

Joon Won Park

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Education:

Feb. 1979 B. S., Chemistry, *Magna Cum Laude*, Sogang University, Korea
Feb. 1981 M. S., Chemistry, Korea Advanced Institute of Science and Technology, Korea (Thesis Advisor: Professor Sang Chul Shim)
Oct. 1988 Ph. D., Chemistry, California Institute of Technology, USA
(Advisor: Victor and Elizabeth Atkins Professor Robert H. Grubbs, 2005 Nobel Laureate in Chemistry)

Professional Experience:

Mar. 1981 – Jun. 1984 Research Scientist, LG Chemical Research Institute, Korea
Aug. 1984 – Oct. 1988 Teaching Assistant, Research Assistant, Caltech, USA
Dec. 1988 – Jun. 1990 Postdoctoral Fellow, Northwestern University, USA
(Advisor: Morrison Professor Tobin J. Marks)
Jul. 1990 – present Professor, Pohang University of Science and Technology
Sep. 1998 – Feb. 1999 Visiting Scholar, Massachusetts Institute of Technology, USA (Host: Professor Timothy M. Swager)
Apr. 2001 – Sep. 2009 Director, Bionanotechnology Center of POSTECH
Apr. 2006 – Mar. 2008 CEO, NSB POSTECH (a Division of POSTECH)
Apr. 2008 – present Chairman, NSB POSTECH Inc.
Apr. 2009 – present Chairman of SAB, Nanogea Inc.
Sep. 2011 – present Head, Department of Chemistry, POSTECH
Sep. 2011 – present Director, BK21 program, BK21 Plus program
Jan. 2012 – Dec. 2012 Chairman, Division of Inorganic Chemistry, KCS

Dec. 2012 – present Dean, School of Science, POSTECH
Jan. 2014 – present Chairman, Committee of International Affairs, KCS

Principal Research Interests:

Force-Based Atomic Force Microscopy, Use of AFM for Ultrasensitive Diagnosis and Bioanalysis, Surface for Biochips, Surface Materials for Genomics and Proteomics

Awards

1979 The Highest GPA Award at the Commencement, Sogang University
2001 Research Award, Inorganic Chemistry Division, Korean Chemical Society
2002 Prime Minister's Award, Annual Korea IP Exhibition
2007 Chairman's Award, Excellence in Research, NanoKorea 2007
2008 Chairman's Award, Excellence in Service, NanoKorea 2008
2008 Postechian Award, Excellence in voluntary community service
2009 Top 10 professors, Korean Intellectual Property Office

Publications in Area of Biochip, Nanoimaging, and Nanopatterning:

- 1) D. -R. Dai; M. A. Hubbard; J. W. Park; T. J. Marks^{*}; J. Yang; G. K. Wong, "Rational Design and Construction of Polymers with Large Second-Order Optical Nonlinearities", *Mol. Crys. Liq. Crys.*, Vol.189 (1990) 93.
- 2) J. W. Park; T. J. Marks^{*}; J. Yang; G. K. Wong, "Chromophore-Functionalized Polymeric Thin-Film Nonlinear Optical Materials: Effects of In-Situ Cross-Linking on Second Harmonic Generation Temporal Characteristics", *Chem. Mater.*, Vol. 2 (1990) 229.
- 3) J. U. Choi; C. B. Lim; J. H. Kim; T. Y. Chung; J. H. Moon; Hahn, J. H.; S. B. Kim; J. W. Park^{*}, "Self-Assembly of Nonlinear Optical Chromophores Layers through the Ionic Interaction", *Synth. Met.*, Vol. 71 (1995) 1729.
- 4) M. Firestone; J. W. Park; N. Minami; M. A. Ratner; T. J. Marks^{*}; W. Lin; G. K. Wong, "Chromophore-Functionalized Glassy Polymers with Large Second-Order Nonlinear Optical Responses", *Macromolecules*, Vol.28 (1995) 2247.
- 5) J. H. Moon; J. U. Choi; J. H. Kim; H. Chung; J. H. Hahn; S. B. Kim; J. W. Park^{*}, "Self-Assembly of Nonlinear Optical Chromophores through Ionic Interactions" *J. Mater.*

Chem., Vol. 6 (1996) 365.

