Min Sang Kwon, Ph.D

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Research ID	I-5237-2015
Google cholar	https://scholar.google.com/citations?user=T3sNok4AAAAJ&hl=ko

Education

2006.09-2011.02	**Seoul National University** *Ph.D.* in *Organic Chemistry* (Specialty in Total Synthesis of Natural Product) Advisor: Professor ***Eun Lee*** Thesis: Total Syntheses of (+)-Exiguolide and (+)-10-Epigyrosanolide E
2002.03-2006.08	**Seoul National University** *B.S.* in *Chemistry* *B.S.* in *Materials Science and Engineering* *Summa Cum Laude* (August 2006)

Awards

2019-2020	**POSCO TJ Park Fellowship** for Young Assistant Professors (청암사이언스펠로 10기)
2013	Financial Sponsorship by WCU Hybrid Material Program, SNU
2009-2010	The National Research Scholarship, KOSAF
2007-2009	High Seoul Science Fellowship, Seoul Scholarship Foundation
2006	Graduation Award for Top Undergraduate Students (SNU, August 2006)
2003-2005	Superior Academic Performance Scholarship, Seoul National University

Experiences

2020.03-current	Assistant Professor Department of Material Science and Engineering, ***Seoul National University***, Seoul, Korea
2016.02-2020.03	Assistant/Associate Professor Department of Material Science and Engineering, ***UNIST***, Ulsan, Korea
2013.03-2016.01	Postdoctoral researcher Department of Material Science and Engineering, ***University of Michigan***, Ann arbor Advisor: Professor ***Jinsang Kim***
2011.03-2013.02	Postdoctoral researcher Department of Material Science and Engineering, ***Seoul National University*** Advisor: Professor ***Soo Young Park***
2005.06-2011.02	Graduate student Department of Chemistry, ***Seoul National University*** Advisor: Professor ***Eun Lee***

Full List of Publications (Journals)

UNIST MSE (2016.02-current) as PI

1. Highly efficient organic photocatalysts discovered via a computer-aided-design strategy for visible-light-driven atom transfer radical polymerization
Singh, V. K., **Yu, C.**, **Badgujar, S.**, **Kim, Y.**, **Kwon, Y.**, **Kim, D.**, **Lee, J.**, **Akhter, T.**, **Thangavel, G.**, Park, L. S., Lee, J., Nandajan, P. C., Wannemacher, R., Milián-Medina, B., Lüer, L, Kim, K. S.*, Gierschner, J.* &

Kwon, M. S.* ***Nat. Catal.*** **1,** 794-804 (2018)

2. Highly efficient and stable inverted perovskite solar cells via semiconducting chemical additive treatment
Yu, J. C.†, **Badgujar, S.**†, Jung, E. D., **Singh, V. K.**, Kim, D. W., Gierschner, J., Lee, E., Y. S. Kim, Cho, S., **Kwon, M. S.*** & Song, M. H.* ***Adv. Mater.*** **31**, 1805554 (2019)

3. Organic photocatalyst for ppm-level visible-light-driven reversible addition-fragmentation chain transfer (RAFT) polymerization with excellent oxygen tolerance
Song, Y.†**, Kim, Y.**†**, Noh, Y., Singh, V. K.,** Behera, S. K., Abudulimu, A., Chung, K., Wannemacher, R., Gierschner, J., Lüer, L & **Kwon, M. S.*** ***Macromolecules*** **52**, 5538-4434 (2019)

4. Reprogramming ferromagnetic domains for reconfigurable soft magnetic actuators
Song, H., Lee, H., Lee, B., Choe, J. K., Lee, S., Lee, J., **Park, S.**, Yoo, J., **Kwon, M. S.*** & Kim, J.* *Submitted* to ***Nano Lett.*** (2020)

5 Tacticity dependent cross-plane thermal conductivity in electrostatically engineered amorphous polymers
Lee, J.†, **Kim, Y.**†, Shalik, J., **Kwon, M. S.*** & Kim, G.* *Submitted to* ***ACS Macro Lett.*** (2020)

