

Young-Gi Kim

## Dr. Young-Gi Kim

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**PROFESSIONAL SUMMARY:** Advances in Polymer and Organic Solar Cells, Supercapacitors and Sensors  
 30 Years      Design, Synthesis, Characterization and Application of Polymers and Organic Materials  
 15 Years      Innovative Polymer Prototypes in Solar Cells and Supercapacitors  
 17 Years      US Government Funded Energy Programs as Core Scientist  
 10 Years      Industry Innovation including Scale up and Commercialization  
 6+ Years      Professor at the Department of Chemistry at Delaware State University  
 4+ Years      Postdoctoral Fellow at the John Reynolds Group at the Department of Chemistry at University of Florida

### WORLD CLASS INNOVATION

2010 – 2014      World best electrical and electrochemical conductive polymers  
                          Reported in international and US patent applications/Encyclopedia  
 2012      World best polymer electrochemical energy storage devices  
                          Reported at international nanotech conference  
 2007      World best efficient polymer and polymer-CNT solar cells  
                          Reported at MRS  
 2006      World first phosphorescent Pt-polymer solar cells  
                          Reported in in Chem. Commun.  
 2003      World first polythiophene sensitized solar cells  
                          Reported in Nano Letters  
 2002 – 2004      Efficient polymer biosensors and polymer molecular assembly  
                          Reported in Nano Letters and JMS  
 1991 – 1996      Biodegradable polymers in industry  
                          Scaled up and commercialized

### PROFESSIONAL EXPERIENCE

2015 – Present      PI, Energy and Organic Electronics Lab (<https://cast.desu.edu/ygkim>) Advanced materials, energy, organic electronics, bio and nanotech, prototype and engineering protocols  
 2015 – Present      Advisory Board Member, Moleculum (d/b/a, Wamco Inc.)  
                          NIR absorbing materials ([http://moleculum.com/#about\\_us](http://moleculum.com/#about_us))  
 2020 – Present      Guest Editor, Journal Polymers (Impact Factor: 4.329)  
 2017– 2019      Consultant, a Private Sector (\$3B)  
 2018      Visiting Professor, NCKU  
 2016      Invited Professor, CASE, POSTECH  
 2015      Visiting Professor, Department of Energy Engineering, Han Yang University  
                          Perovskite Solar Cells and Organic Quantum Dot  
 2013 – 2013      Applied Research Chemist, Wamco Inc.  
                          Upscale synthesis of optoelectric organometallic materials in hundreds grams scale  
                          Installation of optoelectric organometallic materials production lab and the facility  
 2007 – 2012      Senior Research Chemist, Crosslink Inc.

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Synthesis of inherent electrical and electrochemical conducting polymers  
Electrochemical characterization

2003 – 2007 Polymer supercapacitors and the prototypes (energy)  
Postdoctoral Fellow, University of Florida  
Synthesis of variable band gap conjugated D-A polymers and organic molecules  
Organic solar cells (energy), polymer-CNT electronics of LEDs and SCLC (hall effects)

1998 – 2003 Phosphorescent metal-polymer solar cells (energy)  
Scientist/Research/Teaching Assistant, Center for Advanced Materials, University of Massachusetts Lowell

1991 – 1996 Synthesis of fluorescence and conjugated polymers  
Synthesis of organic, organometallic and inorganic materials  
Synthesis and application of nanoparticles  
Polymer and dye sensitized solar cells (energy)  
Polymer bio sensors and polymer molecular assembled layers  
Research Scientist, Sam Yang Genex  
Commercialization of multiple specialty polymer products including biodegradable and biopolymers  
Processing of polymer materials: chemical modification, kneading, compounding, extrusion, injection molding, film blowing

1989 – 1991 Research/Teaching Assistant, Han Yang University  
Development of specialty polymer products including biodegradable and biopolymers  
Processing of polymer materials: chemical modification, compounding, extrusion

## EDUCATION

2015 – Present Assistant Professor, Chemistry, Delaware State University  
2007 – 2012 Adjunct Faculty, Missouri State University  
2003 – 2007 Postdoctoral Fellow, Chemistry, University of Florida  
Advisor: Dr. John R. Reynolds (Chemistry at Georgia Tech)  
1998 – 2003 Ph.D., Polymer Science (Plastic Engineering), Chemistry, University of Massachusetts Lowell  
Advisor: Dr. Jayant Kumar (Professor & Director of Center for Advanced Materials); Co-Advisor: Dr. Lynne A. Samuelson  
**Thesis: "Studies on Electro-Optical Properties of Conjugated Polymers and Novel Metal Complexes in Nanocrystalline TiO<sub>2</sub> Photovoltaic Cells and Sensor. "**  
1997 – 1997 Graduate Student, Macromolecular Science and Engineering, Case Western Reserve University,  
Advisor: Dr. Virgil Percec (Chem at Univ. of Penn)  
1985 – 1991 B.S. & M.S., Organic and Nano (Textile) Engineering, Han Yang University  
Advisor: Dr. Seung-soon Im

## IP ACTIVITIES

2012 US 20120154980 A1, Conductive Polymer Composites  
2012 US 20120182666 A1, Conductive Polymer Composites  
2011 EP 2370982 A2, Intrinsically Conductive Polymers  
2011 WO 2011063037 A3 Conductive polymer composites  
2010 WO 2010065859 A3, Intrinsically Conductive Polymer for Supercapacitor  
2010 US 20100208413 A1, Intrinsically Conductive Polymers

## ADVISORY ACTIVITIES @ DSU

2015 – Present Advisor for 17 Graduate and Undergraduate Students

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### TEACHING ACTIVITIES @ DSU

2015-present Organic Chemistry, Advanced Organic Chemistry, Polymer Chemistry and General Chemistry

### COMMUNITY SERVICE @ DSU

2015 – Present Curriculum Committee Chair at Chemistry, Delaware State University  
 2015 – Present Advisory Committee Chair at Chemistry, Delaware State University  
 2017 – Present Advisory Committee at Chemistry, Delaware State University  
 2018 – Present Faculty Senate, Delaware State University  
 2018 – Present Research Representative at Chemistry, Delaware State University  
 2019 – 2020 *ad hoc* Personal Committee at Chemistry, Delaware State University  
 2019 – Present CAST PhD Program Committee at Chemistry, Delaware State University

### PROFESSIONAL AFFILIATIONS AND ACTIVITIES

2021 Journal Reviewer of Polymers (Impact Factor: 4.329)  
 2020 - Present Guest Editor, Special Issue, Journal Polymers (Impact Factor: 4.329)  
 2020 - Present DOE Grant Proposal Reviewer  
 2020 American Chemical Society (ACS), 16-year service  
 2020 Materials Research Society (MRS)  
 2020 Journal Reviewer of Organic Electronics (Impact Factor: 3.31)  
 2019 Consultant, a Private Sector (\$3B)  
 2019 Advisory Board, Moleculum  
 2018 Visiting Professor, NCKU  
 2018 Reviewer of Handbook of Conducting Polymers (4<sup>th</sup> Ed)  
 2016 NSF Proposal Reviewer  
 2016 Invited Professor, POSTECH  
 2016 Journal Reviewer of Nano Energy (Impact Factor: 10.325)  
 2015 Visiting Professor, Energy Engineering, Han Yang University  
 2007 – 2012 Adjunct Faculty, Missouri State University  
 2012 Invited Speaker at Tech Connect World  
 2008 Nanotech Research Featured by a Newspaper, News Leader  
 2000 The President of KGSA at UMASS Lowell

