<동문소식>

자랑스러운 동문 소식입니다.

◎ 성명: **강 범 구 (2012 박사 졸업)**

◎ 전공분야: 기능성 고분자 정밀중합 및 응용 (지도교수: 이재석 교수)

◎ 최근임용: **숭실대학교 화학공학과 조교수 임용 (2019. 9월)**

◎ 직전소속: LG화학 기술연구원 중앙연구소, 책임연구원 (2016~2019)

Beom-Goo Kang, Ph.D.

Education

Ph.D. Gwangju Institute of Science and Technology (GIST), Korea
2007. 09 – 2012. 08 Department of Materials Science and Engineering
Thesis Title: Precise Synthesis of Block Copolymers Containing Triphenylamine Moiety by Living Anionic Polymerization (Advisor: Prof. Jae-Suk Lee)

M.S. Gwangju Institute of Science and Technology (GIST), Korea
2006. 03 – 2007. 08 Department of Materials Science and Engineering
(Advisor: Prof. Jae-Suk Lee)

B.S. Sungkyunkwan University, Korea
1999. 03 – 2005. 08 Department of Polymer Science and Engineering

Experiences

Researcher LG Chem Research Park, Daejeon, Korea
2016. 12 – Present Future Technology Research Center
Research Topic: Synthesis of Green and Red Phosphorescent Host Vinyl Polymer via (Controlled) Radical Polymerization

Postdoctoral Research Associate Princeton University, USA
2015. 10 – 2016. 10 Department of Chemical and Biological Engineering
Research Topic: Well-Defined Copolymers via Living Vinyl Addition Polymerization for Biobutanol Pervaporation Membranes (Advisor: Prof. Richard A. Register)

Postdoctoral Research Associate University of Tennessee, USA
2012. 11 – 2015. 09 Department of Chemistry
Research Topic: Well-Defined Copolymers with Various Chain Structures via Living Anionic Polymerization for Various Applications (Advisor: Prof. Jimmy W. Mays)

Teaching Assistant Gwangju Institute of Science and Technology (GIST), Korea
2010. 09 – 2011. 06 *Course: Physical Properties of Polymers*

Visiting Researcher Tokyo Institute of Technology, Japan
2007. 09 – 2008. 03 Department of Organic and Polymeric Materials
Research Topic: Living Anionic Polymerization of Styrene Monomers Containing Adamantyl Groups: Effect of Adamantyl Group on Thermal Properties (Advisor: Prof. Takashi Ishizone and Prof. Akira Hirao)

Military Service Republic of Korea Air Force
2000. 08 – 2003. 02 *Assignment: Firefighter*

Specializations

- Organic Synthesis
- Polymer Synthesis (Anionic Polymerization and Vinyl Addition Polymerization)
- High Vacuum Technique and Glass Blowing
- Polymer Characterizations
- Organic Electronics (OLEDs and Memory)
- Thermoplastic Elastomers
- Biobutanol Pervaporation Membranes

Research Interests

- **Synthesis of Versatile Functional Polymers with Precise Chain Structures**

- Linear Block, Star, and Graft Copolymers
- Postpolymerization Modification of Block Copolymers

• Applications of Well-Defined Functional Polymers

- Polymer-Based Electronics (OLEDs and Memory)
- High-Performance Thermoplastic Elastomers
- Thermoreversible Block Copolymers (Self-Healing)
- Block Copolymer Nanolithography
- Biofuel Pervaporation Membranes

Publications

1 Nam-Goo Kang, **Beom-Goo Kang,** Haeng-Deog Koh, Mohammad Changez, Jae-Suk Lee,* "Block Copolymers Containing Pyridine Moieties: Precise Synthesis and Applications" *React. Funct. Polym.* **2009**, *69*, 470-479.

2 Santosh Kumar, Priyank N. Shah, **Beom-Goo Kang,** Joon-Keun Min, Woon Sung Hwang, Ik Kyung Sung, Shailesh R. Shah, Chivukula N. Murthy, Seonyoung Ahn, Taihyun Chang and Jae-Suk Lee,* "Facile One–Pot Synthesis of Linear and Radial Block Copolymers of Styrene and Isoprene through a Novel Coupling Agent by Living Anionic Polymerization" *J. Polym. Sci. Part A: Polym. Chem.* **2010**, *48*, 2636-2641.

3 **Beom-Goo Kang,** Nam-Goo Kang, Jae-Suk Lee,* "Living Anionic Polymerization of Styrene Derivatives Containing Triphenylamine Moieties through Introduction of Protecting Group" *Macromolecules* **2010**, *43*, 8400-8408.

4 **Beom-Goo Kang,** Nam-Goo Kang, Jae-Suk Lee,* "Effect of Isomeric Pyridine Moieties in Ethynylstyrene Derivatives on Their Anionic Polymerization" *J. Polym. Sci. Part A: Polym. Chem.* **2011**, *49*, 5199-5209.

