

Young-Gi Kim

Young-Gi Kim

Contact Information: Department of Chemistry Phone: 302-857-6535
 Delaware State University E-mail: ygkim@desu.edu
 1200 N. DuPont Highway Mobile Phone: 417-576-3006
 Dover, DE 19901 E-mail: Younggikim00@gmail.com

PROFESSIONAL SUMMARY: Advances in Polymer and Organic Solar Cells, Supercapacitors and Sensors
 25 Years Design, Synthesis, Characterization and Application of Polymers and Organic Materials
 15 Years Innovative Polymer Prototypes in Solar Cells and Supercapacitors
 15 Years US Government Funded Energy Programs as Core Scientist
 10 Years Industry Innovation including Scale up and Commercialization
 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://cmnst.desu.edu/about/faculty-profiles/young-gi-kim>)
 Advanced materials, energy, organic electronics, bio and nanotech, prototype and engineering protocols
 2017 Consultant, a Private Sector (3B\$)
 2016 Invited Professor, CASE, POSTECH
 2015 – Present Advisory Board Member, Moleculum (d/b/a, Wamco Inc.)
 NIR absorbing materials (http://moleculum.com/#about_us)
 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.
 Synthesis of inherent electrical and electrochemical conducting polymers
 Electrochemical characterization

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Polymer supercapacitors and the prototypes (energy)
<http://www.techconnectworld.com/World2012/bio.html?id=130>

2003 – 2007

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)
 Phosphorescent metal-polymer solar cells (energy)

1998 – 2003

Scientist/Research/Teaching Assistant, Center for Advanced Materials, University of Massachusetts Lowell

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

1991 – 1996

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 (Co-Director of HEROES Research Center of U.S. Army Natick Soldier Research, Development, and Engineering Center)

Thesis: "Studies on Electro-Optical Properties of Conjugated Polymers and Novel Metal Complexes in Nanocrystalline TiO₂ 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

8 Graduate and Undergraduate Students

Young-Gi Kim

TEACHING ACTIVITIES @ DSU

2017	Polymer Chemistry Lecture
2017	Organic Chemistry I and II Lecture
2017	Organic Chemistry I and II Lab
2016	Organic Chemistry I and II Lab
2016	Organic Chemistry II Lecture
2015	Organic Chemistry I and II Lecture
2015	Organic Chemistry I and II Lab
2015	General Chemistry I Lecture

COMMUNITY SERVICE @ DSU

2015 – Present	Curriculum Committee Chair at Chemistry, Delaware State University
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PROFESSIONAL AFFILIATIONS AND ACTIVITIES

2017	American Chemical Society (ACS), 15-year service
2017	Materials Research Society (MRS)
2017	Consultant, a Private Sector (3 B\$)
2016	NSF Proposal Reviewer
2016	Advisory Board, Moleculum
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 (1500+ cited; IF: 85+)
100+	Invitational and Tech Presentations

PUBLICATIONS

1. **Kim, Young-Gi et al.** "Advanced Polymer Supercapacitor: Materials and Devices." Dekker Encyclopedia of Nanoscience and Nanotechnology, 4th Ed. CRC Press (2017) (*In preparation/Invited to be submitted*).
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, 3rd 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.

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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." 20th 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.; Ananthakrishnan, 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.
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 Fullerypyrrolidine 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

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- 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.; Turkcu, 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.
 23. Snook, Julie H.; Samuelson, Lynne; Kumar, Jayant; **Kim, Young-Gi**; Whitten, James E. "Ultraviolet photoelectron spectroscopy of nanocrystalline TiO₂ 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 TiO₂ 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 TiO₂ 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 TiO₂ 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 TiO₂ 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.
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 US Army Natick Lab

1. Kumar, Jayant; **Kim, Young-Gi**. "Enhancement in Photoinduced Sensitization of Conjugated Polymer in Nanocrystalline TiO₂ 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 TiO₂ Photovoltaic Cells" Tenth Technical Report for a Project (Reference DDAD16-99-C-1037), Dec. 2001.

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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**; Abousamra, Wafaa; Yang, Dan; Melton, Omar; Jung, June-Ho; Besi, Sabina; Birschbach, Michael; Von, Ebron; Mercado, Ramil; Kinlen, Patrick; Nguyen, Hai-Long "Unusual Enhancement in the Processability and Electrical Properties of Electroactive Polymers via the Formation of Unusual Building Blocks" ACS Meeting, Washington DC, 2017. (*to be Presented*)
2. **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.
3. **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.
4. **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.
5. 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.
6. **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*).
7. 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.
8. **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.
9. **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.
10. **Kim, Young-Gi** "The World Best Polymer Energy Storage Device" Seoul National University, South Korea, 2016 (*Invited*).