6 Design of organic photocatalysts for organic and polymerization reactions
Lee, Y. & **Kwon, M. S.*** *to be submitted* to ***Eur. J. Org. Chem.*** (invited minireview) (2020)

7 Highly controlled catalyst-free visible-light-driven reversible-deactivation radical polymerization via control of electronic states of intermediates
Kim, Y.†**,** Ha, J. K.†, Ahn, J., **Lee, Y.**, Gierschner, J., Kim, K. S., Chang, T.*, Min, S. K.* & **Kwon, M. S.*** *to be submitted* (2020)

8 Solvent-free acrylic visible-light curing pressure-sensitive adhesives via a photoredox-mediated free radical polymerization
Back, J. H., **Kwon, Y.**, Yu, Y., Gierschner, J., Kim, H. J., Lee, W. J.* & **Kwon, M. S.*** *to be submitted to* (2020)

9 Low energy visible-light driven RAFT polymerization using Ag_2S quantum dots
Kim, Y.†**,** Song, J.†, Cho, S.* & **Kwon, M. S.*** *to be submitted* (2020)

Univ. of Michigan MSE (2013.03-2016.01) with Prof. Jinsang Kim

1. Tailoring intermolecular interactions for efficient room temperature phosphorescence (RTP) from purely organic materials in amorphous polymer matrices
Kwon, M. S., Lee, D., Seo, S., Jung, J. & Kim. J.* ***Angew. Chem. Int. Ed.*** **53,** 11177−11181 (2014)
-Selected as a cover article in Angew. Chem. Int. Ed

2. Design principles of chemiluminescence (CL) chemodosimeter for self-signaling detection: luminol protective approach
Kwon, M. S., Jang, G., Bilby, D., Milián-Medina, B., Gierschner, J., Lee, T. S. & Kim, J.* ***RSC Advances*** **4,** 46488−46493 (2014)

3. High thermal conductivity in amorphous polymer blends by engineered intermolecular interactions
Kim, G., Lee, D., Shanker, A., Shao, L., **Kwon, M. S.**, Gidley, D., Kim, J.* & Pipe, P. K.* ***Nat. Mater.*** **14,** 295−300 (2015)

4. A novel optical ozone sensor based on purely organic phosphor
Lee, D., Jung, J., Bilby, D., **Kwon, M. S.**, Yun. J. & Kim, J.* ***ACS App. Mater. Int.*** **7,** 2993-2997 (2015)

5. Designing interchain and intrachain properties of conjugated polymers for latent optical information encoding
Chung, K., McAllister, A., Bilby, D., Kim, B. G., **Kwon, M. S.**, Kioupakis, E. & Kim, J.* ***Chem. Sci.*** **6**, 6980-6985 (2015)

6. Assembly and alignment of conjugated polymers: materials design, processing, and applications
Chung, K., Yu, Y., **Kwon, M. S.**, Swet. J., Youk, J. H. & Kim, J.* ***MRS Commun.*** 169-189 (2015)

7. Shear-triggered lighting up crystallization in thermally stable supercooled liquid of DPP derivative
Chung, K., **Kwon, M. S.**, Leung, B. M., Wong-Foy, A. G., Kim, M. S., Kim, J., Takayama, S., Gierschner, J., Matzger, A. J. & Kim, J.* ***ACS Cent. Sci.*** **1**, 94-102 (2015)

8. Highly sensitive turn-on biosensors by regulating fluorescence dye assembly on liposome surfaces
Seo, S., **Kwon, M. S.**, Phillips, A., Seo, D. & Kim, J.* ***Chem. Commun.*** **51**, 10229-10232 (2015)

9. Suppressing molecular motions for enhanced room-temperature phosphorescence of metal-free organic materials
Kwon, M. S., Yu, Y., Coburn, C., Phillips, A. W., Chung, K., Shanker, A., Jung, J., Kim, G., K. Pipe, Forrest, S. R., Youk, J., Gierschner, J. & Kim, J.* ***Nat. Commun.*** **6**, *8947* (2015)