### PUBLICATIONS AND PRESENTATION

40+ Peer Refereed and Conference Articles (1800+ cited; IF: 95)  
 120+ Invitational and Tech Presentations

### SELECTED 8 PUBLICATIONS

1. **Kim, Young-Gi**; Hai-long Nyugen; Kinlen, Patrick. "Secondary Dopants of Electrically Conducting Polyanilines." *Polymers* (2021) 13, 2904.
2. Casson, Chere; **Kim, Young-Gi** "Compositional Programming of Group IV Semiconductor Nanomaterials Toward Rationally-Designed Optoelectronic Properties" Technical Annual Report for a Project (Reference: W911NF1810471) (2021).

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3. Casson, Chereese; **Kim, Young-Gi** "Compositional Programming of Group IV Semiconductor Nanomaterials Toward Rationally-Designed Optoelectronic Properties" Technical Annual Report for a Project (Reference: W911NF1810471) (2020).
4. Casson, Chereese; **Kim, Young-Gi** "Compositional Programming of Group IV Semiconductor Nanomaterials Toward Rationally-Designed Optoelectronic Properties" Technical Annual Report for a Project (Reference: W911NF1810471) (2019).
5. **Kim, Young-Gi**; Kinlen, Patrick; Jung, June-Ho; Mbugua, Joseph; Besi, Sabina; Birschbach, Michael; Tregre, Greg, Von Ebron, Ramil Mercado, Hai-long Nyugen. "Polymer Energy Storage System Utilizing p- and n-Dopable Polymer Electrode." Dekker Encyclopedia of Nanoscience and Nanotechnology, 3<sup>rd</sup> Ed. CRC Press (2014) 6, 3742-3749 (*Invited*).
6. **Kim, Young-Gi**; Christian, Hermona Y.; Niazimbetova, Zukhra I.; Ananthkrishnan, Nisha; Thompson, Barry C.; Galvin, Mary E.; Reynolds, John R. "p-OXA-X: A New Oligo Photosensitizer for Organic Solar Cells." Solar Energy Materials and Solar Cells (2008) 92(3), 307-312.
7. Thompson, Barry C.; **Kim, Young-Gi**; McCarley, Tracy D.; Reynolds, John R. "Soluble Narrow Band Gap and Blue Propylenedioxythiophene-Cyanovinylene Polymers as Multifunctional Materials for Photovoltaic and Electrochromic Applications." J. Am. Chem. Soc. (2006) 128(39), 12714 - 12725.
8. Wang, Xianyan; **Kim, Young-Gi**; Drew, Christopher; Ku, Bon-Cheol; Kumar, Jayant; Samuelson, Lynne. "Electrostatic Assembly of Conjugated Polymer Thin Layers on Electrospun Nanofibrous Membranes for Biosensors." Nano Letters, (2004) 4(2), 331-334.
9. **Kim, Young-Gi**; Walker, John; Samuelson, Lynne; Kumar, Jayant. "Efficient Light Harvesting Polymers for Nanocrystalline TiO<sub>2</sub> Photovoltaic Cells." Nano Letters, (2003), 3(4), 523-525.

#### SELECTED 5 INVITED PRESENTATIONS

1. **Kim, Young-Gi** "World Best Polymer Supercapacitors: From Fundamental Concepts to Advanced Features " NCKU, Taiwan, 2018 (*Invited*).
2. **Kim, Young-Gi**; Abousamra, Wafaa; Yang, Dan; Melton, Omar; Jung, June-Ho; Besi, Sabina; Birschbach, Michael; Von, Ebron; Mercado, Ramil; Kinlen, Patrick; Nguyen, Hai-Long "Electroactive Polymers for Energy, Electronic and Photonic Applications" IUPAC-KPS40, Jeju, South Korea, 2016 (*Invited*).
3. **Kim, Young-Gi** "World's Best Energy Storage Materials and the Devices: From Scientific Findings to Engineering Application" SAIT Forum, Sam Sung Electronics, South Korea, 2015. (*Invited*)
4. **Kim, Young-Gi** "Advances in High Power and Energy Density Supercapacitors Utilizing Metal-Like Conductive Polymer Electrode" Power Electronic Symp., Cleantech, Santa Clara, CA, 2012/Nanotech 2012 (*Invited*).
5. **Kim, Young-Gi**; Samuelson Lynne; Kumar, Jayant. "Syntheses and Optoelectronic Properties of Novel Dyes and Conjugated Polymers for the Application of Solar Cells" in Bell Lab., Lucent Technology, NJ, Jan. 2003. (*Invited*)

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**PUBLICATIONS (SELECTED)**

1. **Kim, Young-Gi**; Hai-long Nyugen; Kinlen, Patrick. "Secondary Dopants of Electrically Conducting Polyanilines." *Polymers* (2021) 13, 2904.
2. **Kim, Young-Gi**; Kinlen, Patrick; Jung, June-Ho; Mbugua, Joseph; Besi, Sabina; Birschbach, Michael; Tregre, Greg, Von Ebron, Ramil Mercado, Hai-long Nyugen. "Polymer Energy Storage System Utilizing p- and n-Dopable Polymer Electrode." *Dekker Encyclopedia of Nanoscience and Nanotechnology*, 3<sup>rd</sup> Ed. CRC Press (2014) 6, 3742-3749 (*Invited*).
3. **Kim, Young-Gi**; Kinlen, Patrick; Jung, June-Ho; Mbugua, Joseph; Besi, Sabina; Birschbach, Michael; Tregre, Greg. "Advanced p- and n-Dopable Polymers Supercapacitors." *Energy Storage Spotlight Section, NSTI-Nanotech 2011* (2011), 1, 682-685.
4. Kinlen, Patrick; Mbugua, Joseph; **Kim, Young-Gi**; Jung, June-Ho; Viswanathan, Sriram. "Supercapacitors Using n and p-Type Conductive Polymers Exhibiting Metallic Conductivity." *ECS Transactions* (2010) 25 (35), 157-162.
5. Kinlen, Patrick; **Kim, Young-Gi**; Mbugua, Joseph; Jung, June-Ho; Birschbach, Michael. "Solid State Bipolar Supercapacitor Utilizing Electroactive Polymers." *20<sup>th</sup> International Seminar on Double Layer Capacitors & Hybrid Energy Devices* (2010) 126-143.
6. Mei, Jianguo; Ogawa, Katsu; **Kim, Young-Gi**; Heston, Nathan C.; Arenas, Daniel J.; Nasrollahi, Zahra; McCarley, Tracey D.; Tanner, David B.; Reynolds, John R; Schanze, Kirk S. "Low-Band-Gap Platinum Acetylide Polymers as Active Materials for Organic Solar Cells." *ACS Applied Materials and Interfaces* (2009) 1(1), 150-161.
7. Nasrollahi, Zahra; Mei, Jianguo; Ogawa, Katsu; **Kim, Young-Gi**; Heston, Nathan; Arenas, Daniel; Carley, Tracy Mc; Tanner, David; Reynolds, John ; Schanze, Kirk. "Thin Film Optical Measurements on a Low-bandgap Platinum-Acetylide Conjugated Polymer Developed for Use in Organic Solar Cells." *Bull. Am. Phys. Soc.* (2009) 54, S1.12.
8. **Kim, Young-Gi**. "DSSC" Fiber Technology and Industry (2008) 12 (3) 165-168 (*Invited*).
9. **Kim, Young-Gi**; Christian, Hermona Y.; Niazimbetova, Zukhra I.; Ananthkrishnan, Nisha; Thompson, Barry C.; Galvin, Mary E.; Reynolds, John R. "p-OXA-X: A New Oligo Photosensitizer for Organic Solar Cells." *Solar Energy Materials and Solar Cells* (2008) 92(3), 307-312.
10. **Kim, Young-Gi**; Viswanathan, Sriram; Mbugua, Joseph; Jung, June-Ho; Kinlen, Patrick. "High Performance Supercapacitors Utilizing Conductive Polymers with Improved Charge Transfer and Redox Activity." *Proceeding of 18th International Seminar on Double Layer Capacitors & Hybrid Energy Storage Devices* (2008) 218-223.
11. Kinlen, Patrick; Mbugua, Joseph; **Kim, Young-Gi**; Jung, June-Ho; Viswanathan, Sriram.; Liu, Jingyue. "Highly Conductive Nanostructured Polyaniline Films for Supercapacitor Applications." *Polymeric Materials: Science & Engineering* (2008) 99, 703.

