantum dots (Qdots): spectroscopic studies to investigate interaction of Qdots with quencher. Jeremy Tharkur, Andrew Teblum, Srijita Basumallick, Rikhav Shah, Karishma Cantarero, Niharika Maity, Sara Rifai, Mona Doshi, Andre J. Gesquiere and Swadeshmukul Santra *Proc. SPIE* 8596, Reporters, Markers, Dyes, Nanoparticles, and Molecular Probes for Biomedical Applications V, 85960C (February 21, 2013); doi:10.1117/12.2008983
9. Near-infrared photoresponse sensitization of solvent additive processed poly(3-hexylthiophene)/fullerene solar cells by a low band gap polymer. Hu, Z. J.; Tang, S.; Ahlvers, A.; Khondaker, S. I.; Gesquiere, A. J. *Applied Physics Letters* **2012**, 101, 053308.
10. Linker-Induced Anomalous Emission of Organic-Molecule Conjugated Metal-Oxide Nanoparticles Volodymyr Turkowski, Suresh Babu, Duy Le, Amit Kumar, Manas K. Haldar, Anil V. Wagh, Zhongjian Hu, Ajay S. Karakoti, Andre J. Gesquiere, Benedict Law, Sanku Mallik, Talat S. Rahman, Michael N. Leuenberger, and Sudipta Seal *ACS Nano*, **2012**, 6, 4854.
11. The Effect of Fullerene on the Morphology of Conjugated Polymer Single Molecules and Nanoparticles *Zhongjian Hu and Andre J. Gesquiere Rev. Nanosci. Nanotechnol.* **2012**, 1, 103

12. Mitra, R. N.; Doshi, M.; Zhang, X.; Tyus, J. C.; Bengtsson, N.; Fletcher, S.; Page, B. D. G.; Turkson, J.; Gesquiere, A. J.; Gunning, P. T.; Walter, G. A.; Santra, S., An Activatable Multimodal/Multifunctional Nanoprobe for Direct Imaging of Intracellular Drug Delivery. *Biomaterials* **2012**, 33, 1500.
13. Zhongjian Hu, Andre J. Gesquiere Charge Trapping and Storage by Composite P3HT/PC60BM Nanoparticles Investigated by Fluorescence-Voltage/Single Particle Spectroscopy, *Journal of the American Chemical Society* **2011**, 133, 20850.
14. Wenlang Liang , Xuejun Zhang, Andre J. Gesquiere and Jiyu Fang Boojum and Stripe Textures in Long-range Orientationally Ordered Monolayers on Solid Substrates, *Langmuir*, **2011**, 27, 1051.
15. Zhongjian Hu, Jianhua Zou, Andre J. Gesquiere, Lei Zhai Single-Molecule Spectroscopy and AFM Morphology Studies of a Diblock Copolymer consisting of Poly(3-hexylthiophene) and Fullerene *Macromolecular Chemistry & Physics*, **2010**, 211, 2416..
16. Xuejun Zhang, Mona Mathew, Andre J. Gesquiere and Jiyu Fang Fluorescent Composite Tubes with pH-Controlled Shapes, *Journal of Materials Chemistry* **2010**, 18, 3716.
17. Hu, Z. J.; Daeri Tenery, Maxwell S. Bonner, Gesquiere, A. J. Correlation between Spectroscopic and Morphological Properties of Composite P3HT/PCBM Nanoparticles Studied by Single Particle Spectroscopy *Journal of Luminescence* **2010**, 130, 771.
18. Tenery, D.; Gesquiere, A. J. Interplay Between Fluorescence and Morphology in Composite MEH-PPV/PCBM Nanoparticles Studied at the Single Particle Level *Chemical Physics* **2009**, 365, 138.
19. Tenery, D.; Gesquiere, A. J. Effect of PCBM Concentration on Photoluminescence Properties of Composite MEH-PPV/PCBM Nanoparticles Investigated by a Franck-Condon analysis of Single Particle Emission Spectra *ChemPhysChem* **2009**, 10, 2449. **cover article**
20. Hu, Z. J.; Gesquiere, A. J. PCBM concentration dependent morphology of P3HT in composite P3HT/PCBM nanoparticles *Chemical Physics Letters* **2009**, 476, 51.
21. Tenery, D.; Worden, J. G.; Hu, Z. J.; Gesquiere, A. J. Single particle spectroscopy on composite MEH-PPV/PCBM nanoparticles *Journal of Luminescence* **2009**, 129, 423.
22. Gesquiere, A. J.; Tenery, D.; Hu, Z. J. Single-particle spectroscopy on conducting polymer-fullerene composite materials for application in organic photovoltaic devices *Spectroscopy* **2008**, 23, 32.
23. Park, S. J.; Link, S.; Miller, W. L.; Gesquiere, A.; Barbara, P. F. Effect of electric field on the photoluminescence intensity of single CdSe nanocrystals *Chemical Physics* **2007**, 341, 169.

