

CURRICULUM VITAE

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Education

1996. 6 **Ph.D.**, Chemistry (*Environmental Chemistry*)

California Institute of Technology (**CALTECH**), Pasadena, CA, U.S.A.

1990. 2 **M.S.**, Chemistry (*Physical Chemistry*)

Pohang University of Science and Technology (**POSTECH**), Pohang, Korea

1988. 2 **B.S.** (with honors), Engineering (*Chemical Technology*)

Seoul National University (**SNU**), Seoul, Korea

Professional Experience & Research Area

■ 2022. 2 – present

Distinguished Professor & Director, KENTECH Institute for Environmental & Climate Technology, Korea Institute of Energy Technology (KENTECH)

■ 1998. 2 – 2022.1

Professor, Division of Environmental Science and Engineering (also at Dept. of Chemical Engineering in 2008.6-2022.1), POSTECH (served as the *Division Head* in 2016.1-2021.11)

Research area: Semiconductor photo(electro)catalysis for environmental and energy applications; Solar fuels & Artificial photosynthesis (H₂ production, CO₂ conversion); Photochemical purification of water and air; Advanced oxidation processes (AOPs); Environmental (photo)chemistry; Ice chemistry; Environmental redox processes

■ 2020.6 – present

Director, Leading Researcher Project (National Research Foundation of Korea)

■ 2006. 3 – 2007. 2 / 2013.3 – 2014.2

Visiting Scholar, Environmental Science & Engineering, CALTECH

(LG Yonam Research Fellow, *on sabbatical leave from POSTECH*, 2006)

■ 1996. 6 – 1998. 2

Postdoctoral Scholar, NASA/Caltech Jet Propulsion Laboratory (**JPL**), *Atmospheric Chemistry Research Element, Earth and Space Sciences Division*

Research area: Laboratory kinetic studies of heterogeneous atmospheric chemical reactions

Awards and Honors

- 2023 Elected as a **member**, *National Academy of Engineering of Korea (NAEK)*
- 2022-2019 **Highly Cited Researcher** (Clarivate Analytics)
- 2021 Elected as an associate member, *National Academy of Engineering of Korea (NAEK)*
- 2020 Proud Postechian Award (Research)
- 2020 **Doosan Yonkang Environment Award**
- 2019 Academic Award, *Korean Society of Environmental Engineers*
- 2018 **Korea Engineering Award**
- 2017 Environment & Energy Award, *Korean Chemical Society (KCS)*
- 2017 Invited Visiting Professor (2017.4-2022.4); Guangdong Univ. of Technol., China
- 2015 **KAST Science and Technology Award**
- 2014 KIST Excellent Researcher Award
- 2014 Elected as **Fellow of the Royal Society of Chemistry (FRSC)**
- 2014 Appointed as DeTao Master (2014.10), DeTao Masters Academy, Shanghai, China
- 2014 Elected as **Fellow of Korean Academy of Science and Technology (KAST)**
- 2013 Excellence in Review Award, *Environ. Sci. Technol. (American Chemical Society)*
- 2012 Pohang MBC-Samil Munhwa Special Award
- 2012 **Namgo (Jong-Ryul Lee) Chair Professor**, POSTECH
- 2011 Invited Visiting Professor (Sept. 19-24, 2011); University Lille 1, France
- 2011 Awardee of “Rising Star” Faculty Special Support Program (POSTECH)
- 2011 Erudite Visiting Professor (Feb. 7-12, 2011); Erudite Scholar-in-Residence Programme; Kerala State Higher Education Council/Mahatma Gandhi University (Kottayam, Kerala, India)
- 2008 Lectureship Award for Asian and Oceanian Photochemist (*Japanese Photochemistry Association*)
- 2005 **Young Scientist Award** (*Korean Academy of Science and Technology; Ministry of Science & Technology; presented by the president of the Republic of Korea*)
- 2006 LG Yonam Research Fellow
- 2003 Elected as Associate Member of *Korean Academy of Science and Technology*
- 2001 Best Paper Award, *Korean Society of Industrial and Engineering Chemistry*
- 1988 President of Alumni Association Award for Outstanding Engineering Students (*SNU Engineering College*)

Summary of Academic Achievements and Services (*Selected*)