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12. Mbugua, Joseph; Kinlen, Patrick; **Kim, Young-Gi**; Jung, June-Ho; Viswanathan, Sriram.; Liu, Jingyue; Kinlen, Patrick. "High Energy and Power Density Supercapacitors using Highly Conductive Polyaniline Films." *Polymeric Materials: Science & Engineering* (2008), 99, 510.
13. **Kim, Young-Gi**; Mosurkal, Ravi; Walker, John; Li, Lian; Samuelson, Lynne; Kumar, Jayant. "Synthesis and Characterization of a Ruthenium (II) Complex for Photovoltaic Cells." *Journal of Macromolecular Science: Pure & Applied Chemistry* (2007) 44(12), 1255-1260.
14. Guo, Fengqi; Ogawa, Katsu; **Kim, Young-Gi**; Danilov, Evgeny O.; Castellano, Felix N.; Reynolds, John R.; Schanze, Kirk A. "A Fulleropyrrolidine End-Capped Platinum-Acetylide Triad: The Mechanism of Photoinduced Charge Transfer in Organometallic Photovoltaic Cells." *Phys. Chem. Chem. Phys.* (2007) 21(9), 2724-2734.
15. **Kim, Young-Gi**; Galand, Emilie; Thompson, Barry C.; Walker, John; Fossey, Stephen; McCarley, Tracy D.; Abboud, Khalil A.; Reynolds, John R. "Isoregic Thienylene-Phenylenes: The Effects of Structural Variation and Application to Photovoltaic Devices." *Journal of Macromolecular Science: Pure & Applied Chemistry* (2007) 44(7), 665-674.
16. Reynolds, John R.; Dyer, Aubrey L.; Ertas, Merve; Galand, Emilie M.; **Kim, Young-Gi**; Steckler, Timothy T.; Thompson, Barry C.; Turku, Harun. "Push and Pull of Electrons in Polyheterocycles." *Polymeric Materials: Science & Engineering* (2007), 96, 300.
17. Galand, Emilie M.; **Kim, Young-Gi**; Mwaura, Jeremiah K.; Jones, Adolphus G.; McCarley, Tracy D.; Shrotriya, Vishal; Yang, Yang; Reynolds, John R. "Optimization of Narrow Band-Gap Propylenedioxythiophene:Cyanovinylene Copolymers for Optoelectronic Applications." *Macromolecules* (2006) 39(26); 9132-9142.
18. Thompson, Barry C.; **Kim, Young-Gi**; McCarley, Tracy D.; Reynolds, John R. "Soluble Narrow Band Gap and Blue Propylenedioxythiophene-Cyanovinylene Polymers as Multifunctional Materials for Photovoltaic and Electrochromic Applications." *J. Am. Chem. Soc.* (2006) 128(39), 12714 - 12725.
19. Guo, Fengqi; **Kim, Young-Gi**; Reynolds, John R.; Schanze, Kirk A. "Platinum-Acetylide Polymer Based Solar Cells: Involvement of the Triplet State for Energy Conversion." *Chem. Commun.* (2006), 17, 1887-1889.
20. Galand, Emilie; Thompson, Barry C.; Jones, Genay; **Kim, Young-Gi**; Reynolds, John R. "Narrow Band Gap Donor-Acceptor Copolymers for Optoelectronic Devices." *Polymeric Materials: Science & Engineering* (2006), 94, 819.
21. **Kim, Young-Gi**; Thompson, Barry C.; Iyengar, Nisha A.; Padmanaban, G.; Ramakrishnan, S.; Reynolds, John R. "Variable Band Gap Conjugated Polymers for Optoelectronic and Redox Applications." *Journal of Materials Research* (2005), 20(12), 3188-3198 (*Invited*).
22. Thompson, Barry C.; **Kim, Young-Gi**; Reynolds, John R. "Spectral Broadening in MEH-PPV: PCBM-Based Photovoltaic Devices via Blending with a Narrow Band Gap Cyanovinylene-Dioxythiophene Polymer." *Macromolecules (Communication)*, (2005), 38(13), 5359-5362.