6) J. H. Moon; J. W. Shim; S. Y. Kim, J. W. Park*, "Formation of Uniform Aminosilane Thin Layers: An Imine Formation to Measure Relative Surface Density of the Amine Group" Langmuir, Vol. 12 (1996) 4621.

7) J. H. Moon; J. H. Kim; K. -J. Kim; T. -H. Kang; B. Kim; C.-H. Kim; J. H. Hahn; J. W. Park*, "Absolute Surface Density of the Amine Group of the Aminosilylated Thin Layers: UV-Vis Spectroscopy, Second Harmonic Generation, and Synchrotron-Radiation Photoelectron Spectroscopy Study", Langmuir, Vol. 13 (1997) 4305.

8) J. H. Moon; J. W. Shin; J. W. Park*, "Self-Assembly of Aminosilane Layers: Determination of Surface Density of the Amine Group through a Reversible Chemical Reaction", Mol. Cryst. Liq. Cryst., Vol. 295 (1997) 185.

9) J. H. Moon; K. -J. Kim; T. -H. Kang; B. Kim; H. Kang; J. W. Park*, "Selective Cleavage of the Nitro Group from a Nitrophenyl Monolayer by Synchrotron Soft X-Ray", Langmuir, Vol. 14 (1998) 5673.

10) Hong Jin Kim; Joong Ho Moon; Joon Won Park*, "A Hyperbranched Poly(ethyleneimine) Grown at the Surfaces", J. of Colloid and Interface Science, Vol. 227 (2000) 247.

11) J. H. Moon; Y. -H. La; J. Y. Shim; B. J. Hong; K. J. Kim; T. -H. Kang; B. Kim; H. Kang; J. W. Park*, "Selective Cleavage of the Carbon-Halide Bond in Substituted Benzaldimine Monolayers by Synchrotron Soft X-Ray", Langmuir, Vol. 16 (2000) 2981.

12) Soon Jin Oh; Joon Won Park*, "Stepwise Growth of Oligodeoxynucleotides on Solid Hydroxylated Substrates", Mol. Cryst. Liq. Cryst., Vol. 371 (2001) 83.

13) Sung Ju Cho; Hong Jin Kim; Joon Won Park*, "Increased Amine Surface Density of an Aminosilylated Molecular Layer through Hyperbranching", Mol. Cryst. Liq. Cryst., Vol. 371 (2001) 71.

14) Young-Hye La, Hyun Ju Kim, Il Sang Maeng, Yu Jin Jung, Joon Won Park*, Ki-Jeong Kim, Tai-Hee Kang, Bongsoo Kim, "Differential Reactivity of Nitro-Substituted Monolayers to Electron Beam and X-ray Irradiation", Langmuir, Vol. 18 (2002) 18, 301-303.

15) Soon Jin Oh, Sung Ju Cho, Chang Ok Kim, Joon Won Park*, "Characteristics of DNA Microarray Fabricated on the Various Aminosilane Layers", Langmuir, Vol. 18 (2002) 1764-1769.

