

# Curriculum Vitae

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## Sungnam Park, Ph. D.

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## CAREER SUMMARY

- 2009. 3 – Present: Assistant Professor, Associate Professor, Full Professor  
Department of Chemistry, Korea University, Seoul, 02841, Korea
- 2021. 3 – 2021. 5: Dean, Center for Teaching and Learning (CTL), Korea University
- 2018. 7 – 2020. 6: Department Chair  
Department of Chemistry, Korea University, Seoul, 02841, Korea
- 2005. 9 – 2009. 2: Post-doctoral research associate  
Department of Chemistry, Stanford University, Stanford, CA, USA  
Advisor: Professor Michael D. Fayer  
  
PULSE Institute, SLAC National Accelerator Lab, Menlo Park, CA, USA  
Advisor: Professor Kelly J. Gaffney

## EDUCATION

- Ph.D. in Chemistry: The University of Chicago, Chicago, IL. USA. August 2005  
Advisor: Professor Norbert F. Scherer
- M.S. in Chemistry: Korea University, Seoul, Korea, February 1999  
Advisor: Professor Keon Kim
- B.S. in Chemistry: Korea University, Seoul, Korea, February 1997

## RESEARCH AREAS

- Machine/Deep learning for materials
- Time-resolved spectroscopy to study photoinduced chemical and physical processes in various molecular systems (transient absorption (TA), TCSPC, ns-TA, time-resolved PL,...)
- Quantum chemical calculations (DFT, TD-DFT)
- Molecular dynamics simulations of complex molecular systems

## EDITORIAL BOARD MEMBERS

- 2022.12 ~ Present: *Scientific Data*, [Editors & Editorial Board | Scientific Data \(nature.com\)](#)
- 2022.9 ~ Present: *Frontiers in Coatings, Dyes and Interface Engineering*, <https://www.frontiersin.org/journals/coatings-dyes-and-interface-engineering/rss>

## REPRESENTATIVE PUBLICATIONS (5 years)

- "Wavelength engineerable porous organic polymer photosensitizers with protonation triggered ROS generation", Jinwoo Shin, Dong Won Kang, Jong Hyeon Lim, Jong Min An, Youngseo Kim, Ji Hyeon Kim, Myung Sun Ji, **Sungnam Park\***, Dokyoung Kim\*, Jin Yong Lee\*, Jong Seung Kim\*, Chang Seop Hong\*, *Nat. Commun.*, **14**, 1498 (2023)
- "Simplified Y6-Based Nonfullerene Acceptors: In-Depth Study on Molecular Structure–Property Relation, Molecular Dynamics Simulation, and Charge Dynamics", Dohun Yuk†, Min Hun Jee†, Chang Woo Koh†, Won-Woo Park†, Hwa Sook Ryu, Dongchan Lee, Shinuk Cho, Shafket Rasool, **Sungnam Park\***, Oh-Hoon Kwon\*, Jin Young Kim\*, Han Young Woo\*, *Small*, **19**, 2206547 (2022)
- "Reliable experimental method for determination of photoacidity revealed by quantum chemical calculations", Joonyoung Francis Joung†, Minseok Jeong† and **Sungnam Park\***, *Phys. Chem. Chem. Phys.*, **24**, 21714-21721 (2022) (Selected as a 2022 PCCP HOT article)
- "Deep learning for development of organic optoelectronic devices: efficient prescreening of hosts and emitters in deep-blue fluorescent OLEDs", Minseok Jeong†, Joonyoung F. Joung†, Jinhyo Hwang†, Minhi Han†, Chang Woo Koh, Dong Hoon Choi\*, **Sungnam Park\***, *npj Comput. Mater.*, **8**, 147 (2022).
- "Beyond Woodward–Fieser Rules: Design Principles of Property-Oriented Chromophores Based on Explainable Deep Learning Optical Spectroscopy", Joonyoung F. Joung†, Minhi Han†, Minseok Jeong, and **Sungnam Park\***, *J. Chem. Inf. Model.*, **62**, 2933–2942 (2022)
- "An unconventional nano-AIEgen originating from a natural plant polyphenol for multicolor bioimaging", Lei Lu, Mengyao Yang, Youngseo Kim, Tingting Zhang, Nahyun Kwon, Haidong Li, **Sungnam Park\***, and Juyoung Yoon\*, *Cell Reports Physical Science*, **3**, 100745 (2022)
- "Access to the Triplet Excited States of Heavy-Atom-Free Boron-Dipyrromethene Photosensitizers via Radical Pair Intersystem Crossing for Image-Guided Tumor-Targeted Photodynamic Therapy", Van-Nghia Nguyen, Jeongsun Ha, Chang Woo Koh, Bokyeong Ryu, Gyoungmi Kim, Jae Hak Park, C-Yoon Kim\*, **Sungnam Park\***, and Juyoung Yoon\*, *Chem. Mater.*, **33**, 7889-7896 (2021)
- "Novel V-Shaped Bipolar Host Materials for Solution-Processed Thermally Activated Delayed Fluorescence OLEDs", Dong Won Lee, Jinhyo Hwang, Hyung Jong Kim, Hyoseong Lee, Jung Min Ha, Han Young Woo, **Sungnam Park\***, Min Ju Cho\*, and Dong Hoon Choi\*, *ACS Appl. Mater. Interfaces*, **13**, 49076-49084 (2021)

