Myungeun Seo

Curriculum Vitae

Department of Chemistry
Korea Advanced Institute of Science and Technology (KAIST)

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Degrees

Ph.D., Chemistry, KAIST, 2008 (Advisor: Sang Youl Kim)
M.S., Chemistry, KAIST, 2004 (Advisor: Sang Youl Kim)
B.S., Chemistry, KAIST, 2002, University Salutatorian

Employments

KAIST

Professor, Department of Chemistry	2023 – present
Associate Professor, Department of Chemistry	2020 – 2023
Adjunct Professor, KI for the Nanocentury	2020 – present
Assistant and Associate Professor, Graduate School of Nanoscience and Technology	2013 – 2020

University of Minnesota

Postdoctoral Associate, Department of Chemistry (Advisor: Marc A. Hillmyer)	2009 – 2013

KAIST

Postdoctoral Associate, Department of Chemistry (Advisor: Sang Youl Kim)	2008 – 2009

Other Appointments

Chair, SAXS Division, Korean Synchrotron Radiation Users Association	2026 – present
Secretary, Eco-Friendly Materials Division, Polymer Society of Korea	2026 – present
Society Development Committee, Polymer Society of Korea	2026 – present
Policy Planning & Evaluation Committee, Polymer Society of Korea	2025 – present
Deliberation Committee, National Research Facilities and Equipment Center	2024 – present
Review Board (Nano/Materials), National Research Foundation of Korea	2024 – present
Editor, *Macromolecular Research* (Polymer Society of Korea)	2021 – present
Editorial Advisory Board, *Chemical Physics Review* (American Institute of Physics)	2021 – present
International Cooperation Council, Polymer Society of Korea	2025
Academic Committee, Polymer Society of Korea	2016, 2024, 2025

Secretary, ACS S. Korea Chapter	2024
Treasurer, Macromolecular Chemistry Division, Korean Chemical Society	2024
Visiting Faculty, Department of Chemistry, Stanford University	2022 – 2023
General Secretary, Polycondensation 2022	2022
Editorial Advisory Board, *Macromolecules* (American Chemical Society)	2019 – 2021
Invited Research Fellow, IBS Center for Nanomaterials and Chemical Reactions	2015 – 2020
Treasurer, ACS S. Korea Chapter	2018 – 2019
Planning Director, Macromolecular Chemistry Division, Korean Chemical Society	2017
Visiting Scientist, Materials Research Laboratory,	2007
University of California Santa Barbara (Advisor: Craig J. Hawker)	
Exchange Scientist, Department of Organic and Polymeric Materials,	2004 – 2005
Tokyo Institute of Technology (Advisor: Masa-aki Kakimoto)	

Honors

Academic Advancement Award,	2026
Macromolecular Chemistry Division, Korean Chemical Society	
LG Chem Mid-Career Academic Award, Polymer Society of Korea	2025
Editorial Contribution Award, *Macromolecular Research*, Springer Nature	2025
Author Service Award, *Macromolecular Research*, Springer Nature	2025
Rising Star in Polymer Science, *Progress in Polymer Science*, Elsevier	2023
Member, Young Korean Academy of Science and Technology	2022
Prime Minister's Commendation for Merit in Promoting Science and Technology, Korea	2022
2021 Distinguished Teaching Award (Graduate School),	2022
College of Natural Sciences, KAIST	
Young Talent in Polymer Science, *Macromolecular Rapid Communications*, Wiley	2021
Pioneering Investigator, *Polymer Chemistry*, Royal Society of Chemistry	2021
Emerging Investigator, *Polymer Chemistry*, Royal Society of Chemistry	2020
KAIST KI for the Nanocentury 9th Fusion Research Award, KAIST	2019
Invited Lecturer of International Leading Young Scientist,	2019
99th Meeting of the Chemical Society of Japan	
Young-Scientist Invited Lecturer,	2018
2nd International Conference of Molecular Engineering of Polymers	
Invited Lecturer from Young Scientists,	2017
66th Meeting of the Society of Polymer Science, Japan	
2016 Distinguished Teaching Award (Graduate School),	2017
College of Natural Sciences, KAIST	
Asia's Rising Scientist, Asian Scientist	2016
2015 Wiley-PSK JPS Young Scientist Award, Polymer Society of Korea	2015
2014 Distinguished Teaching Award (Graduate School),	2015
College of Natural Sciences, KAIST	
EWon Assistant Professorship, KAIST	2015-2018

Chief Director Award for Graduation (University Salutatorian), KAIST 2002

Press

[News] "Depolymerization chemistry towards plastics recycling", 2024
KAIST NEWS et al., May 24

[Interview] "화학은 내 운명 Chemistry happened to be my fate", 2022
Eunyoung Kang, *Chemical Research Information Center*, December 5

[News] "Biocompatible adhesive for hair transplantation", 2022
KAIST NEWS et al., September 21
Also featured on *YTN* and *KBS*

[News] "New polymer mesophase structure discovered", 2022
Younghye Cho, *EurekaAlert!*, June 17

[News] "Emergence of order from disorder", 2022
KAIST NEWS et al., May 11
Also featured on *Youtube* by Science Bookcase and *ScienceDaily*

[News] "Asymmetry in light is amplified in supramolecules", 2022
KAIST NEWS et al., February 16

[Interview] "How to build a lab in East Asia's science hot spots", 2018
Virginia Gewin, *Nature*, June 27

[Interview] "Asia's Rising Scientists: Seo Myungeun", 2016
Nurfilzah Rohaidi, *Asian Scientist*, October 18

[Interview] "Interview with Dr. Myungeun Seo from KAIST", 2015
Yee Min Tan, *Wiley Asia Blog*, April 27

[News] "New polymeric porous materials", 2015
KAIST NEWS et al., January 9

Peer-Reviewed Journal Publications

109. "Hydrophobically modified poly(acrylic acid) coatings on silicone hydrogel contact lenses", Jimin Yoo, Minjoong Shin, Si Chul Rho, Minho Jung*, **Myungeun Seo***, *RSC Appl. Polym. 4*, 1355-1361 (2026).