Other than UCF

24. Gesquiere, A. J.; Park, S. J.; Barbara, P. F. Hole-induced quenching of triplet and singlet excitons in conjugated polymers *Journal of the American Chemical Society* **2005**, 127, 9556.

25. Barbara, P. F.; Gesquiere, A. J.; Park, S. J.; Lee, Y. J. Single Molecule Spectroscopy of Conjugated Polymers *Accounts of Chemical Research* **2005**, 38, 602.
26. Lee, Y. J.; Park, S.-J.; Gesquiere, A. J.; Barbara, P. F. Probing a molecular interface in a functioning organic diode *Applied Physics Letters* **2005**, 87, 051906.
27. Gesquiere, A. J.; Uwada, T.; Asahi, T.; Masuhara, H.; Barbara, P. F. Single molecule spectroscopy of organic dye nanoparticles *Nano Letters* **2005**, 5, 1321.
28. Gesquiere, A. J.; Lee, Y. J.; Yu, J.; Barbara, P. F. Single molecule modulation spectroscopy of conjugated polymers *Journal of Physical Chemistry B* **2005**, 109, 12366.
29. (13) Yu, J.; Lammi, R.; Gesquiere, A. J.; Barbara, P. F. Singlet-triplet and triplet-triplet interactions in conjugated polymer single molecules *Journal of Physical Chemistry B* **2005**, 109, 10025.
30. Gesquiere, A. J.; Park, S. J.; Barbara, P. F. F-V/SMS: A new technique for studying the structure and dynamics of single molecules and nanoparticles *Journal of Physical Chemistry B* **2004**, 108, 10301.
31. Park, S. J.; Gesquiere, A. J.; Yu, J.; Barbara, P. F. Charge injection and photooxidation of single conjugated polymer molecules *Journal of the American Chemical Society* **2004**, 126, 4116.
32. Gesquiere, A. J.; Park, S. J.; Barbara, P. F. Photochemistry and kinetics of single organic nanoparticles in the presence of charge carriers *European Polymer Journal* **2004**, 40, 1013.
33. Zhang, J.; Gesquiere, A.; Sieffert, M.; Klapper, M.; Mullen, K.; De Schryver, F. C.; De Feyter, S. Losing the expression of molecular chirality in self-assembled physisorbed monolayers *Nano Letters* **2005**, 5, 1395.
34. Mamdouh, W.; Uji-i, H.; Gesquiere, A.; De Feyter, S.; Amabilino, D. B.; Abdel-Mottaleb, M. M. S.; Veciana, J.; De Schryver, F. C. A nanoscale view of supramolecular stereochemistry in self-assembled monolayers of enantiomers and racemates *Langmuir* **2004**, 20, 9628.
35. Gesquiere, A.; Jonkheijm, P.; Hoeben, F. J. M.; Schenning, A.; De Feyter, S.; De Schryver, F. C.; Meijer, E. W. 2D-Structures of quadruple hydrogen bonded oligo(p-phenylenevinylene)s on graphite: Self-assembly behavior and expression of chirality *Nano Letters* **2004**, 4, 1175.
36. Miura, A.; De Feyter, S.; Abdel-Mottaleb, M. M. S.; Gesquiere, A.; Grim, P. C. M.; Moessner, G.; Sieffert, M.; Klapper, M.; Mullen, K.; De Schryver, F. C. Light- and STM-tip-induced formation of one-dimensional and two-dimensional organic nanostructures *Langmuir* **2003**, 19, 6474.
37. Gesquiere, A.; Jonkheijm, P.; Schenning, A.; Mena-Osteritz, E.; Bauerle, P.; De Feyter, S.; De Schryver, F. C.; Meijer, E. W. Direct observation of chiral oligo(p-phenylenevinylene)s with scanning tunneling microscopy *Journal of Materials Chemistry* **2003**, 13, 2164.
38. De Feyter, S.; Larsson, M.; Schuurmans, N.; Verkuijl, B.; Zorinians, G.; Gesquiere, A.; Abdel-Mottaleb, M. M.; van Esch, J.; Feringa, B. L.; van Stam, J.; De Schryver, F. Supramolecular control of two-dimensional phase behavior *Chemistry-a European Journal* **2003**, 9, 1198.

39. De Feyter, S.; Gesquiere, A.; Klapper, M.; Mullen, K.; De Schryver, F. C. Toward two-dimensional supramolecular control of hydrogen-bonded arrays: The case of isophthalic acids *Nano Letters* **2003**, 3, 1485.
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