5 Nam-Goo Kang, Byungjin Cho, **Beom-Goo Kang,** Sunghoon Song, Takhee Lee,* Jae-Suk Lee,* "Structural and Electrical Characterization of a Block Copolymer-Based Unipolar Nonvolatile Memory Device" *Adv. Mater.* **2012**, *24*, 385-390. *(Inside Front Cover)*

6 Suk Gyu Hahm, Nam-Goo Kang, Wonsang Kwon, Kyungtae Kim, Yong-Gi Ko, Seonyoung Ahn, **Beom-Goo Kang,** Taihyun Chang, Jae-Suk Lee,* Moonhor Ree,* "Programmable Biopolar and Unipolar Nonvolatile Memory Devices Based on Poly(2-(*N*-carbazolyl)ethyl methacrylate) End-Capped with Fullerene" *Adv. Mater.* **2012**, *24*, 1062-1066.

7 Nam-Goo Kang, **Beom-Goo Kang,** Yong-Guen Yu, Mohammad Changez, Jae-Suk Lee,* "Well-Defined Ambipolar Block Copolymers Containing Monophosphorescent Dye" *ACS Macro Lett.* **2012**, *1*, 840-844.

8 **Beom-Goo Kang,** Hongkyu Kang, Nam-Goo Kang, Chang-Lyoul Lee,* Kwanghee Lee, Jae-Suk Lee,* "Thermally Cross-Linkable Hole Transporting Polymer Synthesized by Living Anionic Polymerization for Effective Electron Blocking and Reduction of Exciton Quenching in Multilayer Polymer Light Emitting Diodes" *Polym. Chem.* **2013**, *4*, 969-977.

9 Yoon-Hyung Hur, Nam-Goo Kang, **Beom-Goo Kang,** Yong-Guen Yu, Mohammed Changez, Jae-Suk Lee,* "Novel Amphiphilic Homopolymers Containing meta- and para-Pyridine Moieties with Living Characteristics and Their Self-Assembly" *J. Polym. Sci. Part A: Polym. Chem.* **2013**, *51*, 3458-3469.

10 **Beom-Goo Kang,** Yong-Guen Yu, Nam-Goo Kang, Jae-Suk Lee,* "Synthetic Pathway to Functional Block Copolymers with Pendent Triphenylamine and Ethynylpyridine: Effect of Countercation on Anionic Polymerization Behavior" *J. Polym. Sci. Part A: Polym. Chem.* **2013**, *51*, 4233-4239.

11 Nam-Goo Kang, Yoon-Hyung Hur, Mohammad Changez, **Beom-Goo Kang,** Yong-Guen Yu, Jae-Suk Lee,* "Effect of Substituted Groups on the Living Anionic Polymerization of 2-Vinylcarbazole Derivatives" *Polymer* **2013**, *54*, 5615-5625.

12 **Beom-Goo Kang,** Sunghoon Song, Byungjin Cho, Nam-Goo Kang, Myung-Jin Kim, Takhee Lee, Jae-Suk Lee,* "Facile Anionic Synthesis of Well-Defined Block Copolymers with Pendent Triphenylamine and Ethynylpyridine for Non-Volatile Memory Device Applications with High Performances" *J. Polym. Sci. Part A: Polym. Chem*. **2014**, *52*, 2625-2632.

13 **Beom-Goo Kang,** Jingon Jang, Younggul Song, Myung-Jin Kim, Takhee Lee,* Jae-Suk Lee,* "Well-Defined Block Copolymers with Triphenylamine and Isocyanate Moieties Synthesized via Living Anionic Polymerization for Polymer-Based Resistive Memory Applications: Effect of Morphological Structures on Nonvolatile Memory Performances" *Macromolecules* **2014**, *47*, 8625-8633.

14 **Beom-Goo Kang,** Jingon Jang, Younggul Song, Myung-Jin Kim, Takhee Lee, Jae-Suk Lee,* "Facile Anionic Synthesis of Well-Controlled Thermally Cross-Linkable Block Copolymer for Polymer-Based Resistive Memory Device Applications" *Polym. Chem.* **2015**, *6*, 4264-4270.

15 **Beom-Goo Kang,** Nabendu B. Pramanik, Nikhil K. Singha, Jae-Suk Lee,* Jimmy Mays,* "Precise Synthesis of Thermoreversible Block Copolymers Containing Reactive Furfuryl Groups via Living Anionic Polymerization: Countercation Effect on Block Copolymerization Behavior" *Polym. Chem.* **2015**, *6*, 6732-6738.

16 **Beom-Goo Kang,** Hideo Shoji, Hiroshi Kataoka, Reo Kurashima, Jae-Suk Lee, Takashi Ishizone,* "Living Anionic Polymerization of *N*-(1-Adamantyl)-*N*-4-vinylbenzylideneamine and *N*-(2-Adamantyl)-*N*-4-vinylbenzylideneamine: Effects of Adamantyl Groups on Polymerization Behaviors and Thermal Properties" *Macromolecules* **2015**, *48*, 8489-8496.