108. "All-iron redox flow batteries using a DABCO-PPO anion exchange membrane", Taejoon Byun, Jae Bin Park, Kyunghan Lee, Seongbin Kang, Seungwon Kang, Ah Reum Choi, Jin Hong Lee, **Myungeun Seo***, Jinhee Lee*, Minjoon Park*, *Korean J. Chem. Eng. 43*, 2683-2696 (2026).

107. "Biocompatible but antibacterial mechanism of graphene oxide for sustainable antibiotics", Sujin Cha, Ju Yeon Chung, Seungju Yang, Seung Cheol Lee, Chan Woo Lee, Colin Wing-Lok Cheng, Jun Beom Kim, Nam Jun Kim, Ayoung Park, Heewon Choi, Junpyo Sinn, Ralph Weissleder, Nicholas A. Kotov, **Myungeun Seo**, Hyun Jung Chung*, Sang Ouk Kim*, *Adv. Funct. Mater.* 36, e74695 (2026).

106. "Impact-resistant, haze-free, 3D-printable transparent block copolymer resin via photopolymerization-induced microphase separation", Suchan Cho, Young Soo Lee, Subi Choi, Yunmi Chae, Sungmin Park*, Suk-kyun Ahn*, **Myungeun Seo***, *NPG Asia Mater.* 17, 37 (2025).

105. "Post-functionalization of polyethers by photoinduced C–H amidation via polar radical relay", Seung Beom Baek, Youngho Kim, Wongyu Lee, Sangwon Seo, Dongwook Kim, **Myungeun Seo***, Sukbok Chang*, *Nat. Commun.* 16, 7965 (2025).

104. "Morphological transition from porous to nonporous ion-conducting nanochannels in triblock polymer-based anion exchange membranes via polymerization-induced microphase separation", Jinyeong Oh, Taeseok Oh,

Chang Jin Lee, Soonyong So*, **Myungeun Seo***, *J. Membr. Sci.* 734, 124384 (2025)

103. "Covalently constructed multicompartment polymer nanoparticles via architecture-controlled polymerization", Yunji Jung, Boominathan Muniyappan, **Myungeun Seo***, *Macromol. Res.* 33, 1003-1013 (2025) (Review).

102. "Controlling 2D nanoparticle self-assembly mesophases via symmetry breaking driven by single bottlebrush polymer conjugation", SeoYeun Kim, **Myungeun Seo***, Ji Woong Yu*, YongJoo Kim*, *Langmuir* 41, 16224-16234 (2025).

101. "Nanoporous polymeric membranes with tunable 10-nm pore sizes for fast Li^+ ion mobility and enhanced cyclability in lithium metal batteries", Taeseok Oh, Rak Hyeon Choi, Hye Ryung Byon*, **Myungeun Seo***, *Energy Storage Mater.* 80, 104364 (2025).

100. "Decoding the evolution and dynamics of semicrystalline block copolymer assembly via liquid-phase transmission electron microscopy", Jun Ho Whang, Junyeon Yoon, **Myungeun Seo**, Joseph P. Patterson, Eunji Lee*, *Matter* 8, 102148 (2025).

99. "Bottlebrush polymer patches template heterometal growth on gold nanoparticle surface", Minjun Kim, Jiyun Nam, Jiseok Kim, Hyunsik Hwang, **Myungeun Seo***, Hyunjoon Song*, *Nanoscale* 17, 13212-13218 (2025) (selected as an Outside Back Cover).

98. "Sediment-resistant marine antifouling amphiphilic random copolymer coating", Jinhyeok Jeong, Minjoong Shin, Sung Min Kang*, **Myungeun Seo***, *NPG Asia Mater.* 17, 24 (2025).

97. "Drive to asymmetric lamellar order by polymerization-induced microphase separation from the Janus bottlebrush architecture", Changsu Yoo, **Myungeun Seo***, *Macromolecules* 58, 2303-2309 (2025).

96. "Self-assembly of architected macromolecules: Bridging a gap between experiments and simulations", Ji Woong Yu, Changsu Yoo, Suchan Cho, **Myungeun Seo***, YongJoo Kim*, *Chem. Phys. Rev.* 6, 011303 (2025) (Review).

95. "Tuning of folding height in bilayer-folded lamellae by bending rigidity control", Minjoong Shin, Soon Mo Park, Jimin Yoo, Hyungju Ahn*, Dong Ki Yoon*, **Myungeun Seo***, *Macromolecules* 57, 8320-8328 (2024).

94. "Scaling behavior of solution self-assembled micelle of sequence-controlled bottlebrush copolymer", Sangwoo Kwon, Jiyun Nam, Jae Wan Chung, **Myungeun Seo***, Won Bo Lee*, YongJoo Kim*, *Macromolecules* 57, 7664-7674 (2024).

93. "Synthesis and self-assembly of poly(4-vinylphenol)-b-poly(vinyl alcohol) diblock copolymer for invertible core-shell nanoparticles", Taehyoung Kim, Jun Hyok Yoon, **Myungeun Seo**, Sang Youl Kim*, *Polymer* 307, 127293 (2024).

92. "Polymerization/depolymerization-induced self-assembly under coupled equilibria of polymerization with self-assembly", Jiyun Nam, Changsu Yoo, **Myungeun Seo***, *J. Am. Chem. Soc.* 146, 13854-13861 (2024).

91. "Synthesis and thermo-responsive behavior of poly(n-isopropylacrylamide)-b-poly(n-vinylisobutyramide) diblock copolymer", Jun Hyok Yoon, Taehyoung Kim, **Myungeun Seo**, Sang Youl Kim*, *Polymers* 16, 830 (2024).