11. **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*).
12. **Kim, Young-Gi** "Promising Challenges in Electroactive Polymers: Energy Application" KNU, South Korea, 2016 (*Invited*).
13. **Kim, Young-Gi** "Innovation in Energy Storage Systems: World's Best Power Storage Vehicles, Supercapacitors" Yonsei University, South Korea, 2016 (*Invited*).
14. **Kim, Young-Gi** "Innovation in Energy Storage Systems: World's Best Power Storage Vehicles, Supercapacitors " DongJin Semichem, South Korea, 2016 (*Invited*).
15. **Kim, Young-Gi** "Advances in Polymer Energy Storage and Conversion: From Science to Engineering" Seoul National University, South Korea, 2016 (*Invited*).
16. **Kim, Young-Gi** "Promising Perspectives of Transparent Soft Matters for Energy and Electronics Applications" KAIST, South Korea, 2016 (*Invited*).
17. **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*).
18. **Kim, Young-Gi** "Advances in Electroactive Polymer Energy Storage Systems: World's Best Power Storage Supercapacitors" KRICT, South Korea, 2016 (*Invited*).
19. **Kim, Young-Gi** "Near Future Energy Conversion and Storage Materials: CNT and Electroactive Polymers" KIST, South Korea, 2016 (*Invited*).
20. **Kim, Young-Gi** "Innovation in Organic and Nano Engineering in Energy Storage Devices" Hanyang University, South Korea, 2016 (*Invited*).
21. **Kim, Young-Gi** "Innovation in Electrical Super Conductive and Super Capacitive Polymers: World's Best Energy Storage Devices" Dankook University, South Korea, 2016 (*Invited*).
22. **Abousamra, Wafaa**; Yang, Dan; Melton, Omar; Kim, Young-Gi "Conjugated Polymers for Energy Application" Delaware State University, DE 2016.
23. **Kim, Young-Gi, et al** " Superconductive Polymer Supercapacitors: Conformal, Portable and Tactical Energy Solution" MRS Meeting, Phoenix, AZ, 2016.
24. **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*)
25. **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*)

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26. **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.
27. **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*)
28. **Kim, Young-Gi** "Roadmap to the World's Best Polymer Supercapacitors" POSTECH, South Korea, 2015(*Invited*).
29. **Kim, Young-Gi** "Foreseeable Perspectives: World's Best Energy Storage Materials and the Devices" UNIST, South Korea, 2015(*Invited*).
30. **Kim, Young-Gi** "Advanced Organic Energy Storage and Conversion Materials" Han Yang University, South Korea, 2015(*Invited*).
31. **Kim, Young-Gi** "High Performance Energy and Organic Electronic Solutions" Delaware State University, DE, 2015 (*Invited*).
32. **Kim, Young-Gi** "Innovation in Polymers and Advanced Materials" PPG Aerospace, Burbank, CA, 2014 (*Invited*).
33. **Kim, Young-Gi** "Advanced Organic Chemistry: Energy Storage and Conversion Materials" Delaware State University, DE, 2014 (*Invited*).
34. **Kim, Young-Gi** "Issue or Innovation for the Adhesive for Advanced Package" Henkel Electronic Materials, Irvine, CA, 2014 (*Invited*).
35. **Kim, Young-Gi** "Application of Advanced Materials for Innovative Energy Matters" Sabic Innovative Plastics, Exton, PA, 2013 (*Invited*).
36. **Kim, Young-Gi** "Innovative Electrical Energy Materials and Devices thru Smart Revolution" Sabic Innovative Plastics, Mt. Vernon, IN, 2013 (*Invited*).
37. **Kim, Young-Gi** "Advances in Nano-inspired Energy Conversion and Storage Systems" Brewer Science, Rolla, MO, 2013 (*Invited*).
38. **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*).
39. **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." 21st International Seminar on Double Layer Capacitors & Hybrid Energy Devices, Fort Lauderdale, FL, Dec. 2011.
40. **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.

41. 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
42. Kinlen, Patrick; **Kim, Young-Gi**; Mbugua, Joseph; Jung, June-Ho; Birschbach, Michael. “Solid State Bi-polar Supercapacitor Utilizing Electroactive Polymers.” 20th International Seminar on Double Layer Capacitors & Hybrid Energy Devices, Fort Lauderdale, FL, Dec. 2010.
43. Nasrollahi, Zahra; Martin, Catalin; Tanner, David; **Kim, Young-Gi**; Kinlen, Patrick. “Electrical Conductivity of Polyaniline Thin Films,” Am. Phys. Soc. Portland, Oregon, March 2010.
44. Kinlen, Patrick; **Kim, Young-Gi**; Jung, June-Ho; Mbugua, Joseph; Viswanathan, Sriram. “Supercapacitors Using n and p-Type Conductive Polymers Exhibiting Metallic Conductivity” 216th ECS Meeting, Vienna, Austria, Oct. 2009.
45. 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.
46. 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.
47. **Kim, Young-Gi**; Viswanathan, Sriram; Mbugua, Joseph; Jung, June-Ho; Kinlen, Patrick. “Superconductive Conjugated Polymer Films: Organic Supercapacitors.” 18th International Seminar on Double Layer Capacitors & Hybrid Energy Devices, Fort Lauderdale, FL, Dec. 2008.
48. 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*).
49. 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.
50. **Kim, Young-Gi**. “Tutorial Lecture: Introduction to Advanced Conjugated Polymers.” International Symposium on Convergence Technology, Jeju, South Korea, Feb. 2008. (*Invited*).
51. **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*).
52. **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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