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23. Snook, Julie H.; Samuelson, Lynne; Kumar, Jayant; **Kim, Young-Gi**; Whitten, James E. "Ultraviolet photoelectron spectroscopy of nanocrystalline TiO<sub>2</sub> films sensitized with (2,2'-bipyridyl)ruthenium(II) dyes for photovoltaic applications." *Organic Electronics*, (2005), 6(2), 55-64.
24. Wang, Xianyan; **Kim, Young-Gi**; Drew, Christopher; Ku, Bon-Cheol; Kumar, Jayant; Samuelson, Lynne. "Electrostatic Assembly of Conjugated Polymer Thin Layers on Electrospun Nanofibrous Membranes for Biosensors." *Nano Letters*, (2004) 4(2), 331-334.
25. **Kim, Young-Gi**; Thompson, Barry C.; Iyengar, Nisha A.; Padmanaban, G.; Ramakrishnan, S.; Reynolds, John R. "Polymer Blend Based Photovoltaic Devices." *Polymer Preprints* (2004), 45(1), 258.
26. Thompson, Barry C.; Dubois, C. J. Jr.; **Kim, Young-Gi**; Reynolds, John R. "Donor-Acceptor Based Polymers for Photovoltaics." *Polymer Preprints* (2004), 45(1), 214.
27. **Kim, Young-Gi**; Walker, John; Samuelson, Lynne; Kumar, Jayant. "Efficient Light Harvesting Polymers for Nanocrystalline TiO<sub>2</sub> Photovoltaic Cells." *Nano Letters*, (2003), 3(4), 523-525.
28. **Kim, Young-Gi**; Kim, Jaehyun; Ahn, Heejoon; Kang, Bongwoo; Sung, Changmo; Samuelson, Lynne; Kumar, Jayant. "Molecular Assembly by Sequential Ionic Adsorption of Nanocrystalline TiO<sub>2</sub> and a Conjugated Polymer." *Journal of Macromolecular Science: Pure & Applied Chemistry*, (2003), A40 (12), 1307-1316.
29. Mosurkal, Ravi; **Kim, Young-Gi**; Kumar, Jayant; Li, Lian; Walker, John; Samuelson, Lynne. "Mono- and Dinuclear Ruthenium Complexes for Nanocrystalline TiO<sub>2</sub> Based Dye-Sensitized Photovoltaics." *Journal of Macromolecular Science: Pure & Applied Chemistry*, (2003), A40 (12), 1317-1325.
30. Wang, Xianyan; **Kim, Young-Gi**; Drew, Christopher; Ku, Bon-Cheol; Kumar, Jayant; Samuelson, Lynne. "Biochemical sensor via combination of electrospinning with electrostatic layer-by-layer assembly." *Polymeric Materials: Science & Engineering* (2003), 88, 35-36.
31. **Kim, Young-Gi**; Samuelson, Lynne; Kumar, Jayant; Tripathy, Sukant. "Carboxylated Polythiophenes: Polymer Biosensors in Liquid and Solid States." *Journal of Macromolecular Science: Pure & Applied Chemistry* (2002), A39 (10), 1127-1130.
32. Wang, Xianyan; **Kim, Young-Gi**; Drew, Christopher; Ku, Bon-Cheol; Kumar, Jayant; Samuelson, Lynne. "Combination of Electrospinning and Electrostatic Layer-by-Layer Self-Assembly: A new strategy for sensor fabrication." *Fiber Society Annual Technical Conference Proceedings*, (2002), 117-119.
33. **Kim, Young-Gi**; Walker, John; Samuelson, Lynne; Kumar, Jayant. "Efficient Light Harvesting Polythiophenes for Nanocrystalline TiO<sub>2</sub> Photovoltaic Cells." *Polymer Preprints* (2002), 43(2), 577-578.
34. **Kim, Young-Gi**; Samuelson, Lynne; Kumar, Jayant. "Carboxylated Polythiophenes for Biosensor Applications." *Polymer Preprints* (2002), 43(2), 1390-1391.
35. Kim, Jaehyun; **Kim, Young-Gi**; Chittibabu, Kethinni G.; Cazeca, Mario J.; Kim, Dong-Yu; Kumar, Jayant; Tripathy, Sukant K. "Syntheses and luminescence properties of new fluorescent dye molecules and polymers." *Polymer Preprints* (1999), 40(2), 1239-1240.

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36. Kim, Jaehyun; **Kim, Young-Gi**; Chittibabu, Kethinni G.; Cazeca, Mario J.; Kim, Dong-Yu; Kumar, Jayant; Tripathy, Sukant K. "Preparation and properties of luminescent metal-complex containing conjugated and non-conjugated polymers." *Polymer Preprints* (1999), 40(2), 1237-1238.
37. **Kim, Young-Gi**; Park, Young-Hoon; Im, Seung-Soon. "The environmental degradability of starch-polyethylene composite film." *Kongop Hwahak* (1993), 4(1), 178-87.

## MISCELLANEOUS PUBLICATIONS

### Reports for HBCU-MI DOD

1. Casson, Cherese; **Kim, Young-Gi** "Compositional Programming of Group IV Semiconductor Nanomaterials Toward Rationally-Designed Optoelectronic Properties" Technical Annual Report for a Project (Reference: W911NF1810471) (2021).
2. Casson, Cherese; **Kim, Young-Gi** "Compositional Programming of Group IV Semiconductor Nanomaterials Toward Rationally-Designed Optoelectronic Properties" Technical Annual Report for a Project (Reference: W911NF1810471) (2020).
3. Casson, Cherese; **Kim, Young-Gi** "Compositional Programming of Group IV Semiconductor Nanomaterials Toward Rationally-Designed Optoelectronic Properties" Technical Annual Report for a Project (Reference: W911NF1810471) (2019).

### Reports for US Army Natick Lab

1. Kumar, Jayant; **Kim, Young-Gi**. "Enhancement in Photoinduced Sensitization of Conjugated Polymer in Nanocrystalline TiO<sub>2</sub> Photovoltaic Cells" Fourteenth Technical Report for a Project (Reference DAAD16-01-C-0011), Dec. 2002.
2. Kumar, Jayant; **Kim, Young-Gi**. "Light Harvesting Polythiophenes for Nanocrystalline TiO<sub>2</sub> Photovoltaic Cells" Tenth Technical Report for a Project (Reference DDAD16-99-C-1037), Dec. 2001.
3. Kumar, Jayant; **Kim, Young-Gi**. "Synthesis and Characterization of Ruthenium Dyes for Photovoltaic Cells" Ninth Technical Report for a Project (Reference DDAD16-99-C-1037), Sep. 2001.

## PRESENTATIONS (*Note presenter is underlined*)

1. **Kim, Young-Gi** "The World Top Tier Polymer Energy Storage Devices and the Promising Perspectives" Caltech-NASA-JPL, CA 2021 (*Invited*).
2. **Kim, Young-Gi** " Solution Processible and Electrically Conductive Polymer Films and The Polymer Supercapacitors." Boron Molecular 2021 (*Invited*).
3. **Abousamra, Wafaa**; (Advisor: Kim, Young-Gi) "Fine Tuning of Energy Levels Through Group IV Element Containing Side Chain Engineering for Polymer Solar Cells" Delaware State University, DE 2021.