10. Stimuli-responsive matrix-assisted colorimetric water sensors for polydiacetylene nanofibers
Seo, S., Lee, J., **Kwon, M. S.**, Seo, D. & Kim, J.* ***ACS Appl. Mater. Interfaces*** **7**, 20342-20348 (2015)

11. Multi-luminescent switching of metal-free organic phosphors for luminometric detection of organic solvents
Kwon, M. S., Jordahl, J., Phillips, A. W., Chung, K., Lee, S., Gierschner, J., Lahann, J. & Kim, J.* ***Chem. Sci.*** **7**, 2359-2363 (2016)

12. A novel mechanism for chemical sensing based on solvent-fluorophore-substrate interaction: highly selective alcohol and water sensor with large fluorescence signal contras
Chung, K., Yang, D. S., Jung, J., Seo, D., **Kwon, M. S.** & Kim, J.* ***ACS Appl. Mater. Interfaces*** **8**, 28124-28129 (2016)

13. Room-temperature-phosphorescence-based dissolved oxygen detection by core-shell polymer nanoparticles having metal-free organic phosphors
Yu, Y., **Kwon, M. S.***, Jung, J., Zheng, Y., Kim, M., Chung, K., Gierschner, J., Youk, J. H.*, Borisov, S.* & Kim, J.* ***Angew. Chem. Int. Ed.*** **56**, 16207-16211 (2017)

14. Molecular design approach for directed alignment of conjugated polymers
Chung, K., Yang, D. S., Sul, W. H., Kim, B. G., Kim, J., Jang, G., **Kwon, M. S.**, Barlog, M., Lee, T. S., Park, S. Y.*, Al-Hashimi, M.* & Kim, J.* ***Macromolecules.*** **52,** 6485 (2019)

15. Photochromic behavior of metal-free organic phosphors-doped polymer matrices
Zang, L., **Kwon, M. S.***, Zhang, Z. & Kim, J.* *Submitted to* ***Adv. Opt. Mater.*** (2020)

SNU MSE (2011.03-2013.02) with Prof. Soo Young Park

1. Unique piezochromic fluorescent behavior of dicyanodistyrylbenzene based donor–acceptor–donor triad: mechanically controlled photo-induced eectron transfer (eT) in molecular assemblies.
Kwon, M. S., Gierschner, J., Yoon, S. J. & Park, S. Y.* ***Adv. Mater.*** **24,** 5487−5492 (2012)
-Selected as a front cover article in Advanced Materials
-Advanced Materials Top 40, August 16, 2012, Materials View

2. Rationally designed molecular D-A-D triad for piezochromic and acidochromic on-off fluorescence switching
Kwon, M. S., Gierschner, J., Seo. J. & Park, S. Y.* ***J. Mater. Chem. C.*** **2,** 2552−2557 (2014)

SNU CHEM (2006.09-2011.02) with Prof. Eun Lee

1. Total synthesis of IKD-8344.
Kim, W. H., Hong, S. K., Lim, S. M., Ju, M.-A., Jung, S. K., Kim, Y. W., Jung, J. H., **Kwon, M. S.** & Lee, E.* ***Angew. Chem. Int. Ed.*** **45,** 7072−7075 (2006)

2. Stereoselective synthesis of (+)-IKD-8344.
Kim, W. H., Hong, S. K., Lim, S. M., Ju, M.-A., Jung, S. K., Kim, Y. W., Jung, J. H., **Kwon, M. S.** & Lee, E.* ***Tetrahedron*** **63,** 9784−9801 (2007)

3. Total synthesis of (+)-Exiguolide.
Kwon, M. S., Woo, S. K., Na, S. W. & Lee, E.* ***Angew. Chem. Int. Ed.*** **47,** 1733−1735 (2008)
-Highlighted in Synfacts

4. Total synthesis of (+)-Neopeltolide by a Prins macrocyclization.
Woo, S. K., **Kwon, M. S.** & Lee, E.* ***Angew. Chem. Int. Ed.*** **47,** 3242−3244 (2008)
-Synstories, July 23, 2008, Synform