- "A Simple Route toward Next-Generation Thiobase-Based Photosensitizers for Cancer Theranostics", Van-Nghia Nguyen, Seonye Heo, Chang Woo Koh, Jeongsun Ha, Gyoungmi Kim, **Sungnam Park\***, and Juyoung Yoon\*, *ACS Sens.*, **6**, 3462–3467 (2021)
- "Ultra-Deep-Blue Aggregation-Induced Delayed Fluorescence Emitters: Achieving Nearly 16% EQE in Solution-Processed Nondoped and Doped OLEDs with CIEy < 0.1", Hyung Jong Kim, Hyunchul Kang, Ji-Eun Jeong, Su Hong Park, Chang Woo Koh, Chai Won Kim, Han Young Woo, Min Ju Cho,\* **Sungnam Park,\*** Dong Hoon Choi\*, *Adv. Func. Mater.*, **31**, 2102588 (2021)
- "Rational Molecular Design of Azaacene-Based Narrowband Green-Emitting Fluorophores: Modulation of Spectral Bandwidth and Vibronic Transitions", Jung Min Ha†, Hye Beom Shint†, Joonyoung Francis Joung†, Won Jae Chung, Ji-Eun Jeong, Sangin Kim, Seon Hyoung Hur, Suk-Young Bae, Jun-Yun Kim, Jun Yeob Lee\*, **Sungnam Park\***, and Han Young Woo\*, *ACS Appl. Mater. Interfaces*, **13**, 26227-26236 (2021)
- "Deep Learning Optical Spectroscopy Based on Experimental Database: Potential Applications to Molecular Design", Joonyoung F. Joung†, Minhi Han†, Jinhyo Hwang, Minseok Jeong, Dong Hoon Choi, and **Sungnam Park\***, *JACS Au*, **1**, 427-438 (2021)
- "Donor engineered Deep-Blue emitters for tuning luminescence mechanism in Solution-Processed OLEDs", Jinhyo Hwang†, Hyunchul Kang†, Ji-Eun Jeong, Han Young Woo, Min Ju Cho\*, **Sungnam Park\***, Dong Hoon Choi\*, *Chem. Eng. J.*, **416**, 129185 (2021)
- "Light-directed trapping of metastable intermediates in a self-assembly process", Joonsik Seo†, Joonyoung F. Joung†, **Sungnam Park\***, Young Ji Son, Jaegeun Noh, and Jong-Man Kim\*, *Nat. Commun.*, **11**, 6260 (2020)
- "Molecular Design of Highly Efficient Heavy-Atom-Free Triplet BODIPY Derivatives for Photodynamic Therapy and Bioimaging", Van-Nghia Nguyen,† Yubin Yim,† Sangin Kim,† Bokyeong Ryu, K. M. K. Swamy, Gyoungmi Kim, Nahyun Kwon, C-Yoon Kim,\* **Sungnam Park,\*** Juyoung Yoon\*, *Angew. Chem. Int. Ed.*, **59**, 8957-8962 (2020)
- "Origin of strong red emission in Er<sup>3+</sup>-based upconversion materials: Role of intermediate states and cross relaxation", Chiho Lee†, Heeyeon Park†, Kim Woong\* and **Sungnam Park\***, *Phys. Chem. Chem. Phys.*, **21**, 24026-24033 (2019)
- "An Emerging Molecular Design Approach to Heavy-Atom-Free Photosensitizers for Enhanced Photodynamic Therapy under Hypoxia", Van Nghia Nguyen†, Sujie Qi†, Sangin Kim†, Nahyun Kwon, Gyoungmi Kim, Yubin Yim, **Sungnam Park\*** and Juyoung Yoon\*, *J. Am. Chem. Soc.*, **141**, 16243-16248 (2019)
- "Facile one-pot polymerization of a fully conjugated donor–acceptor block copolymer and its application in efficient single component polymer solar cells", Chang Geun Park†, Su Hong Park†, Youngseo Kim†, Thanh Luan Nguyen, Han Young Woo, Hungu Kang, Hyo Jae Yoon, **Sungnam Park\***, Min Ju Cho\* and Dong Hoon Choi\*, *J. Mater. Chem. A*, **7**, 21280-21289 (2019)