- 16) Young-Hye La, Hyun Ju Kim, Il Sang Maeng, Yu Jin Jung, Joon Won Park*, Ki-Jeong Kim, Tai-Hee Kang, Bongsoo Kim, "Selective Cleavage of the Nitro Group in Nitro-Substituted Aromatic Monolayers by Synchrotron Soft X-ray: Effect of Molecular Structure on the Cleavage Rate", *Langmuir*, Vol. 18 (2002) 2430-2433.
- 17) Tai-Hee Kang, Ki-Jeong Kim, Chan-Cuk Hwang, Kyu-Wook Ihm, Hyun-Joon Shin, Min-Kyu Lee, Bongsoo Kim, Young-Hye La, Joong Ho Moon, Hyun Ju Kim, Joon Won Park*, Chong-Yun Park, "Selective Cleavage of Functional Groups in the Functionalized Organic Monolayers by Synchrotron Soft X-rays" *Surface Review and Letters*, (2002) 305-311.
- 18) Bong Jin Hong, Jeo Young Shim, Soon Jin Oh, Kibong Lee, Joon Won Park*, "Regular Mesospacing between Reactive Amine Groups on the Surface through Self-Assembly of a Dendron" *Langmuir*, Vol. 19 (2003) 2357.
- 19) Chang Ok Kim, Sung Ju Cho, Joon Won Park*, "Hyperbranching Polymerization of Aziridine on Silica Solid Substrates Leading to a Surface of Highly Dense Reactive Amine Group", *J. Colloid and Interface Science*, Vol. 260 (2003) 374.
- 20) Young-Hye La, Hyun Ju Kim, Yu Jin Jung, Joon Won Park*, Ki-Jeong Kim, Tai-Hee Kang, Bongsoo Kim, "Sub 100 nm Pattern Formation through Selective Chemical Transformation of Self-Assembled Monolayers by Soft X-ray Irradiation" *Langmuir*, Vol. 19 (2003) 4390.
- 21) Il Sang Maeng, Joon Won Park*, "Patterning on Self-Assembled Monolayer by Electron Beam and Its Amplification by Atom Transfer Radical Polymerization", *Langmuir*, Vol. 19 (2003) 4519.
- 22) Chang Ok Kim, Jie Won Jung, Minju Kim, Tai-Hee Kang, Kyuwook Ihm, Ki-Jeong Kim, Bongsoo Kim, Joon Won Park,* Hyun-Woo Nam, and Kwang-Jin Hwang, "Low Energy Electron Beam Irradiation Promoted Selective Cleavage of Surface Furoxan", *Langmuir*, Vol. 19 (2003) 4504.
- 23) Yu Jin Jung, Young-Hye La, Hyun Ju Kim, Tai-Hee Kang, Kyuwook Ihm, Ki-Jeong Kim, Bongsoo Kim, Joon Won Park,* "Pattern Formation through Selective Chemical Transformation of Imine Group of Self-Assembled Monolayer by Low-Energy Electron Beam", *Langmuir*, Vol. 19 (2003) 4512.
- 24) Young-Hye La,* Yu Jin Jung, Tai-Hee Kang, Kyuwook Ihm, Ki-Jung Kim, Bongsoo Kim, and Joon Won Park, "NEXAFS Studies on the Soft X-ray Induced Chemical

Transformation of 4-Nitrobenzaldimine Monolayer”, Langmuir, Vol. 19 (2003) 9984.

25) Il Sang Maeng, Joon Won Park*, “Formation of a Rectangular Poly(methylmethacrylate) Micropattern onto Polystyrene Brush with Use of ATRP and Electron Beam Irradiation, Langmuir, Vol. 19 (2003) 9973.

26) Young-Seo Choi, Chang Won Yoon, Hae Dong Lee, Min Young Park, Joon Won Park*, “Enhanced Protein-Ligand Interactions by Guaranteed Mesospacing between Immobilized Biotins”, Chem. Commun., (2004) 1316.

27) Chang Ok Kim, Sun-Young Hong, Bum-Soo Kim, Hye-Young Shim, Minju Kim, Su-Moon Park, and Joon Won Park*, “Modification of Indium-Tin Oxide (ITO) Glass with Aziridine provides a Surface of High Amine Density”, J. of Colloid and Interface Science, 277 (2004) 499-504.

28) Li-Hua Chen, Young-Seo Choi, Joseph Kwon, Rong-Shun Wang, Taehoon Lee, Sung Ho Ryu, and Joon Won Park*, “Interaction between glutathione and glutathione-S-transferase on dendron self-assembled controlled pore glass beads”, Tetrahedron, 60 (2004) 7293-7299.

29) Li-Hua Chen, Young-Seo Choi, Jung Won Park, Joseph Kwon, Rong-Shun Wang, Taehoon Lee, Sung Ho Ryu, and Joon Won Park* “Effect of Linker for Immobilization of Glutathione on BSA-Assembled Controlled Pore Glass Beads” Bull. Kor. Chem. Soc., 25 (2004) 1366-1370.

30) Yu Jin Jung, Jung-Im Kim, Tai-Hee Kang, Kyuwook Ihm, Ki-Jeong Kim, Bongsoo Kim, and Joon Won Park*, “Pattern formation through chemical transformation of self-assembled benzaldimine monolayer by soft X-ray irradiation”, J. of Colloid and Interface Science , 282 (2005) 241-247.