5. Synthetic studies on soft coral norcembranolides: total synthesis of (+)-10-epigyrosanolide E.
Kwon, M. S., Sim, S. H., Chung, Y. K. & Lee, E.* ***Tetrahedron*** **67,** 10179−10185 (2011)

Invited Seminar & Conference Talks

2016

1. School of Chemical Engineering, Sungkyunkwan University (Invited by Prof. ***Junyeob Lee***, 2016)
2. School of Convergence Science and Technology, SNU (Invited by Prof. ***Kangwon Lee***, 2016)
3. 20th International Symposium on Advanced Display Materials and Devices (ADMD) (2016)

2017

1. Department of Chemistry, Ulsan University (Invited by Prof. ***Sangkook Woo***, 2017)
2. KIDS, Yeongnam Division, Seminar (Invited by Prof. ***Lee Soon Park***, 2017)
3. Department of Materials Science and Engineering, UNIST (Invited by Prof. ***Myounghoon Song***, 2017)
4. 2017 Polymer Society of Korea, Fall Meeting (Invited, Jeju, 2017)
5. Department of Biomaterial Science, Pusan National University (Invited by Prof. ***Sungbaek Seo***, 2017)
6. Department of Chemistry, UNIST (Invited by Prof. ***Jungmin Kee***, 2017)

2018

1. KRICT, Ulsan (Invited by Dr. ***Wonjoo Lee***, 2018)
2. 2018 Polymer Society of Korea, Fall Meeting (Invited, Kyungju, 2018)

2019

1. 2019 Korean Chemical Society, Polymer Division Winter Meeting (Invited, Korea University, 2019/02/25)
2. Department of Chemistry, Korea University (Invited by Prof. ***Hanyoung Woo***, 2019/04/09)
3. Department of Chemistry, Sungkyunkwan University (Invited by Prof. ***Changsik Song***, 2019/04/23)
4. KIST, Seoul (Invited by Dr. ***Junseok Lee***, 2019/04/24)
5. Department of Chemistry, SNU (Invited by Prof. ***Kyungtaek Kim***, 2019/04/25)
6. 2019 Gordon Research Conference, Physical Organic Chemistry (7 talks selected out of 101 posters, 2019/06/23-28)
7. Department of Chemistry, KAIST (Invited by Prof. ***Myoungeun Seo***, 2019/07/10)
8. KU-KIST graduate school, Korea University (Invited by Prof. ***Yongjoo Kim***, 2019/09/03)
9. 2019 Korea-Japan Joint Symposium on Polymer Science (Invited, 2019/09/19)
10. Department of Applied Chemistry, Kyunghee University (Invited by Prof. ***Eunjoo Kang***, 2019/10/24)
11. 2019 Young scientist forum for 3D/4D printings, KIMS (Invited by Dr. **Kyeongwoon Chung**, 2019/10/30)
12. Julich-UNIST joint workshop, UNIST (Invited by Prof. ***Wook Jo***, 2019/11/12)
13. Department of Chemistry, KAIST (Invited by Prof. ***Soonhyeok Hong***, 2019/11/13)
14. Department of Chemistry, Hanyang University (Invited by Prof. ***Sunjoon Min***, 2019/11/28)
15. Department of Chemistry, POSTECH (Invited by Prof. ***Seunghwan Cho***, 2019/12/05)
16. 2019 Korean Chemical Society, Organic Division Winter Meeting (Invited, Sogang University, 2019/12/06)
17. ETRI, Daejun (invited by Dr. ***Jimin Oh***, 2019/12/20)

2020

1 KRICT, Ulsan (Invited by Dr. ***Jeyoung Park***, 2020/02/24, *Cancelled*)
2. Department of Chemistry, Hanyang University (Invited by Prof. ***Youngjong Kang***, 2020/03/12, *Cancelled*)
3. 대한금속학회 융합재료분과 (Invited by Prof. ***Kwanhyung Lee***, 2020/03/19, *Cancelled*)
4 Department of Chemistry, Chungbuk National University (Invited by Prof. ***Min Kim***, 2020/03/26, *Cancelled*)