90. "Tailoring dynamic chiral supramolecular assembly with phototriggered radical anions of C_3-symmetric triphenylene triimides", Namhee Kim, Jun Su Kang, Taesuk Jun, Jong-Min Suh, Deok-Ho Roh, Won-Woo Park, Oh-Hoon Kwon, Tae-Hyuk Kwon, Mi Hee Lim, Du Yeol Ryu, **Myungeun Seo**, Byeong-Su Kim*, *Macromolecules* 57, 21-31 (2024).

89. "Polymerization-induced microphase separation of a polymerization mixture into nanostructured block polymer materials", Taeseok Oh, Suchan Cho, Changsu Yoo, Wonjune Yeo, Jinyeong Oh, and **Myungeun Seo***, *Prog. Polym. Sci.* 145, 101738 (2023) (*Review*) (Invited Paper to a Special Issue "Rising Stars in Polymer Science").

88. "Synthesis of triphenylene-based hierarchically porous monolith with nitroaromatic-sensitive fluorescence", Chinnadurai Satheeshkumar, Howon Seo, Sujung Hong, Pilhan Kim, and **Myungeun Seo***, *Polymer* 265, 125577 (2023).

87. "Biodegradable block copolymer–tannic acid glue", Jongmin Park, Eunsook Park, Siyoung Q. Choi, Jingxian

Wu, Jihye Park, Hyeonju Lee, Hyungjun Kim, Haeshin Lee*, and **Myungeun Seo***, *JACS Au* 2, 1978-1988 (2022).

86. "Microdroplet-mediated radical polymerization", Kyoungmun Lee, Hyun-Ro Lee, Young Hun Kim, Jaemin Park, Suchan Cho, Sheng Li*, **Myungeun Seo***, and Siyoung Q. Choi*, *ACS Cent. Sci.* 8, 1265-1271 (2022).

85. "Patchwork metal-organic frameworks by radical-mediated heterografting of star polymers for surface modification", Nam Young Ahn, Jooyeon Lee, Wonjune Yeo, Hyojin Park, Jiyun Nam, Min Kim*, and **Myungeun Seo***, *Inorg. Chem.* 61, 10365-10372 (2022).

84. "Bilayer-folded lamellar mesophase induced by random polymer sequence", Minjoong Shin, Hayeon Kim, Geon Hyeong Park, Jongmin Park, Hyungju Ahn, Dong Ki Yoon, Eunji Lee, and **Myungeun Seo***, *Nat. Commun.* 13, 2433 (2022).

83. "From macromonomers to bottlebrush copolymers with sequence control: synthesis, properties, and applications", Ki Hyun Kim, Jiyun Nam, Jinwoong Choi, **Myungeun Seo***, and Joona Bang*, *Polym. Chem.* 13, 2224-2261 (*Review*) (selected as a Front Cover).

82. "Side-chain density driven morphology transition in brush–linear diblock copolymers", Jaemin Park, Jiyun Nam, **Myungeun Seo***, and Sheng Li*, *ACS Macro Lett.* 11, 468-474 (2022).

81. "Circularly polarized light can override and amplify asymmetry in supramolecular helices", Jun Su Kang, Sungwoo Kang, Jong-Min Suh, Soon Mo Park, Dong Ki Yoon, Mi Hee Lim, Woo Youn Kim, and **Myungeun Seo***, *J. Am. Chem. Soc.* 144, 2657-2666 (2022).

80. "Ligand-controlled stereoselective synthesis of heterotactic polylactide with titanium (IV) complexes", Yeolib Jeong, Minjoong Shin, **Myungeun Seo***, and Hyunwoo Kim*, *Organometallics* 41, 328-334 (2022).

79. "*In situ* supramolecular polymerization of micellar nanoobjects induced by polymerization", Nam Young Ahn, Sangwoo Kwon, Suchan Cho, Chanhyuk Kang, Jiwon Jeon, Won Bo Lee, Eunji Lee*, YongJoo Kim*, and **Myungeun Seo***, *ACS Macro Lett.* 11, 149-155 (2022).

78. "Circularly polarized light-driven supramolecular chirality", Jun Su Kang, Namhee Kim, Taehyung Kim, **Myungeun Seo***, and Byeong-Su Kim*, *Macromol. Rapid Commun.* 43, 2100649 (2021) (*Review*).

77. "Simultaneous measurement of glass-transition temperature and crystallinity of as-prepared polymeric films from restitution", Jinwon Park, Seongsoo Han, Hyeonjung Park, Jaehong Lee, Suchan Cho, **Myungeun Seo**, Bumjoon J. Kim, and Siyoung Q. Choi*, *Macromolecule*s 54, 9532-9541 (2021).

76. "Folding of sequence-controlled graft copolymers to subdomain-defined single-chain nanoparticles", Jiyun Nam, Sangwoo Kwon, Yong-Guen Yu, Ho-Bin Seo, Jae-Suk Lee*, Won Bo Lee, YongJoo Kim*, and **Myungeun Seo***, *Macromolecules* 54, 8829-8838 (2021).

75. "Downsizing of block polymer-templated nanopores to one nanometer via hyper-cross-linking of high χ–low N precursors", Jeonghyeon Lee and **Myungeun Seo***, *ACS Nano* 15, 9154-9166 (2021).

74. "Nesting well-defined Pt nanoparticles within a hierarchically porous polymer as a heterogeneous Suzuki–Miyaura Catalyst", Soobin Kim, Gábor Varga, **Myungeun Seo***, András Sápi*, Viktória Rácz, Juan F. Gómez-Pérez, Dániel Sebők, Jeonghyeon Lee, Ákos Kukovecz, and Zoltán Kónya, *ACS Appl. Nano Mater.* 4, 4070-4076 (2021).

73. "Synthesis of carboxylic acid-functionalized polymethacrylate-b-polystyrene as an Ag ion-loadable block copolymer thin film template", Issac Shin, Kyu Hyo Han, Seung Keun Cha, Sang Ouk Kim, and **Myungeun Seo***, *Polymer* 217, 123462 (2021).