- **355** research articles published in SCI journals
- Total citations **>53,100** (Web of Science, 2023/6): **H-index 107**
- Google Scholar citation **>70,300**, **H-index 118** (2023/6)
- Advised **28 Ph.D.** and **29 M.S.** degrees during the tenure of POSTECH (1998–2022)
- Teaching courses: Environmental physical chemistry, Environmental chemistry, Water pollution, Photocatalysis for energy & environmental applications, Photochemical purification of water and air
- **Editor-in-Chief**, *ACS ES&T Engineering* (ACS: 2020.1 – present)
- **Associate Editor**, *Environmental Science & Technology* (ACS: 2017.4 – 2019.12)
- **Editor**, *Journal of Hazardous Materials* (Elsevier: 2008.2 – 2017.3)
- **Editor**, *Rapid Communication in Photoscience* (Korean Society of Photoscience: 2013.1– 2017.12)
- **Editorial Advisory Panel**, *Nature Sustainability* (2020.7-present)
- **Editorial Advisory board**, *Energy and Environmental Science* (RSC: 2008.5 – present)
- **Editorial Advisory board**, *ACS Earth and Space Chemistry* (ACS: 2017.3 – present)
- **Editorial Advisory board**, *EcoMat* (Wiley: 2019.12 – present)
- **Editorial Advisory board**, *Environmental Science & Technology* (ACS: 2015.2 – 2017.3)
- **Editorial Advisory board**, *Journal of Physical Chemistry* (ACS: 2009.1 – 2011.12)
- **Editorial board**, *Catalysts* (MDPI: 2021.1 – present)
- **Editorial board**, *Aerosol Science and Engineering* (Springer: 2016 – present)
- **Editorial board**, *International J. of Photoenergy* (Hindawi: 2012.6 – 2014.12)
- **Editorial board**, *J. Advanced Oxidation Technology* (Sci. Technol. Network, Inc.)
- Co-guest editor of a special issue “*Catalysis for Water Purification*” in *Catalysis Today* (Vol. 282, part 1, 2017)
- Co-guest editor of a special issue “*Nanotechnologies for the Treatment of Water, Air, and Soil*” in *Journal of Hazardous Materials* (Vol. 211-212, 2012)
- Co-guest editor of a special issue “*Catalysis for Hydrogen Energy Production and Utilization*” in *Catalysis Today* (Vol. 146, issues 1-2, 2009)
- Co-guest editor of a special issue “*Catalysis for Environment Friendly Technologies*” in *Catalysis Today* (Vol. 87, issues 1-4, 2003)
- Co-guest editor of a special issue on photocatalysis in *The Korean Journal of Chemical Engineering* (Vol. 18, number 6, 2001)
- Associate Editor, *Environmental Engineering Research* (2004.12–2006.2, Korean Society of Environmental Engineers)
- Editorial board, *J. of Industrial and Engineering Chemistry* (2002.1–present, Korean Society of Industrial and Engineering Chemistry/Elsevier)

- President, *Korean Society of Photoscience* (2020.1–2021.12)
- Chair, Division of Environment and Energy, *Korean Chemical Society* (2011.1–2012.12)
- Co-Chair, *11th Asian Photochemistry Conference* (APC 2021, on-line conference), Korea, Oct. 31-Nov. 4, 2021
- Organizer, *6th International Workshop on Frontiers in Environmental Chemical Research*, POSTECH, Korea, Oct. 25, 2019
- Organizer, *5th Workshop on Frontiers in Environmental Chemical Research*, POSTECH, Korea, Oct. 23, 2018
- Organizer, *4th Workshop on Frontiers in Environmental Chemical Research: AOPs in Water Treatment*, POSTECH, Korea, Aug. 31-Sept. 1, 2017
- Organizer, *3rd International Workshop on Frontiers in Environmental Chemical Research (in honor of Prof. Michael Hoffmann's 70th Birthday)*, POSTECH, Korea, Nov. 11, 2016
- Organizer, *2nd International Workshop on Frontiers in Environmental Chemical Research*, POSTECH, Korea, May 19, 2015
- Organizer, *International Workshop on Solar Energy for Clean Water*, POSTECH, Pohang, Korea; Oct. 27, 2014
- Organizer, *International Workshop on Frontiers in Environmental Chemical Research*, POSTECH, Korea, May 30, 2011
- Technical Program Coordinator (Environmental Chemistry), *Pacificchem 2010*, Honolulu, Hawaii, USA, Dec. 15-20, 2010.
- Organizer, *EPB & Post-IPS Workshop on Solar Photochemistry and Materials for Energy and Environment*, POSTECH, Pohang, Korea, July 31, 2010
- Co-Chair, *18th International Conference on Photochemical Conversion and Storage of Solar Energy (IPS-18)*, Seoul, Korea, July 25-30, 2010
- Secretariat, *9th Korea-Japan Symposium on Catalysis*, POSTECH, Pohang, May 14-17, 2003.

- Panel Member (*PE8: Products and Processes Engineering*) for European Research Council (ERC) Starting Grant evaluation (2022.01-2023.12)
- Council Member, *International Association of Catalysis Societies (IACS)*, 2020-
- Councilor, Asian and Oceanian Photochemistry Association (APA), 2017-2023
- International Organizing Committee, *International Conference on Photochemical Conversion and Storage of Solar Energy (IPS)*, 2008.8-2014.7.
- Scientific International Committee, *European Meeting on Solar Chemistry and Photocatalysis: Environmental Applications (SPEA)* (2008-2014)