31) Bong Jin Hong, Soon Jin Oh, Tae One Youn, Sung Hong Kwon, Joon Won Park*, “Nanoscale-Controlled Spacing Provides DNA Microarrays with the SNP Discrimination Efficiency in Solution Phase” Langmuir, 21(2005) 4257-4261.

32) Soon Jin Oh, Jimin Ju, Byung Chul Kim, Eunsil Ko, Bong Jin Hong, Jae-Gahb Park, Joon Won Park, and Kwan Yong Choi*, “DNA microarrays on a dendron-modified surface improve significantly the detection of single nucleotide variations in the p53 gene” Nucleic Acids Research, 33 (2005) e90.

33) Bong Jin Hong, Vijaya Sunkara, and Joon Won Park*, “DNA Microarrays on Nanoscale-Controlled Surface”, Nucleic Acids Research, 33 (2005) e106

- 34) Hye Ryung Byon, Bong Jin Hong, Yong Song Gho, Joon Won Park, Hee Chul Choi,* "Pseudo 3D Singl-Walled Carbon Nanotube Film for BSA-Free Protein Chips" *ChemBioChem*, 6 (2005) 1331.
- 35) Sang-Hyun Yun, Byeong-Hyeok Sohn,* Jin Chul Jung, Wang-Cheol Zin, Moonhor Ree, Joon Won Park, "Micropatterning of a Single Layer of Nanoparticles by Lithographical Methods with Diblock Copolymer Micelles" *Nanotechnology*, 17 (2006) 450.
- 36) Chang Ok Kim, Duk Hoe Kim, Jung Sook Kim, Joon Won Park,* "Self-Assembly of a Diblock Copolymer on a Patterned Surface with Low Energy Electron Beam", *Langmuir*, 22 (2006) 4131.
- 37) Seung Koo Shin, Hye Ju Yun, Yu Jin Jung, Joon Won Park,* , "Nanoscale Controlled Self-Assembled Monolayer and Quantum Dot", *Current Opinion on Chemical Biology*, 10 (2006) 423.
- 38) Joon Won Park*, "Guest Editorial", *Current Applied Physics*, 6 (2006) 595.
- 39) Soon Jin Oh,* Bong Jin Hong, Kwan Yong Choi, Joon Won Park, "Surface Modification for DNA and Protein Microarrays", *Omics*, 10 (2006) 327.
- 40) Vijaya Sunkara, Bong Jin Hong, Joon Won Park,* "Sensitivity enhancement of DNA microarray on nanoscale-controlled surface by using a streptavidin-fluorophore conjugate" *Biosensor and Bioelectronics*, 22 (2007) 1532.
- 41) Sung Hong Kwon, Bong Jin Hong, Hye Young Park, Wolfgang Knoll,* Joon Won Park,* "DNA-DNA Interaction on the Dendron-Modified Sol-Gel Film Followed with Surface Plasmon Fluorescence Spectroscopy", *J. Colloids and Interface Sciences*, 308 (2007) 325.
- 42) Yu Jin Jung and Joon Won Park*, "Single Interaction Force of Biomolecules with Picoforce AFM", *Journal of the Korean Vacuum Society*, 16 (2007) 52.
- 43) Yu Jin Jung, Bong Jin Hong, Wenke Zhang, Saul J. B. Tendler, Philip M. Williams, Stephanie Allen,* Joon Won Park,* "Dendron Arrays for the Force-Based Detection of DNA Hybridization Events", *J. Am. Chem. Soc.*, 129 (2007) 9349.
- 44) Sungwook Woo, Yoonmi Lee, Vijaya Sunkara, Ravi Kumar Cheedarala, Hyeon Suk Shin, Hee Cheul Choi*, and Joon Won Park*, "'Fingertip'-Guided Noncovalent Functionalization of Carbon Nanotubes by Dendrons", *Langmuir*, 23 (2007) 11373.
- 45) Dhruvajyoti Roy, Ju-Won Kwak, Wan Joo Maeng, Hyungjun Kim, and Joon Won

Park*, “A Dendron-Modified Polystyrene Microtiter Plate: Surface Characterization with Picoforce AFM and Influence of the Spacing between the Immobilized Amyloid Beta Proteins”, *Langmuir*, 24 (2008) 14296-14305.