72. "Surface modification of parylene C film via Buchwald–Hartwig amination for organic solvent-compatible and flexible microfluidic channel bonding", Chinnadurai Satheeshkumar, Bum-Joon Jung, Hansol Jang, Wonhee Lee*, and **Myungeun Seo***, *Macromol. Rapid Commun.* 42, 2000520 (2021) (Invited Paper to a Special Issue "Young Talents in Polymer Science") (selected as a Front Cover).

71. "Core hyper-cross-linked star polymers from block polymer micelle precursors", Jongmin Park, Stefan J. D. Smith, Colin D. Wood, Xavier Mulet, and **Myungeun Seo***, *Polym. Chem.* 11, 7178-7184 (2020) (Invited Paper to a Special Issue "Pioneering Investigators 2021").

70. "Pore engineering of covalently connected metal-organic framework nanoparticle–mixed-matrix membrane composites for molecular separation", Jooyeon Lee, Chinnadurai Satheeshkumar, Hyun Jung Yu, Seongwoo Kim, Jong Suk Lee*, **Myungeun Seo***, and Min Kim*, *ACS Appl. Nano Mater.* 3, 9356-9362 (2020) (selected as a Supplementary Cover).

69. "Dynamic metal-polymer interaction for the design of chemoselective and long-lived hydrogenation catalysts", Songhyun Lee, Seung-Jae Shin, Hoyong Baek, Yeonwoo Choi, Kyunglim Hyun, **Myungeun Seo**, Kyunam Kim, Dong-Yeun Koh, Hyungjun Kim*, and Minkee Choi*, *Sci. Adv.* 6, eabb7369 (2020).

68. "Air-stable perovskite nanostructures with dimensional tunability by polymerizable structure-directing ligands", Jinwoo Byun, Chinnadurai Satheeshkumar, Gil Yong Lee, Jaehoon Oh, Dong Hoon Jung, **Myungeun Seo***, and Sang Ouk Kim*, *ACS App. Mater. Interfaces* 12, 31770-31775 (2020).

67. "Synthesis of in-situ microphase separated organic-inorganic block polymer precursors to 3D-continuous mesoporous SiC-based ceramic monoliths", Yoon-Ho Hwang, Jaehoon Oh, Hyungju Ahn, Dong-Pyo Kim*, and **Myungeun Seo***, *ACS Appl. Polym. Mater.* 2, 2802-2809 (2020) (selected as a Supplementary Cover).

66. "Cross-linking polymerization-induced self-assembly to branched core cross-linked star block polymer micelles", Jongmin Park, Nam Young Ahn, and **Myungeun Seo***, *Polym. Chem.* 11, 4335-4343 (2020).

65. "Achieving fast proton transport and high vanadium ion rejection with uniformly mesoporous composite membranes for high-efficiency vanadium redox flow batteries", Choongseop Jeon, Chanyong Choi, Hee-Tak Kim*, and **Myungeun Seo***, *ACS Appl. Energy Mater.* 3, 5874-5881 (2020).

64. "VATA: a poly(vinyl alcohol)- and tannic acid-based nontoxic underwater adhesive", Daiheon Lee, Honggu Hwang, Jun-Sung Kim, Jongmin Park, Donghwan Youn, Duhwan Kim, Jungseok Hahn, **Myungeun Seo**, and Haeshin Lee*, *ACS Appl. Mater. Interfaces* 12, 20933-20941 (2020).

63. "Synthesis of heterograft copolymers with a semifluorinated backbone by combination of grafting-through and grafting-from polymerizations", Jeonghyeon Lee, Gérald Lopez, Bruno Améduri*, and **Myungeun Seo***, *Macromolecules* 53, 2811-2821 (2020).

62. "Synthesis of regiocontrolled triarylamine-based polymer with a naphthol unit", Jinhee Lee, Jeyoung Park, Hojung Choi, Young Rok Yoon, **Myungeun Seo**, Sua Song, Byung-Kwon Kim, and Sang Youl Kim*, *Polym. Bull.* 78, 965-979 (2021).

61. "Viscosifying a noncovalently joined polymer nanoparticle solution upon heating", Isaac Shin and **Myungeun Seo***, *Macromolecules* 53, 965-972 (2020).

60. "Double-activated nucleophilic aromatic substitution polymerization by bis-ortho-trifluoromethyl groups to soluble para-poly(biphenylene oxide)", Suhyeon Lee, Rokam Jeong, **Myungeun Seo***, and Hee-Seung Lee*, *Polymer* 118, 122124 (2020).

59. "Self-assembly of monolayer vesicles via backbone-shiftable synthesis of Janus core–shell bottlebrush polymer", Jiyun Nam, YongJoo Kim, Jeung Gon Kim, and **Myungeun Seo***, *Macromolecules* 52, 9484-9494 (2019) (selected as a Front Cover).

58. "The heavy-atom effect on xanthene dyes for photopolymerization by visible light", Jieun Yoon, Young Jae Jung, Joon Bo Yoon, Kongara Damodar, Hyungwook Kim, Minjoong Shin, **Myungeun Seo**, Dae Won Cho, Jeong Tae Lee, and Jungkyu K. Lee*, *Polym. Chem.* 10, 5737-5742 (2019).

57. "Synthetic route-dependent intramolecular segregation in heteroarm core cross-linked star polymers as Janus-like nanoobjects", Nam Young Ahn and **Myungeun Seo***, *Polym. Chem.* 11, 449-460 (2020) (Invited Paper to a Special Issue "Emerging Investigators 2020").

56. "Well-defined poly(ether sulfone)-b-polylactide: synthesis and microphase separation behavior", Jinhee Lee, Jongmin Park, and **Myungeun Seo***, *Polym. J.* 52, 111-118 (2020) (Invited Paper to a Special Issue "Precision Polymer Synthesis").

