Wonwoo Nam
Ewha Distinguished Professor

Department of Chemistry and Nano Science
Center for Biomimetic Systems
Ewha Womans University
Seoul, Korea

Tel: +82-2-3277-2392 Fax: +82-2-3277-4114 E-mail: wwnam@ewha.ac.kr

Education

California State University, Los Angeles	B.S.	1985	Chemistry
University of California, Los Angeles	Ph.D.	1990	Chemistry

Professional Career

Postdoctoral Fellow	UCLA	1990 – 1991
Assistant Professor	Hong Ik University	1991 – 1994
Assistant & Associate Professor	Ewha Womans University	1994 – 2000
Professor	Ewha Womans University	2000 – Present
Distinguished Professor	Ewha Womans University	2005 – Present
Director	Center for Biomimetic Systems	2003 – Present
Chair of Directors' Association of Creative Research Initiative (CRI) Program		2009 – 2010
Director of Metal Oxygen Bioinspired Chemistry Laboratory MOBIC in World Class University Program with Foreign Distinguished Professors Joan S. Valentine (UCLA, USA), Kenneth D. Karlin (Johns Hopkins University, USA), Shunichi Fukuzumi (Osaka University, Japan), and Antoni Llobet (ICIQ, Spain)		2008 – Present
Associate Editor; *Chemical Science* (RSC, the multidisciplinary flagship journal of the Royal Society of Chemistry), 2011 – Present		

Awards & Honors

- The 4th Young Scientist Award (A highly honored award given in chemistry field every other year by the President of Korea), 2000
- Excellent Research Award at Ewha Womans University, 2001
- Korean Chemical Society Award in Division of Inorganic Chemistry, 2003
- Best Research Paper by Korean Federation of Science and Technology Societies, 2004
- The 1st Ewha Academic Award, 2005
- Monthly Best Scientist Award by Ministry of Science and Technology of Korea, 2005
- Korean Chemical Society Award, 2006
- The 5th DuPont Science and Technology Award, 2006
- The 3rd Kyeong-Am Academic Award, 2007
- Named as a Role Model Scientist, Korea Science Foundation, 2008
- Excellent Research Award at Ewha Womans University, 2008
- Taikyu Rhee Academic Award, 2012
- Outstanding Achievement Award, Society of Asian Biological Inorganic Chemistry, 2014

- Commendation for Excellent Research in Basic Science, Ministry of Science, ICT and Future Planning, 2015
- Korea Science Award (A highly honored award given by the President of Korea), 2015

- Fellow of the Royal Society of Chemistry (RSC), 2014 – Present
- Junior Fellow and Fellow, Korean Academy of Science and Technology, 2002 – Present
- University of Hong Kong, Honorary Professor, 2007 – Present
- Peking University, Guest Professor, 2018 – 2022
- Nanjing University, Concurrent Professor, 2012 – Present
- Nagoya Institute of Technology, Professor for the Brain Circulation Project, 2015 – 2017
- Lanzhou Institute of Chem Phys, Chinese Academy of Science, Honorary Professor, 2015 – Present
- Sun Yat-sen University, Part-time Professor, 2015 – 2018
- One Thousands Talents Program Given by Chinese Government, 2016 – 2019
- "Qujiang Scholar", Shaanxi Normal University, 2017 – 2022
- Jinan University, Honorary Professor, 2017 – Present
- Tohoku University, Visiting Professor, 2015
- Osaka University, Distinguished Scientist in COE Program, 2007 – 2010

Activities as Editor or Editorial Board Member

- Associate Editor; *Chemical Science* (RSC), 2011 – Present
- Editorial Advisory Board; *Accounts of Chemical Research* (ACS), 2006 – 2015
- Editorial Advisory Board; *Chemical Communications* (RSC), 2012 – Present
- Editorial Advisory Board; *Inorganic Chemistry Frontiers* (RSC), 2013 – Present
- Editorial Advisory Board; *Progress in Inorganic Chemistry* (John-Wiley & Sons, Inc.), 2012 – Present
- Editorial Advisory Board; *Journal of Inorganic Biochemistry* (Elsevier), 2007 – Present
- Editorial Board; *Bioinorganic Reaction Mechanism* (De Gruyter), 2011 – Present
- Editorial Advisory Board; *Inorganic Chemistry* (ACS), 2010 – 2012
- Editorial Advisory Board; *Dalton Transactions* (RSC), 2009 – 2013
- International Advisory Board; *Chemistry – An Asian Journal* (Wiley-VCH), 2010 – 2013
- Editorial Advisory Board; *Journal of Biological Inorganic Chemistry* (Springer), 2003 – 2011
- Associate Editor; *Journal of Korean Chemical Society* (KCS), 2004 – 2006
- General Secretary (Elected), Society of Biological Inorganic Chemistry, 2011 – 2015
- Council Member, Society of Biological Inorganic Chemistry, 2007 – 2011
- Chair Elect, Society of Asian Biological Inorganic Chemistry, 2019 – 2021