- “Covalently Linked, Perylene-diimide Polydiacetylene Nanofibers Display Enhanced Stability and Photoconductivity with Reversible FRET Phenomenon”, Joonsik Seo, Chandra Kantha, Joonyoung F. Joung, **Sungnam Park\***, Raz Jelinek, and Jong-Man Kim\*, *Small*, **15**, 1901342 (2019)
- “Ionic effect on the excited-state proton transfer reactions in aqueous solutions”, Joonyoung Francis Joung, Sangin Kim, and **Sungnam Park\***, *Phys. Chem. Chem. Phys.*, **19**, 25509-25517 (2017)
- “Origin of the Reversible Thermochromic Properties of Polydiacetylenes Revealed by Ultrafast Spectroscopy”, Junwoo Baek†, Joonyoung Francis Joung†, Songyi Lee†, Hanju Rhee, Myung Hwa Kim, **Sungnam Park\***, and Juyoung Yoon\*, *J. Phys. Chem. Lett.*, **7**, 259-265 (2016)

\*\*A full list of Publications is available:

<https://ultrafastspec.wixsite.com/spark/publications>

[https://scholar.google.com/citations?hl=ko&user=OfYMDDUAAAAJ&view\\_op=list\\_works&sortby=pubdate](https://scholar.google.com/citations?hl=ko&user=OfYMDDUAAAAJ&view_op=list_works&sortby=pubdate)

## PATENTS

- “Vector beam generator using a passively phase stable optical interferometer”, Kimani C. Toussaint, Norbert F. Scherer, Justin E. Jureller, and **Sungnam Park**, US Patent 7,599,069 (2009)
- “Down-converted light emitting combination and method of manufacturing the same”, Woong Kim, **Sungnam Park**, Wonbae Sohn, Gang Yeol Yoo, Chiho Lee, Korea Patent, 10-2225843 (March 4, 2021)
- “System and Method for Predicting the Spectroscopic Properties of Molecules Based on Machine Learning”, **Sungnam Park**, Joonyoung F. Joung, Minhi Han Dong Hoon Choi, Minseok Jeong, Korea Patent, 10-2392500 (April 26, 2022)

## AWARDS

- “The Distinguished Lectureship Award for Work on 2DIR Spectroscopy”, The 93<sup>rd</sup> Annual Meeting of The Chemical Society of Japan, Shiga, Japan, March 24, 2013.

## PROFESSIONAL MEMBERSHIPS

- Korean Chemical Society
- American Chemical Society
- Materials Research Society

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Last updated on *December 20, 2022*