55. "Synthesis of polypropylene via catalytic deoxygenation of poly(methyl acrylate)", Choongseop Jeon, Dong Wook Kim, Sukbok Chang*, Jeung Gon Kim*, and **Myungeun Seo***, *ACS Macro Lett.* 8, 1172-1178 (2019).

54. "Nanoporous poly(ether sulfone) from polylactide-b-poly(ether sulfone)-b-polylactide precursor", Jinhee Lee, Jongmin Park, Jaehoon Oh, Sanghwa Lee, Sang Youl Kim, and **Myungeun Seo***, *Polymer* 180, 121704 (2019).

53. "High-conductivity electrolyte gate dielectrics based on poly(styrene-co-methyl methacrylate)/ionic liquid", Donghui Lee, Yunji Jung, Myeongjin Ha, Hyungju Ahn, Keun Hyung Lee*, and **Myungeun Seo***, *J. Mater. Chem. C* 7, 6950-6955 (2019).

52. "Hyper-cross-linked polymer with enhanced porosity by *in situ* removal of trimethylsilyl group via electrophilic aromatic substitution", Jeonghyeon Lee and **Myungeun Seo***, *ACS Macro Lett.* 7, 1448-1454 (2018).

51. "Creation of micropores by RAFT copolymerization of conjugated multi-vinyl cross-linkers", Chinnadurai Satheeshkumar and **Myungeun Seo***, *Polym. Chem.* 9, 5680-5689 (2018).

50. "Control of ion transport in sulfonated mesoporous polymer membranes", Choongseop Jeon, Joong Jin Han, and **Myungeun Seo***, *ACS Appl. Mater. Interfaces* 10, 40854-40862 (2018).

49. "Poly(amide-imide) materials for transparent and flexible displays", Sun Dal Kim, Byungyong Lee, Taejoon Byun, Im Sik Chung, Jongmin Park, Isaac Shin, Nam Young Ahn, **Myungeun Seo**, Yunho Lee, Yeonjoon Kim, Woo Youn Kim, Hyukyun Kwon, Hanul Moon, Seunghyup Yoo, and Sang Youl Kim*, *Sci. Adv. 4*, eaau1956 (2018).

48. "Transparent poly(amide-imide)s containing trifluoromethyl groups with high glass transition temperature", Byungyong Lee, Sun Dal Kim, Jongmin Park, Taejoon Byun, Seong Jong Kim, **Myungeun Seo**, and Sang Youl Kim*, *J. Polym. Sci. Part A: Polym. Chem.* 56, 1782-1786 (2018).

47. "Shift of the branching point of the side-chain in naphthalenediimide (NDI)-based polymer for enhanced electron mobility and all-polymer solar cell performance", Hoseon You, Donguk Kim, Han-Hee Cho, Changyeon Lee, Sanggyu Chong, Nam Young Ahn, **Myungeun Seo**, Jihan Kim, Felix Sunjoo Kim*, and Bumjoon J. Kim*, *Adv. Funct. Mater.* 28, 1803613 (2018).

46. "Synthesis and phase transition behavior of well-defined poly(arylene ether sulfone)s by chain growth condensation polymerization in organic media", Jinhee Lee, Byungyong Lee, Jeyoung Park, Jaehoon Oh, Taehyoung Kim, **Myungeun Seo**, and Sang Youl Kim*, *Polymer* 153, 430-437 (2018).

45. "Thiol-ene photopolymerization of vinyl-functionalized metal-organic framework towards mixed-matrix membranes", Chinnadurai Satheeshkumar, Hyun Jung Yu, Hyojin Park, Min Kim*, Jong Suk Lee*, and **Myungeun Seo***, *J. Mater. Chem. A* 6, 21961-21968 (2018) (selected as a Back Cover).

44. "A blending mechanism of PS-b-PEO and PS homopolymer at the air/water interface and their morphology control", Baekmin Q. Kim, Yunji Jung, **Myungeun Seo***, and Siyoung Q. Choi*, *Langmuir* 34, 10293-10301 (2018).

43. "Hyper-cross-linked polymer with controlled multiscale porosity via polymerization-induced microphase separation within high internal phase emulsion", Jongmin Park, KyuHan Kim, and **Myungeun Seo***, *Chem. Commun.* 54, 7908-7911 (2018).

42. "Load-bearing supercapacitor based on bicontinuous PEO-b-P(S-co-DVB) structural electrolyte integrated with conductive nanowire-carbon fiber electrodes", Seok-Hu Bae, Choongseop Jeon, Saewoong Oh, Chun-Gon Kim, **Myungeun Seo***, and Il-Kwon Oh*, *Carbon* 139, 10-20 (2018).

41. "Observing phase transition of a temperature-responsive polymer using electrochemical collisions on an ultramicroelectrode", Nhung T. T. Hoang, Jinhee Lee, Byungyong Lee, Hae-Young Kim, Jungeun Lee, Truc Ly Nguyen, **Myungeun Seo**, Sang Youl Kim*, and Byung-Kwon Kim*, *Anal. Chem.* 90, 7261-7266 (2018).

40. "Control of porosity in hierarchically porous polymers derived from hyper-crosslinked block polymer precursors", Soobin Kim and **Myungeun Seo***, *J. Polym. Sci. Part A: Polym. Chem.* 56, 900-913 (2018) (selected as a Front Cover).

39. "Semipermeable microcapsules with a block polymer-templated nanoporous membrane", Jaehoon Oh, Bomi Kim, Sangmin Lee, Shin-Hyun Kim*, and **Myungeun Seo***, *Chem. Mater.* 30, 273-279 (2018).

38. "Effect of homopolymer in polymerization-induced microphase separation process", Jongmin Park, Stacey A. Saba, Marc A. Hillmyer*, Dong-Chang Kang, and **Myungeun Seo***, *Polymer* 126, 338-351 (2017) (Invited Paper

to a Special Issue "Porous Polymers").