Major Symposium Activity as an Organizer or Co-organizer (2003 – Present)

- Organizer, The 6th International Ewha Bioinorganic Chemistry Symposium, 2019 (Seoul, Korea)
- Organizer, The 5th International Ewha Bioinorganic Chemistry Symposium, 2017 (Seoul, Korea)
- Organizer, The 4th International Ewha Bioinorganic Chemistry Symposium, 2016 (Seoul, Korea)
- Organizer, ChemComm Symposium, 2015 (Seoul, Korea)
- International Advisory Panel, 41st International Conference on Coordination Chemistry

(ICCC-41), 2014 (Singapore)
- International Advisory Committee, AsBIC 7, 2014 (Gold Coast, Austrialia)
- Organizer, 3rd International Bioinorganic Chemistry Symposium in Seoul, 2013 (Seoul, Korea)
- Organizer, KAST Symposium on the Impact of Chemistry on Biology, 2013 (Seoul, Korea)
- International Advisory Committee, AsBIC 6, 2012 (Hong Kong, China)
- Treasurer, 7th International Conference on Porphyrins and Phthalocyanines, 2012 (Jeju Island, Korea)
- Organizer, 2nd International Bioinorganic Chemistry Symposium on Small Molecule Activation by Heme and Nonheme Enzymes and Models (Associated with Chemical Science of RSC), 2012 (Seoul, Korea)
- Organizer, Ewha-Berkeley-Princeton Joint Symposium in Functional Biomimetic Materials, 2011 (Seoul, Korea)
- Organizer, ChemComm Symposium, 2010 (Seoul, Korea and Osaka, Japan)
- International Advisory Committee, AsBIC V, 2010 (Kaohsiung, Taiwan)
- International Advisory Committee, 2nd Asian Conference on Coordination Chemistry, 2010 (Nanjing, China)
- Session Organizer, 6th International Conference on Porphyrins and Phthalocyanines, 2010 (Texas, USA)
- International Advisory Committee, Singapore International Chemical Conference VI, 2009 (Singapore)
- Session Organizer, 14th International Conference on Biological Inorganic Chemistry, 2009 (Nagoya, Japan)
- Organizer, The 4th Asian Biological Inorganic Chemistry Conference, 2008 (Jeju Island, Korea)
- International Advisory Committee, 1st Asian Conference on Coordination Chemistry, 2008 (Okazaki, Japan)
- Organizer, 1st International Bioinorganic Chemistry Symposium, 2006 (Seoul, Korea)
- International Advisory Committee, AsBIC-III, 2006 (Nanjing, China)
- Session Organizer, Pacifichem 2005, 2005, 2010, 2015 (Hawaii, USA)
- Session Organizer, 11th Asian Chemical Congress, 2005 (Seoul, Korea)
- International Advisory Committee, AsBIC-II, 2004 (Goa, India)
- Steering Committee, Asian Bioinorganic Chemistry Society, 2003 (Okazaki, Japan)
- International Advisory Committee, Activation of Dioxygen and Homogeneous Catalytic Oxidation, 1999 – present

Research Interest

1. Biomimetic studies of heme and nonheme iron enzymes: Synthesis and spectroscopic and structural characterization of heme and nonheme iron-oxygen intermediates in dioxygen activation chemistry by biomimetic compounds. Mechanisms of oxygenation reactions of organic compounds by iron-oxygen intermediates. Mechanisms of oxygen-oxygen bond cleavage of iron-dioxygen complexes. Development of environmentally benign catalytic oxidation systems using heme and nonheme iron complexes.
2. Metal-oxygen intermediates: Synthesis, spectroscopic and structural characterization, and reactivity studies of nonheme metal-oxygen intermediates. Mechanisms of oxygen atom transfer from metal-oxygen intermediates to organic compounds. Catalytic oxidation of organic substrates by metal complexes.
3. Water oxidation & artificial Photosystem II: Elucidation of the mechanism of O-O bond

formation using metal-oxygen intermediates. Mechanistic studies of metal ion effects on the reactivities of high-valent metal-oxo intermediates. Development of efficient water oxidation catalysts using inorganic and nano materials.

4. Density functional theory (DFT) calculations: Combined experimental and theoretical approaches to understand reactivities of metal-oxygen intermediates in electrophilic and nucleophilic oxidative reactions, such as activation energy barriers, geometries, and spin density distribution to support or exclude experimentally proposed mechanisms. Searching for new mechanisms and predict reactivities where experiments are not available.
5. Photoluminescent sensors for metal ions in biological systems: Understanding photophysical processes of luminophores under physiological conditions. Development of novel sensory systems for *in vivo* & *in vitro* detection of metal ions and reactive oxygen species (ROS).

Short Summary of Publications

More than 320 papers, including Nature (1), Science (2), Nature Chemistry (4), Nature Communications (2), Accounts of Chemical Research (6), Journal of the American Chemical Society (JACS, 77), Angewandte Chemie International Edition (28), and Chemical Science (14), have been published in the fields of Bioinorganic and Biomimetic Chemistry.