46) Jin-Young Park, Sung Hong Kwon, Joon Won Park, Su-Moon Park, Label-free detection of DNA molecules on the dendron based self-assembled monolayer by electrochemical impedance spectroscopy, *Anal. Chim. Acta*, 619 (2008) 37-42.

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48) Yu Jin Jung, Yu Shin Park, Ki-Jun Yoon, Young-Yun Kong, Joon Won Park* and Hong Gil Nam*, “Nanoscale 2-D Image of Pax6 mRNA in a Mouse Embryonic Tissue by Picoforce AFM”, *Nucleic Acids Research*, 37 (2009) e10.

49) Ravi Kumar Cheedarala, Vijaya Sunkara, and Joon Won Park*, “Facile Synthesis of Second-Generation Dendrons with an Orthogonal Functional Group at the Focal Point” *Synthetic Communications*, 39 (2009) 1966.

50) Il Hong Kim, Hye Young Lee, Hae Dong Lee, Yu Jin Jung, Saul J. B. Tendler, Philip M. Williams, Stephanie Allen, Sung Ho Ryu* and Joon Won Park*. “Interaction between Signal Transducing Proteins Measured by Picoforce Atomic Force Microscopy”, *Anal. Chem.*, 81 (2009) 3276.

51) Han-Na, Hwang, Jung Sook Kim, Jung Moo Heo, Joon Won Park, Kwang-Jin Hwang; Chan-Cuk Hwang, "Extreme Ultraviolet-Induced Surface Modification of Self-Assembled Monolayers of Furoxans", *J. Phys. Chem. C.*, 113 (2009) 16027.

52) Young-Eun Choi, Ju-Won Kwak and Joon Won Park*, “Nanotechnology for Early Cancer Detection”, *Sensors*, 10 (2010) 428.

53) Duk Hoe Kim, Nak-Kwan Chung, Joon Won Park*, “Immobilizing a Single DNA Molecule at the Apex of AFM Tips through Picking and Ligation”, *Soft Matters*, 6 (2010) 3979.

54) Dhruvajyoti Roy, Sung Hong Kwon, Ju-Won Kwak, and Joon Won Park*, ““Seeing and Counting” Individual Antigens Captured on a Microarrayed Spot with Force-Based Atomic Force Microscopy”, *Anal. Chem.*, 82 (2010) 5189.

55) Bee Hak Hong, Soon Jin Oh, Jimin Ju, Bong Jin Hong, Do Soo Jang, Young Sung Yun, Joon Won Park, Kwan Yong Choi*, “Oligonucleotide Microarrays with High

Discriminating Power for the Detection of Single Nucleotide Variations in the p53 Gene”, *Molecules and Cells* 30 (2010), 575-579.

56) Eung-Sam Kim, Bong Jin Hong, Chang-Wook Park, Joon Won Park*, and Kwan Yong Choi*, “The Effect of Lateral Spacing on Enzymatic On-Chip DNA Polymerization”, *Biosensor and Bioelectronics*, 26 (2011) 2566.

57) Il Hong Kim, Mi Nam Lee, Sung Ho Ryu, and Joon Won Park*, “Nanoscale Mapping and Affinity Constant Measurement of a Signal-Transducing Protein by Atomic Force Microscopy”, *Anal. Chem.*, 83 (2011) 1500.

58) Eung-Sam Kim, Chang Ok Kim, Joon Won Park*, Kwan Yong Choi*, “Detection of central single-nucleotide mismatches in short duplex DNAs on hyper-branched amine surfaces”, *BioChip J.* 5 (2011) 137.

59) Duckhoe Kim, Nak-Kwan Chung, Stephanie Allen, Saul Tendler, and Joon Won Park*, “Ferritin-Based New Magnetic Force Microscopic Probe Detecting 10-nm Sized Magnetic Nanoparticles”, *ACS Nano* (2012) 241.

60) Eung-Sam Kim, Chang-Kyoon Shim, Jae W. Lee, Joon Won Park, and Kwan Yong Choi*, “Synergistic effect of orientation and lateral spacing of protein G on an on-chip immunoassay”, *Analyst* 137 (2012) 2421.

61) Eung-Sam Kim, Jung Sook Kim, Yoonhee Lee, Kwan Yong Choi, and Joon Won Park*, “Following the DNA Ligation of a Single Duplex Using Atomic Force Microscopy”, *ACS Nano* (2012) 6108.