37. "Synthesis of coil-comb block copolymers containing polystyrene coil and poly(methyl methacrylate) side chains via atom transfer radical polymerization", Seonhee Shin, Seohyun Moon, **Myungeun Seo***, and Sang Youl Kim*, *J. Polym. Sci., Part A: Polym. Chem.* 54, 2971-2983 (2016).

36. "Heteroarm core cross-linked star polymers via RAFT copolymerization of styrene and bismaleimide", Nam Young Ahn and **Myungeun Seo***, *RSC Adv.* 6, 47715-47722 (2016).

35. "Photoinitiated polymerization-induced microphase separation for the preparation of nanoporous polymer films", Jaehoon Oh and **Myungeun Seo***, *ACS Macro Lett.* 4, 1244-1248 (2015).

34. "Synthesis and self-assembly of partially sulfonated poly(arylene ether sulfone)s and their role in formation of Cu_2S nanowires", Jeyoung Park, Changjun Park, Byoung Tak Yim, **Myungeun Seo***, and Sang Youl Kim*, *RSC Adv.* 5, 53611-53617 (2015).

33. "Induction and control of supramolecular chirality by light in self-assembled helical nanostructures", Jisung Kim, Jinhee Lee, Woo Young Kim, Hyungjun Kim, Sanghwa Lee, Hee Chul Lee, Yoon Sup Lee, **Myungeun Seo***, and Sang Youl Kim*, *Nat. Commun.* 486, 29-39 (2015).

32. "The polymeric upper bound for N2/NF3 separation and beyond; ZIF-8 containing mixed matrix membranes", Sunghwan Park, Woo Ram Kang, Hyuk Taek Kwon, Soobin Kim, **Myungeun Seo**, Joona Bang, Sang hyup Lee, Hae Kwon Jeong*, and Jong Suk Lee*, *J. Membr. Sci.* 486, 29-39 (2015).

31. "Hierarchically porous polymers from hyper-cross-linked block polymer precursors", **Myungeun Seo***, Soobin Kim, Jaehoon Oh, Sun-Jung Kim, and Marc A. Hillmyer, *J. Am. Chem. Soc.* 137, 600-603 (2015).

30. "Interfacial polymerization of reactive block polymers for the preparation of composite ultrafiltration membranes", **Myungeun Seo**, David Moll, Craig Silvis, Abhishek Roy, Sarah Querelle, and Marc A. Hillmyer*, *Ind. Eng. Chem. Res.* 53, 18575-18579 (2014).

29. "Synthesis of triarylamine-based alternating copolymers for polymeric solar cell", Jinhee Lee, Hyojung Cha, Hoyoul Kong, **Myungeun Seo**, Jaewon Heo, In Hwan Jung, Jisung Kim, Hong-Ku Shim, Chan Eon Park*, and Sang Youl Kim*, *Polymer* 55, 4837-4845 (2014).

28. "Optimization of long-range order in solvent vapor annealed poly(styrene)-block-poly(lactide) thin films for nanolithography", A. Baruth, **Myungeun Seo**, Chun Hao Lin, Kern Walster, Arjun Shankar, Marc A. Hillmyer*, and C. Leighton*, *ACS Appl. Mater. Interfaces* 6, 13770-13781 (2014).

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25. "Magnetic microrheology of block copolymer solution", Jin Chul Kim, **Myungeun Seo**, Marc A. Hillmyer*, and Lorraine F. Francis*, *ACS Appl. Mater. Interfaces* 5, 11877–11883 (2013).

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17. "Cross-linked nanoporous materials from reactive and multifunctional block polymers", **Myungeun Seo**, Mark A. Amendt, and Marc A. Hillmyer*, *Macromolecules* 44, 9310–9318 (2011).

16. "Synthesis and self-assembly of diblock copolymers composed of poly(3-hexylthiophene) and poly(fluorooctyl methacrylate) segments", MD. Harun-Or Rashid, **Myungeun Seo**, Sang Youl Kim, Yeong-Soon Gal, Jong Myung Park, Eun Young Kim, Won-Ki Lee, and Kwon Taek Lim*, *J. Polym. Sci., Part A: Polym. Chem.* 49, 4680–4686 (2011).

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Jos M. J. Paulusse, Craig J. Hawker*, and Sang Youl Kim*, *Macromolecules* 41, 6413–6418 (2008).

2. "Preparation of mesoporous materials with adjustable pore size using anionic and cationic surfactants", Ji Won Park, Dong Sin Jung, **Myung Eun Seo**, Sang Youl Kim, Won-Jin Moon, Chae-Ho Shin, and Gon Seo*, *Microporous Mesoporous Mater.* 112, 458–466 (2008).

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Patents

9. "접착제 조성물 및 이의 제조 방법 Adhesive composition and method for preparing same", **Myungeun Seo**, Jongmin Park, Eunsook Park, and Haeshin Lee, KR Pat 10-2728641 (2024); US Pat 12,421,432 (2025).

8. "탈산소화반응을 이용한 탄화수소계 고분자의 합성방법 Method of preparing hydrocarbon polymers using deoxygenation", **Myungeun Seo**, Choongseop Jeon, Sukbok Chang, and Dong Wook Kim, KR Pat 10-2441542 (2022); US Pat 11,555,086 (2023).

7. "실시간 미세상 분리 유기-무기 블락 공중합체로부터 성형된 메조기공 SiC 기반 세라믹 구조물 제작 Method for preparing mesoporous SiC-based ceramic monoliths derived from moldable in-situ microphase separated organic-inorganic block polymers", **Myungeun Seo**, Jaehoon Oh, Yoon-Ho Hwang, and Dong-Pyo Kim, KR Pat 10-2375540 (2022).