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4. **Yang, Dan;** (Advisor: Kim, Young-Gi) "Research Progress of Small Molecule Donors with High Crystallinity in Small Molecule Organic Solar Cells" Delaware State University, DE 2021.
5. **Thomas, Destinee;** (Advisor: Kim, Young-Gi) "Dye Sensitized Solar Cells with Group IV Element Compounds" Delaware State University, DE 2021.
6. **Kim, Young-Gi** "Nobel Prize 2019 in Chemistry" Delaware State University, DE 2019.
7. **Abousamra, Wafaa;** Kim, Young-Gi "Electron Donor-Acceptor for Photo-Induced Charge Transport in Energy and Opto-Electronic Applications" Delaware State University, DE 2019.
8. **Fahey, Marshall;** Kim, Young-Gi "2-Dimensional Carbon Nanomaterials for Opto-Electronic Applications" Delaware State University, DE 2019.
9. **Kim, Young-Gi** "Integral Advances at Energy and Organic Electronics: Innovation, Creativity and Beyond Expectation" POSTECH, South Korea 2018 (*Invited*).
10. **Kim, Young-Gi** "Integral Advances at DSU Chemistry: Innovation, Creativity and Beyond Expectation" DSU, DE 2018 (*Invited*).
11. **Kim, Young-Gi** "World Best Polymer Supercapacitors: From Fundamental Concepts to Advanced Features " NCKU, Taiwan, 2018 (*Invited*).
12. **Kim, Young-Gi** "Advancements in the Processability and Electrical Properties of Electroactive Polymers and the Applications" KIST, South Korea, 2018 (*Invited*).
13. **Kim, Young-Gi** " Electroactive Polymers: A Platform for Innovative Energy Storage Devices" Yonsei University, South Korea, 2018 (*Invited*).
14. **Abousamra, Wafaa;** Yang, Dan; Kim, Young-Gi. "Organic Electron Acceptors for Energy Applications" Delaware State University, DE 2018.
15. **Kim, Young-Gi, et al** "Organic Electronics: Conformal, Portable and Tactical Energy Solution" MRS Meeting, Phoenix, AZ, 2018.
16. **Kim, Young-Gi** "Electroactive Polymers and Advanced Energy Storage Devices: From Science to Engineering" American Chemical Society Korean Chapter Workshop, Yonsei University, South Korea, 2017 (*Invited*).
17. **Kim, Young-Gi** "Conjugated Polymers and the Application for Supercapacitors" Han Yang University, South Korea, 2017 (*Invited*).
18. **Kim, Young-Gi** "Superb and Innovative Polymer Energy Storage Devices: From Fundamental Aspects to Advanced Features" Ewha Womans University, South Korea, 2017 (*Invited*).
19. **Kim, Young-Gi;** Abousamra, Wafaa; Yang, Dan; Melton, Omar; Jung, June-Ho; Besi, Sabina; Birschbach, Michael; Von, Ebron; Mercado, Ramil; Kinlen, Patrick; Nguyen, Hai-Long "Unusual

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- Enhancement in the Processability and Electrical Properties of Electroactive Polymers via the Formation of Unusual Building Blocks" ACS Meeting, Washington DC, 2017.
20. **Kim, Young-Gi** "Electroactive Polymers for Innovative Energy Devices" SungKyunKwan University, South Korea, 2017 (*Invited*).
  21. **Kim, Young-Gi** " Affordable and Innovative Energy Storage Devices: A Key Role of Electrolytes and Separators for Securing Survivability at Extreme Environment" KITECH, South Korea, 2017 (*Invited*).
  22. **Abousamra, Wafaa**; Yang, Dan; Melton, Omar; Kim, Young-Gi. "Controllable Electrical and Photonic Characteristics via Molecular Structural Variation of Electroactive Polymers" Delaware State University, DE 2017.
  23. **Yang, Dan**; Abousamra, Wafaa; Melton, Omar; Kim, Young-Gi "Enhancement in Electrical Conductivity of Conformal and Inherent Electrical Conductive Polymer Layer" Delaware State University, DE 2017.
  24. **Kim, Young-Gi**; Abousamra, Wafaa; Yang, Dan; Melton, Omar; Jung, June-Ho; Besi, Sabina; Birschbach, Michael; Von, Ebron; Mercado, Ramil; Kinlen, Patrick; Nguyen, Hai-Long "Electroactive Polymers for Advanced Energy Storage Devices: From Synthesis to Engineering" ACS Meeting, San Francisco, CA, 2017.
  25. **Omar Melton**; Yang, Dan; Abousamra, Wafaa; **Kim, Young-Gi** "Electroactive Polymers Combined with Nanomaterials for High Performance Energy Devices" 18th Annual Philadelphia AMP Research Symposium and Mentoring Conference, Philadelphia, PA, 2016.
  26. **Kim, Young-Gi**; Abousamra, Wafaa; Yang, Dan; Melton, Omar; Jung, June-Ho; Besi, Sabina; Birschbach, Michael; Von, Ebron; Mercado, Ramil; Kinlen, Patrick; Nguyen, Hai-Long "Electroactive Polymers for Energy, Electronic and Photonic Applications" IUPAC-KPS40, Jeju, South Korea, 2016 (*Invited*).
  27. **Omar Melton**; **Kim, Young-Gi**; Abousamra, Wafaa; Yang, Dan; Melton, Omar; Jung, June-Ho; Besi, Sabina; Birschbach, Michael; Von, Ebron; Mercado, Ramil; Kinlen, Patrick; Nguyen, Hai-Long "Highly Conductive Polymers Paired with Nanostructured Carbon Frame for the Application of Energy Storage" IUPAC-KPS40, Jeju, South Korea, 2016.
  28. **Kim, Young-Gi**; Abousamra, Wafaa; Yang, Dan; Melton, Omar; Jung, June-Ho; Besi, Sabina; Birschbach, Michael; Von, Ebron; Mercado, Ramil; Kinlen, Patrick; Nguyen, Hai-Long "Polymer Supercapacitors: A Superb Energy Solution" ACS Meeting, Philadelphia, PA, 2016.
  29. **Yang, Dan**; Melton, Omar; Abousamra, Wafaa; Kim, Young-Gi; Jung, June-Ho; Besi, Sabina; Birschbach, Michael; Von, Ebron; Mercado, Ramil; Kinlen, Patrick; Nguyen, Hai-Long " Hybrid and Solution Processable Conducting Polymer and Carbon Materials Electrodes: Energy Solution" ACS Meeting, Philadelphia, PA, 2016.
  30. **Kim, Young-Gi** "The World Best Polymer Energy Storage Device" Seoul National University, South Korea, 2016 (*Invited*).