17 Priyanka S. Desai,[‡] **Beom-Goo Kang,[‡] ([‡]equal contribution)** Maria Katzarova,[‡] Ryan Hall, Qifan Huang, Sanghoon Lee, Maksim Shivokhin, Taihyun Chang, David C. Venerus, Jimmy Mays, Jay D. Schieber, Ronald G. Larson,* "Challenging Tube and Slip-Link Models: Predicting the Linear Rheology of Blends of Well-Characterized Star and Linear 1,4-Polybutadienes" *Macromolecules* **2016**, *49*, 4964-4977.

18 Myung-Jin Kim, Yong-Guen Yu, Nam-Goo Kang, **Beom-Goo Kang,** Jae-Suk Lee,* "Precise Synthesis of Functional Block Copolymers by Living Anionic Polymerization of Vinyl Monomers Bearing Nitrogen Atoms in the Side Chain" *Macromol. Chem. Phys* **2017**, *218*, 1600445.

19 Yoon Hyung Hur, Seung Won Song, Jimmy Mays, YongJoo Kim,* **Beom-Goo Kang,*** Yeon Sik Jung,* "Synthesis of poly(styrene-*b*-4-*tert*-butyldimethylsiloxy)styrene) block copolymers and characterization of their self-assembled patterns" *Mol. Syst. Des. Eng.* **2017**, *2*, 589-596.

20 Hyeyoung Kim,[‡] **Beom-Goo Kang,[‡] ([‡]equal contribution)** Jaewon Choi, Zhiwei Sun, Duk Man Yu, Jimmy Mays, Thomas P. Russell,* "Morphological Behavior of A_2B Block Copolymers in Thin Films" *Macromolecules* **2018**, *51*, 1181-1188.

21 **Beom-Goo Kang,** Dong-Gyun Kim, Richard Register,* "Vinyl Addition Copolymers of Norbornylnorbornene and Hydroxyhexafluoroisopropylnorbornene for Efficient Recovery of n-Butanol from Dilute Aqueous Solution via Pervaporation" *Macromolecules* **2018**, *accepted*.

Patents

1 J.-S. Lee, N.-G. Kang, H.-J. Jeon, J.-W. Kwon, **B.-G. Kang**, H.-S. Yoo, "Iridium Complex Having Ligands and Polymer Using the Iridium Complex" *Kr patent*, Registration No. 10-0947699.

2 I.-K. Sung, W.-S. Hwang, H.-S. Kim, J.-S. Lee, **B.-G. Kang**, J.-K. Min, P. N. Shah, S. Kumar, "Product Mixed Copolymer, Triblock Polymer and Star Polymer from Aromatic Vinyl Monomer and Conjugated Diene Monomer and Synthesis of the Same" *Kr patent*, Registration No. 10-0995681.

3 J.-S. Lee, **B.-G. Kang**, C.-L. Lee, K. Lee, H. Kang, "Hole Transport High Molecular Polymeric Compound and Polymer Light Emitting Diode Using the Same" *Kr patent*, Registration No. 10-1381126.

4 J.-S. Lee, **B.-G. Kang**, C.-L. Lee, K. Lee, H. Kang, "Hole Transport Polymeric Compound and Polymer Light Emitting Diode Using the Same" *U.S. patent*, Application No. 13/933,890.

Collaborators

- Prof. Thomas P. Russell (University of Massachusetts, USA)
- Prof. Ronald G. Larson (University of Michigan, USA)
- Prof. Jimmy W. Mays (University of Tennessee, USA)
- Dr. Changwoo Do (Oak Ridge National Laboratory, USA)
- Dr. David Uhrig (Oak Ridge National Laboratory, USA)
- Prof. Takashi Ishizone (Tokyo Institute of Technology, Japan)
- Prof. Akira Hirao (Tokyo Institute of Technology, Japan)
- Prof. Nikhil K. Singha (Indian Institute of Technology, India)
- Prof. Taihyun Chang (Pohang University of Science and Technology, Korea)
- Prof. Takhee Lee (Seoul National University, Korea)
- Prof. Suk-kyun Ahn (Pusan National University, Korea)
- Prof. Yeon Sik Jung (Korea Advanced Institute of Science and Technology, Korea)
- Dr. Byungjin Cho (Korea Institute of Materials Science, Korea)

References

1 **Prof. Jae-Suk Lee**

Gwangju Institute of Science and Technology (GIST), Korea
School of Materials Science and Engineering
E-mail: jslee@gist.ac.kr

2 **Prof. Jimmy W. Mays**
University of Tennessee, USA
Department of Chemistry
E-mail: jimmy@utk.edu

3 **Prof. Richard A. Register**
Princeton Univerisity, USA
Department of Chemical and Biological Engineering
E-mail: register@princeton.edu