6. "표면 개질된 파릴렌 고분자 필름의 제조 방법 및 고분자 미세유체 채널의 제조 방법 Method for producing surface-modified parylene polymer film and method for producing polymer microfluidic channel", **Myungeun Seo**, Chinnadurai Satheeshkumar, Wonhee Lee, Hansol Jang, and Bum Joon Jung, KR Pat 10-2311556 (2021).

5. "온도감응성 고분자의 상전이 측정방법 및 온도감응성 고분자의 상전이 측정장치 A method for measuring phase transition of temperature sensitive polymers and a device for measuring concentration", Byung Kwon Kim, Hae Young Kim, Thi Tuyet Nhung Hoang, Jung Eun Lee, Sang Youl Kim, **Myungeun Seo**, Jinhee Lee, and Byong Yong Lee, KR Pat 10-2192043 (2020).

4. "계층적 다공성 고분자의 제조방법 및 이로부터 제조된 계층적 다공성 고분자 Method of preparing hierarchically porous polymers and hierarchically porous polymers prepared thereby", **Myungeun Seo** and Jongmin Park, KR Pat 10-2187683 (2020); US Pat 11,180,626 (2021).

3. "이온교환 분리막, 이를 포함하는 전기화학 전지, 흐름전지 및 연료 전지, 및 이의 제조방법 Ion exchange separation membrane, electrochemical cell including same, flow cell and fuel cell, and manufacturing method thereof", **Myungeun Seo**, Choongseop Jeon, Joong Jin Han, and Sehee Jung, KR Pat 10-2092997 (2020).

2. "한외여과막용 블록공중합체 및 이의 제조방법 Block copolymer for ultrafiltration membrane and method of preparing the same", **Myungeun Seo**, Jinhee Lee, and Sang Youl Kim, KR Pat 10-1709020 (2017).

1. "코일-빗형 블록 공중합체 및 이를 이용한 나노 구조체의 제조방법 Methods for the preparation of coil-comb block copolymers and their nanostructures", **Myungeun Seo** and Sang Youl Kim, KR Pat 10-1101767 (2011); US Pat 8,518,497 B2 (2013).

Invited Articles

20. [Science Talk] "태초에 무엇이 있었나 In the beginning", Myungeun Seo, *HANSAE:IN* 44, 40-43 (2026).

19. [Introduction] "Macromolecular Materials Chemistry Laboratory@KAIST CHEM", Myungeun Seo, *Polymer Science and Technology* 37, 41-44 (2026).

18. [Science Talk] "끈적이 Sticky stuff", Myungeun Seo, *HANSAE:IN* 43, 40-43 (2025).

17. [Science Talk] "패턴 만들기 Patterning", Myungeun Seo, *HANSAE:IN* 42, 26-29 (2025).

16. [Science Talk] "전선으로부터 자유를 Freedom from wires", Myungeun Seo, *HANSAE:IN* 41, 32-35 (2025).

15. [Science Talk] "깨끗한 물 Clean water", Myungeun Seo, *HANSAE:IN* 40, 24-27 (2025).

14. [Science Talk] "단백질 접기 Protein folding", Myungeun Seo, *HANSAE:IN* 39, 36-39 (2024).

13. [Science Talk] "더 작게, 더 넓게 Smaller, broader", Myungeun Seo, *HANSAE:IN* 38, 28-31 (2024).

12. [Science Talk] "마법의 폴리페놀 Polyphenol magic", Myungeun Seo, *HANSAE:IN* 37, 20-23 (2024).

11. [Science Talk] "현실 공간에서 3 차원 형상을 마음대로 Printing 3D objects on demand", Myungeun Seo, *HANSAE:IN* 36, 18-21 (2024).

10. [Science Talk] "로봇이 미치는 화학 실험의 놀라운 혁명 How robots are changing chemistry", Myungeun Seo, *HANSAE:IN* 35, 18-21 (2024).

9. [Science Talk] "요리와 화학 Cuisine and chemistry", Myungeun Seo, *HANSAE:IN* 34, 10-11 (2023).

8. [Highlight of the month] "무작위성의 역설과 서열의 짝맞추기 문제 Paradox of randomness and sequence matching problem", Minjoong Shin, Jimin Yoo and Myungeun Seo, *CHEMWORLD* 63(10), 21-27 (2023).

7. [Science Talk] "지속 가능한 사회를 위하여 Toward a sustainable society", Myungeun Seo, *HANSAE:IN* 33, 38-41 (2023).

6. [Science Talk] "인간에게 남은 것 What remains of us", Myungeun Seo, *HANSAE:IN* 32, 4-11 (2023).

5. [Special] "태초에 카이랄성은 어떻게 생겼을까: 빛에서 유래하는 비대칭성의 비밀 How chirality would have evolved in the beginning: secret of asymmetry originating from light", Jun Su Kang and **Myungeun Seo***, *Synchrotron Radiation Science and Technology* 29(2), 4-11 (2022).

4. [Special] "미세다공성 고분자의 세공 크기 제어 전략 Strategies for controlling pore size in microporous polymers", Jeonghyeon Lee and **Myungeun Seo***, *Polymer Science and Technology* 31, 188-192 (2020).

3. [Review] "중합에 의해 유도되는 미세상분리를 이용한 나노다공성 고분자 마이크로캡슐의 제조 연구 Fabrication of nanoporous polymer microcapsules by polymerization-induced microphase separation", Jaehoon Oh and **Myungeun Seo***, *Synchrotron Radiation Science and Technology* 25(3), 22-26 (2018).

2. [Book Chapter] "Chapter 3. Robust mesoporous polymers derived from cross-linked block polymer precursors", **Myungeun Seo**, In *Submicron Porous Materials*; Paolo Bettoti Ed.; Springer (2017).

1. "[Review] Porous polymers derived from block polymer precursors", Jaehoon Oh, Soobin Kim, Jongmin Park, and **Myungeun Seo***, *Polymer Science and Technology* 26, 506-518 (2015).

Selected Invited Presentations

30. "Emergence of order in polymerization-induced microphase separation", **Myungeun Seo**, IUPAC-MACRO2026, July 28-31, Kuching, Sarawak, Malaysia (2026).