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31. **Kim, Young-Gi** "World Best Electroactive Polymers: Tactical Solution for Accomplishing Promising Energy Storage, Conversion and Emission on a Smart Window in Artificial Intelligent Building" LG Hausys, South Korea, 2016 (*Invited*).
32. **Kim, Young-Gi** "Promising Challenges in Electroactive Polymers: Energy Application" KNU, South Korea, 2016 (*Invited*).
33. **Kim, Young-Gi** "Innovation in Energy Storage Systems: World's Best Power Storage Vehicles, Supercapacitors" Yonsei University, South Korea, 2016 (*Invited*).
34. **Kim, Young-Gi** "Innovation in Energy Storage Systems: World's Best Power Storage Vehicles, Supercapacitors " DongJin Semichem, South Korea, 2016 (*Invited*).
35. **Kim, Young-Gi** "Advances in Polymer Energy Storage and Conversion: From Science to Engineering" Seoul National University, South Korea, 2016 (*Invited*).
36. **Kim, Young-Gi** "Promising Perspectives of Transparent Soft Matters for Energy and Electronics Applications" KAIST, South Korea, 2016 (*Invited*).
37. **Kim, Young-Gi** "Innovation in Electrical Super Conductive and Super Capacitive Polymers: World's Best Power Storage Vehicles, Supercapacitors" LG Chem, South Korea, 2016 (*Invited*).
38. **Kim, Young-Gi** "Advances in Electroactive Polymer Energy Storage Systems: World's Best Power Storage Supercapacitors" KRICT, South Korea, 2016 (*Invited*).
39. **Kim, Young-Gi** "Near Future Energy Conversion and Storage Materials: CNT and Electroactive Polymers" KIST, South Korea, 2016 (*Invited*).
40. **Kim, Young-Gi** "Innovation in Organic and Nano Engineering in Energy Storage Devices" Hanyang University, South Korea, 2016 (*Invited*).
41. **Kim, Young-Gi** "Innovation in Electrical Super Conductive and Super Capacitive Polymers: World's Best Energy Storage Devices" Dankook University, South Korea, 2016 (*Invited*).
42. **Abousamra, Wafaa**; Yang, Dan; Melton, Omar; Kim, Young-Gi "Conjugated Polymers for Energy Application" Delaware State University, DE 2016.
43. **Kim, Young-Gi, et al** " Superconductive Polymer Supercapacitors: Conformal, Portable and Tactical Energy Solution" MRS Meeting, Phoenix, AZ, 2016.
44. **Kim, Young-Gi** "World's Best Electroactive Polymers: Tactical Solutions for the Needs in Energy, Bio and Optoelectronics Areas" Sukant Tripathy Annual Memorial Symposium, Lowell, MA, 2015. (*Invited*)
45. **Kim, Young-Gi, et al** "World's Best Electroactive Polymers: Tactical Solutions for the Needs in Energy, Bio and Optoelectronics Areas " Yonsei University, South Korea, 2015. (*Invited*)
46. **Kim, Young-Gi, et al** "High Performance Supercapacitors Utilizing Electroactive Polymers and CNT: From the Concept of Science to The Prototypes of Engineering" ACS Meeting, Boston, MA, 2015.

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47. **Kim, Young-Gi** "World's Best Energy Storage Materials and the Devices: From Scientific Findings to Engineering Application" SAIT Forum, Sam Sung Electronics, South Korea, 2015. *(Invited)*
48. **Kim, Young-Gi** "Roadmap to the World's Best Polymer Supercapacitors" POSTECH, South Korea, 2015*(Invited)*.
49. **Kim, Young-Gi** "Foreseeable Perspectives: World's Best Energy Storage Materials and the Devices" UNIST, South Korea, 2015*(Invited)*.
50. **Kim, Young-Gi** "Advanced Organic Energy Storage and Conversion Materials" Han Yang University, South Korea, 2015*(Invited)*.
51. **Kim, Young-Gi** "High Performance Energy and Organic Electronic Solutions" Delaware State University, DE, 2015 *(Invited)*.
52. **Kim, Young-Gi** "Innovation in Polymers and Advanced Materials" PPG Aerospace, Burbank, CA, 2014 *(Invited)*.
53. **Kim, Young-Gi** "Advanced Organic Chemistry: Energy Storage and Conversion Materials" Delaware State University, DE, 2014 *(Invited)*.
54. **Kim, Young-Gi** "Issue or Innovation for the Adhesive for Advanced Package" Henkel Electronic Materials, Irvine, CA, 2014 *(Invited)*.
55. **Kim, Young-Gi** "Application of Advanced Materials for Innovative Energy Matters" Sabic Innovative Plastics, Exton, PA, 2013 *(Invited)*.
56. **Kim, Young-Gi** "Innovative Electrical Energy Materials and Devices thru Smart Revolution" Sabic Innovative Plastics, Mt. Vernon, IN, 2013 *(Invited)*.
57. **Kim, Young-Gi** "Advances in Nano-inspired Energy Conversion and Storage Systems" Brewer Science, Rolla, MO, 2013 *(Invited)*.
58. **Kim, Young-Gi** "Advances in High Power and Energy Density Supercapacitors Utilizing Metal-Like Conductive Polymer Electrode" Power Electronic Symp., Cleantech, Santa Clara, CA, 2012/Nanotech 2012 *(Invited)*.
59. **Mercado, Ramil**; Von, Ebron; Birschbach, Michael; **Kim, Young-Gi**; Jung, June-Ho; Besic, Sabina. "High Power and High Energy Density Supercapacitor Fabricated with Inherently Conductive Polymer for Improved Performance." 21<sup>st</sup> International Seminar on Double Layer Capacitors & Hybrid Energy Devices, Fort Lauderdale, FL, Dec. 2011.
60. **Kim, Young-Gi**; Kinlen, Patrick; Jung, June-Ho; Mbugua, Joseph; Besi, Sabina; Birschbach, Michael; Tregre, Greg. "Advanced p- and n-Dopable Polymers Supercapacitors." Energy Storage Spotlight Section, Tech Connect World Conference 2011, Boston MA, June 2011.

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61. Kinlen, Patrick; **Kim, Young-Gi**; Besic, Sabina; Jung, June-Ho; Birschbach, Michael. Solid State Bi-Polar Supercapacitors Utilizing Electroactive Polymers.” Montreal, QC, Canada, May, 2011
62. Kinlen, Patrick; **Kim, Young-Gi**; Mbugua, Joseph; Jung, June-Ho; Birschbach, Michael. “Solid State Bi-polar Supercapacitor Utilizing Electroactive Polymers.” 20<sup>th</sup> International Seminar on Double Layer Capacitors & Hybrid Energy Devices, Fort Lauderdale, FL, Dec. 2010.
63. Nasrollahi, Zahra; Martin, Catalin; Tanner, David; **Kim, Young-Gi**; Kinlen, Patrick. “Electrical Conductivity of Polyaniline Thin Films,” Am. Phys. Soc. Portland, Oregon, March 2010.
64. Kinlen, Patrick; **Kim, Young-Gi**; Jung, June-Ho; Mbugua, Joseph; Viswanathan, Sriram. “Supercapacitors Using n and p-Type Conductive Polymers Exhibiting Metallic Conductivity” 216<sup>th</sup> ECS Meeting, Vienna, Austria, Oct. 2009.
65. Kinlen, Patrick; Viswanathan, Sriram.; Jung, June-Ho; **Kim, Young-Gi**; Mbugua, J.; Simpson, J.; Shih, W.-S.; Stroder, M.; Edwards, K.; Nguyen, H.-L. “High Power and Energy Density Supercapacitors Based on Conductive Polymers.” Lockheed Martin Special Symposium in a topic of energy storage, Nanotech 2009, Houston, TX, May 2009.
66. Nasrollahi, Zahra; Mei, Jianguo; Ogawa, Katsu; **Kim, Young-Gi**; Heston, Nathan; Arenas, Daniel; Carley, Tracy Mc; Tanner, David; Reynolds, John ; Schanze, Kirk “Thin Film Optical Measurements on a Low-bandgap Platinum-Acetylide Conjugated Polymer Developed for Use in Organic Solar Cells,” Am. Phys. Soc. Pittsburgh, March 2009.
67. **Kim, Young-Gi**; Viswanathan, Sriram; Mbugua, Joseph; Jung, June-Ho; Kinlen, Patrick. “Superconductive Conjugated Polymer Films: Organic Supercapacitors.” 18<sup>th</sup> International Seminar on Double Layer Capacitors & Hybrid Energy Devices, Fort Lauderdale, FL, Dec. 2008.
68. Kinlen, Patrick; Mbugua, Joseph; **Kim, Young-Gi**; Jung, June-Ho; Viswanathan, Sriram.; Liu, Jingyue. “Highly Conductive Nanostructured Polyaniline Films for Supercapacitor Applications.” Am. Chem. Soc., Philadelphia, Aug. 2008. (*Invited*).
69. Mbugua, Joseph; Kinlen, Patrick; **Kim, Young-Gi**; Jung, June-Ho; Viswanathan, Sriram.; Liu, Jingyue. “High Energy and Power Density Supercapacitors using Highly Conductive Polyaniline Films.” Am. Chem. Soc., Philadelphia, Aug. 2008.
70. **Kim, Young-Gi**. “**Tutorial Lecture: Introduction to Advanced Conjugated Polymers.**” International Symposium on Convergence Technology, Jeju, South Korea, Feb. 2008. (*Invited*).
71. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” International Symposium on Convergence Technology, Jeju, South Korea, Feb. 2008. (*Invited*).
72. **Kim, Young-Gi**. “Innovative Nano-Energy Technology: Conjugated Polymers for the Advanced Optoelectronic Devices.” Han Yang University, Seoul, South Korea, Feb. 2008. (*Invited*).

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73. Reynolds, John R.; Schanze, Kirk S.; Jiang, Hui; **Kim, Young-Gi**; Mei, Jianguo; Ogawa, Katsu; Qiao, Qiquan; Taranekar, Prasad “Variable Gap Conjugated, Organometallic and Hyperbranched Polymers in Hybrid Photovoltaic Devices.” Materials Research Society, Boston, 2007.(*invited*)
74. Mei, Jianguo; Ogawa, Katsu; **Kim, Young-Gi**; Schanze, Kirk S.; Reynolds, John R. “Pt-acetylide Organometallic Polymers as Active Materials for Organic Solar Cells” Materials Research Society, Boston, 2007.
75. **Kim, Young-Gi**. “Nano-inspired Optoelectronics: Utilization of Electroactive Materials.” Gentex, MI, Aug. 2007. (*invited*)
76. **Kim, Young-Gi**. “Nano-inspired Optoelectronics: Utilization of Conjugated Polymers.” Crosslink, MO, Aug. 2007. (*invited*)
77. Reynolds, John R.; Dyer, Aubrey L.; Ertas, Merve; Galand, Emilie; **Kim, Young-Gi**; Steckler, Tim T.; Thompson, Barry C.; Turkcu, Harun “Push and Pull of Electrons in Polyheterocycles.” Am. Chem. Soc. Chicago, 2007.
78. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” Chonnam National University Seoul, South Korea, Nov. 2006. (*invited*)
79. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” Myongji University Seoul, South Korea, Nov. 2006. (*invited*)
80. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” KAIST Taejon, South Korea, July 2006. (*invited*)
81. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” Yonsei University Seoul, South Korea, July 2006. (*invited*)
82. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” GIST Kwangju, South Korea, July 2006. (*invited*)
83. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” Hanyang University, Seoul, South Korea, July 2006. (*invited*)
84. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” KIST Seoul, South Korea, July 2006. (*invited*)
85. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” KRICT Taejon, South Korea, July 2006. (*invited*)
86. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” Dankook University Seoul, South Korea, July 2006. (*invited*)
87. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” Myongji University Seoul, South Korea, July 2006. (*invited*)

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88. **Kim, Young-Gi**. “Nano-Energy Inspired Optoelectronics: Organic Solar Cells and Polymer Sensitized Solar Cells.” Cheil Industries, Inc., Uiwang, South Korea, July 2006. (invited)
89. Galand, Emilie; Thompson, Barry C.; Jones, Genay; **Kim, Young-Gi**; Reynolds, John R. “Narrow Band Gap Donor-Acceptor Copolymers for Optoelectronic Devices.” Am. Chem. Soc. Atlanta, 2006.
90. **Kim, Young-Gi**; Christian, Hermona Y.; Galand, Emilie; Niazimbetova, Zukhra I.; Ananthkrishnan, Nisha; Thompson, Barry C.; Walker, John; Galvin, Mary E.; Reynolds, John R. “2-D and Linear Oligophotosensitizers for Bulk Heterojunction Organic Photovoltaic Devices.” Materials Research Society, Boston, 2005.
91. Reynolds, John R.; **Kim, Young-Gi**; Galand, Emilie; Steckler, Timothy; Thompson, Barry C. “Variable Band Gap Conjugated Polymers for Photovoltaics.” Materials Research Society, Boston, 2005. (invited)
92. **Kim, Young-Gi**; Thompson, Barry C.; Galand, Emilie; Reynolds, John R. “Photovoltaic Devices Incorporating Multiple Electron Donor Polymers for Efficient Solar Light Harvesting.” Materials Research Society, Boston, 2004.
93. Reynolds, John R.; Thompson, Barry C.; **Kim, Young-Gi**; Galand, Emilie; Ananthkrishnan, Nisha. “Variable Gap Conjugated Polymers for Photovoltaic Devices.” Materials Research Society, Boston, 2004. (invited)
94. Wang, Xianyan; Drew, Christopher; **Kim, Young-Gi**; Ku, Bon-Cheol; Kumar, Jayant; Samuelson, Lynne. “Electrospun Nanofiber-Based Fluorescent Sensors Using Electrostatically Layered Polythiophenes.” Materials Research Society, Boston, 2004.
95. Thompson, Barry C.; **Kim, Young-Gi**; Ananthkrishnan, Nisha; Galand, Emilie; Reynolds, John R. “Variable Band Gap Conjugated Polymers for Photovoltaics.” Sixth International Symposium on Functional  $\pi$ -Electron Systems (F $\pi$ 6). Ithaca, 2004.
96. **Kim, Young-Gi**; Thompson, Barry C.; Iyengar, Nisha A.; Padmanaban, G.; Ramakrishnan, S.; Reynolds, John R. “Polymer Blend Based Photovoltaic Devices.” Am. Chem. Soc. Anaheim, 2004.
97. Thompson, Barry C.; Dubois, C. J. Jr.; **Kim, Young-Gi**; Reynolds, John R. “Donor-Acceptor Based Polymers for Photovoltaics.” Am. Chem. Soc. Anaheim, 2004.
98. Wang, Xianyan; **Kim, Young-Gi**; Drew, Christopher; Ku, Bon-Cheol; Kumar, Jayant; Samuelson, Lynne. “Nanostructured Sensing Surfaces via Combination of Electrospinning with Electrostatic Layer-by-Layer Assembly.” Electrochemical Soc. France, 2003.
99. Wang, Xianyan; **Kim, Young-Gi**; Drew, Christopher; Ku, Bon-Cheol; Kumar, Jayant; Samuelson, Lynne. “Biochemical Sensor via Combination of Electrospinning with Electrostatic Layer-by-Layer Assembly.” Am. Chem. Soc. New Orleans, 2003.
100. **Kim, Young-Gi**; Samuelson Lynne; Kumar, Jayant. “Syntheses and Optoelectronic Properties of Novel Dyes and Conjugated Polymers for the Application of Solar Cells” in Bell Lab., Lucent Technology, NJ, Jan. 2003.(Invited)