29. "Functional commodity polymers via postpolymerization modification", **Myungeun Seo**, Pacifichem 2025, December 15-20, Honolulu, HI, USA (2025).

28. "Sequence distribution effect in amphiphilic copolymer self-assembly", **Myungeun Seo**, Pacifichem 2025, December 15-20, Honolulu, HI, USA (2025).

27. "Synthesis of functional copolymers via Postpolymerization C-H functionalization", **Myungeun Seo**, 74th SPSJ Symposium on Macromolecules, September 16, Osaka, Japan (2025).

26. "Functional commodity polymers via Postpolymerization modification", **Myungeun Seo**, PPC-19, July 9,

Kitakyushu, Japan (2025).

25. "Polymerization- and depolymerization-induced nanostructural transitions, **Myungeun Seo**, American Chemical Society 2024 Fall National Meeting & Exposition, August 21, Denver, CO, USA (2024).

24. "Bilayer-folded lamellae: new order from random copolymer self-assembly", Dong Ki Yoon and **Myungeun Seo**, APME23, April 24, Paris, France (2023).

23. "Holding each other's hands together", **Myungeun Seo**, Lecture for Hansae-Yes24 Group, October 19, Seoul, Korea (2023).

22. "Biodegradable block copolymer-tannic acid adhesive", **Myungeun Seo**, American Chemical Society 2023 Spring National Meeting & Exposition, March 26, Indianapolis, IN, USA (2023).

21. "Sequence matching problem in random copolymer sequence", **Myungeun Seo**, PPC-17, December 14, Brisbane, Australia (2022).

20. "Block polymer-based nanoporous membranes for advanced battery applications", **Myungeun Seo**, IUPAC-MACRO2020+, May 20, Jeju, Korea (2021).

19. "Synthesis of polyolefins via postpolymerization defunctionalization", **Myungeun Seo**, IUPAC-MACRO2020+, May 19, Jeju, Korea (2021).

18. "Size-dependent transport in porous polymer membranes via polymerization-induced microphase separation: pushing the limit of domain size control", **Myungeun Seo**, American Chemical Society 2019 Fall National Meeting & Exposition, August 25, San Diego, CA, USA (2019).

17. "Installing/uninstalling functional groups by post-polymerization modification", **Myungeun Seo**, 99th Annual Meeting of the Chemical Society of Japan, March 18, Kobe, Japan (2019) (presented as a "Invited Lecturer of International Leading Young Scientist").

16. "Synthesis of porous polymers with tailored porous space", **Myungeun Seo**, Invited Lecture in Institute Charles Gerhardt Montpellier, December 14, Montpellier, France (2018).

15. "Nanostructured polymeric materials by polymerization-induced microphase separation", **Myungeun Seo**, 2nd International Conference of Molecular Engineering of Polymers (MEP-2018), September 22, Shanghai, China (2018) (invited as a "Young-Scientist Invited Lecturer").

14. "Synthesis of hierarchically porous polymers via block polymer self-assembly", **Myungeun Seo**, International Scientific Conference on "Chemistry for Sustainable Development" (CSD2018), September 10, Hanoi, Vietnam (2018).

13. "Length scale control in polymerization-induced microphase separation", **Myungeun Seo**, 7th Synchrotron Radiation in Polymer Science, September 5, Gyeongju, Korea (2018).

12. "Nanostructured polymeric materials via polymerization-induced microphase separation towards separation and energy applications", **Myungeun Seo**, 255th American Chemical Society National Meeting & Exposition, March 19, New Orleans, LA, USA (2018).

11. "Syntheses of star and bottlebrush polymers towards Janus nanoobjects", **Myungeun Seo**, LG Chem Tech Fair 2017, December 7, Daejeon, Korea (2017).

10. "Polymerization-induced microphase separation in confined space", **Myungeun Seo**, IUMRS-ICAM 2017, August 30, Kyoto, Japan (2017).

9. "Polymerization-induced nanostructuring", **Myungeun Seo**, The 66th Society of Polymer Science Japan Annual Meeting, May 30, Chiba, Japan (2017) (presented as an "Invited Lecturer of International Leading Young Scientist").

8. "Controlled crosslinking copolymerization towards tailored porous polymers", **Myungeun Seo**, IUPAC-PSK40, October 7, Jeju, Korea (2016).

7. "Manipulation of molecular self-assembly by stimuli-responsive conformational change", **Myungeun Seo**, Max Planck Institute for Solid State Research Workshop: Atomic-scale manipulation of molecules on solid surfaces, July 28, Stuttgart, Germany (2016).

6. “Let’s Create Nanostuctures with Polymer!”, **Myungeun Seo**, 2016 ScienceTouch on Friday by National Research Foundation of Korea, April 29, Daejeon, Korea (2016).

5. “Bicontinuous nanostructures by polymerization-induced microphase separation”, **Myungeun Seo**, Pacifichem 2015, December 15-20, Honolulu, HI, USA (2015).

4. “RAFT copolymerization towards crosslinked nanoporous polymers”, **Myungeun Seo**, International Symposium for Advanced Materials Research (ISAMR) 2015, August 16-20, Sun Moon Lake, Taiwan (2015).

3. “Hierarchically porous polymers from block polymer precursors”, **Myungeun Seo**, LG Chem 2015 Metallocene Symposium, February 12, Daejeon, Korea (2015).

2. “Nanoporous poly(ether sulfone) derived from a block polymer precursor”, Jinhee Lee and **Myungeun Seo**, 22th Japan Polyimide & Aromatic Polymer Conference, December 1, Tokyo, Japan (2014).

1. “From a senior who became a scientist: To juniors in future”, **Myungeun Seo**, Special Seminar for Candidates of Korea Science Academy Admission, Korea Science Academy Gwangju Science High School, June 19, Gwangju, Korea (2014).