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101. **Kim, Young-Gi**; Snook, Julie H.; Mosurkal, Ravi; Liu, Xin; Walker, John; Whitten, James E.; Samuelson, Lynne A.; Kumar, Jayant. "Bifunctional Ruthenium Complex for Nanocrystalline TiO<sub>2</sub> Photovoltaic Cells." The 3<sup>rd</sup> Sukant K. Tripathy Memorial Symposium. Lowell. Dec. 2002.
102. **Kim, Young-Gi**; Walker, John; Samuelson, Lynne A.; Kumar, Jayant. "Efficient Photo Induced Sensitization of Conjugated Polymers for Nanocrystalline TiO<sub>2</sub> Photovoltaic Cells." The 3<sup>rd</sup> Sukant K. Tripathy Memorial Symposium. Lowell. Dec. 2002.
103. **Kim, Young-Gi**; Ahn, Heejoon; Kang, Bongwoo; Sung, Changmo; Whitten, James E.; Samuelson, Lynne A.; Kumar, Jayant. "Synthesis of Nanocrystalline TiO<sub>2</sub> Particles and Nanofabrication via Molecular Assembly of a Conjugated Polymer and Nanoparticles." The 3<sup>rd</sup> Sukant K. Tripathy Memorial Symposium. Lowell. Dec. 2002.
104. Wang, Xianyan; **Kim, Young-Gi**; Drew, Christopher; Ku, Bon-Cheol; Kumar, Jayant; Samuelson, Lynne. "Highly Efficient Sensors Based on Self-Assembled Conjugated Polymer Layers on Electrospun Nanofibrous Membranes." The 3<sup>rd</sup> Sukant K. Tripathy Memorial Symposium. Lowell, 2002.
105. Wang, Xianyan; **Kim, Young-Gi**; Drew, Christopher; Ku, Bon-Cheol; Kumar, Jayant; Samuelson, Lynne. "Highly Efficient Sensors Based on Self-assembled Conjugated Polymer Layers on Electrospun Nanofibrous Membranes." Materials Research Society, Boston, 2002.
106. **Kim, Young-Gi**; "Synthesis and Optoelectric Properties of Conjugated Polymers and Novel Dyes." in Maxdem Inc., San Dimas, Oct. 2002 (*Invited*).
107. Mosurkal, Ravi; **Kim, Young-Gi**; Kumar, Jayant; Walker, John; Samuelson, Lynne. "Mono and Dinuclear Ruthenium Complexes for Dye-Sensitized Photovoltaics." Electrochemical Soc. Salt Lake City, 2002.
108. Wang, Xianyan; **Kim, Young-Gi**; Drew, Christopher; Ku, Bon-Cheol; Kumar, Jayant; Samuelson, Lynne. "Combination of Electrospinning and Electrostatic Layer-by-Layer Self Assembly: A New Strategy for Sensor Fabrication." Fiber Society. Boston, 2002.
109. **Kim, Young-Gi**; Walker, John; Samuelson, Lynne; Kumar, Jayant. "Efficient Light Harvesting Polythiophenes for Nanocrystalline TiO<sub>2</sub> Photovoltaic Cells." Am. Chem. Soc. Boston, 2002.
110. **Kim, Young-Gi**; Samuelson, Lynne; Kumar, Jayant. "Carboxylated Polythiophenes for Biosensor Applications." Am. Chem. Soc. Boston, 2002.
111. **Kim, Young-Gi**; Mosurkal, Ravi; Walker, John; Li, Lian; Samuelson, Lynne; Kumar, Jayant. "Synthesis and Characterization of Functional Ruthenium Dyes for Nanocrystalline TiO<sub>2</sub> Photovoltaic Cells." Am. Chem. Soc. Boston, 2002.
112. **Kim, Young-Gi**; Samuelson, Lynne; Kumar, Jayant. "Carboxylated Polythiophenes: Efficient Light Harvesting Polymers for Nanocrystalline TiO<sub>2</sub> Photovoltaic Cells." Student Research Symposium, Lowell. 2002.
113. **Kim, Young-Gi**; Samuelson, Lynne; Kumar, Jayant. "Carboxylated Polythiophenes: Polymer Biosensors in Liquid and Solid States." The 2<sup>nd</sup> Sukant K. Tripathy Memorial Symposium. Lowell, 2001.



114. Kim, Jaehyun; **Kim, Young-Gi**; Chittibabu, Kethinni G.; Cazeca, Mario J.; Kim, Dong-Yu; Kumar, Jayant; Tripathy, Sukant K. "Syntheses and luminescence properties of new fluorescent dye molecules and polymers." Am. Chem. Soc., New Orleans, 1999.
115. Kim, Jaehyun; **Kim, Young-Gi**; Chittibabu, Kethinni G.; Cazeca, Mario J.; Kim, Dong-Yu; Kumar, Jayant; Tripathy, Sukant K. "Preparation and properties of luminescent metal-complex containing conjugated and non-conjugated polymers." Am. Chem. Soc., New Orleans, 1999.
116. Kim, Jaehyun; **Kim, Young-Gi**; Kumar, Jayant; Tripathy, Sukant K. "Fabrication and Properties of Polymer Light Emitting Diodes Based on New Lanthanide Complex Containing Polymers." Materials Research Society, Boston, 1998.
117. Kim, Jaehyun; **Kim, Young-Gi**; Kim, Dong-Yu; Kumar, Kumar, Jayant; Tripathy, Sukant K. "Preparation and Luminescence Characteristics of a Novel Ligand for Lanthanide Metal Complexes." Materials Research Society, Boston, 1998.
118. Kim, Jin-Sung; **Kim, Young-Gi**; Im, Seung-Soon; Song, Ja-Ryang; Im, Dae-Young; Im Sang-Hyun; Han, Jung-Seok. "Study on the Structure and Physical Property of a Starch based Loose-Fill." Textile Society. 1994.
119. **Kim, Young-Gi**; Im, Seung-Soon; Song, Ja-Ryang; Im, Dae-Young; Kim, Hyun-Jik. "Environmentally Degradable LDPE / Starch Composite ." Korea Textile Society. 1991.
120. **Kim, Young-Gi**; Im, Seung-Soon; Song, Ja-Ryang; Im, Dae-Young. "Preparation and Properties of Environmentally Degradable Starch Based Films." Korea Polymer Society. 1990.
121. **Kim, Young-Gi**; Im, Seung-Soon; Song, Ja-Ryang. "Preparation and Properties of the Starch - Based LDPE Film." Korea Textile Society. 1989.