62) Yu Jin Jung*, Jeffrey A. Albrecht, Ju-Won Kwak, and Joon Won Park*, “Direct Quantitative Analysis of HCV RNA by Atomic Force Microscopy without Labeling or Amplification”, *Nucleic Acids Research* (2012) 11728.

63) Hyun Seo Koo, Han-Na Hwang, Yoon Man Lee, Joon Won Park, Chan-Cuk Hwang*, and Kwang-Jin Hwang*, “Adsorption and EUV-Induced Modification of Furoxanethiols for Diverse Functionalities on Gold Surface”, *Bull. Kor. Chem. Soc.* (2012) 4191.

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65) Eung-Sam Kim, Namgyu Lee, Joon Won Park, and Kwan Yong Choi*, “Kinetic characterization of on-chip DNA ligation on dendron-coated surfaces with nanoscaled lateral spacings”, *Nanotechnology* (2013) 405703.

- 66) Kyongman An, Igor Klyubi, Youngkyu Kim,....., Joon Won Park, Tae-Wan Kim, Dominic M Walsh, Michael J Rowan, and Joung-Hun Kim*, “Exosomes neutralize synaptic-plasticity-disrupting activity of A β assemblies in vivo”, *Molecular Brain* (2013) 47.
- 67) Ju-Won Kwak, Hyobin Jeong, Sun-Ho Han, Youngkyu Kim, Sung Min Son, Inhee Mook-Jung*, Daehee Hwang*, and Joon Won Park*, “Phosphokinase Antibody Arrays on a Dendron-Coated Surface”, *Plos One* (2014) e96456.
- 68) Jae-Eun Lee, Ju-Won Kwak, Joon Won Park,* Shyh-Chyang Luo, Bo Zhu, and Hsiao-hua Yu*, “Nanoscale Analysis of a Functionalized Polythiophene Surface by Adhesion Mapping”, *Anal. Chem.* (2014) 6865.
- 69) Youngkyu Kim, Eung-Sam Kim, Yoonhee Lee, Joung-Hun Kim, Bong Chu Shim, Seong Moon Cho, Jeong Soo Lee, and Joon Won Park*, “Reading Single DNA with DNA polymerase followed by Atomic Force Microscopy”, *J. Am. Chem. Soc.* (2014) 13754.
- 70) Jae-Eun Lee, Shyh-Chyang Luo, Bo Zhu, Joon Won Park,* and Hsiao-hua Yu*, “Nanoscale analysis of functionalized polythiophene surfaces prepared by cyclic voltammetry and potentiostatic electropolymerizations”, *RSC Advances*, (2014) 62666.
- 71) Dae Heon Kim^a, Jae-Eun Lee^a, Zheng-Yi Xu, Kyeong Rok Geem, Joon Won Park*, Inhwan Hwang*, “Cotranslational sorting of nascent proteins at ribosomes during chloroplast protein targeting”, *Nature Communications*, under revision (2015). ^aThe first two authors contributed equally to this work.
- 72) Yu Shin Park, Jung Sook Kim, Hong Gil Nam*, and Joon Won Park*, “Imaging a Specific mRNA in Pollen with Atomic Force Microscopy”, manuscript in preparation.
- 73) Woong Kim, Eunbyoul Lee, Duckhoe Kim, Zee Hwan Kim*, and Joon Won Park*, “Single Plasmonic Au@Ag Nanoparticle-Attached Tips for Tip-Enhanced Spectroscopy”, manuscript in preparation.
- 74) Youngkyu Kim, Ji-hyun Yun, Joung-Hun Kim, and Joon Won Park*, “Interaction between beta Amyloids followed by Atomic Force Microscopy”, manuscript in preparation.
- 75) Hyun-Seo Koo, Yoonhee Lee, Youngkyu Kim*, Joung-Hun Kim, and Joon Won Park*, “Quantitative Analysis of microRNAs with Atomic Force Microscope without Amplification”, manuscript in preparation.
- 76) Yoonhee Lee, Donggyu Lee, and Joon Won Park*, “Quantitative Analysis of a DNA Biomarker under Twenty Copies without Amplification”, manuscript in preparation.

Publication in area of Lanthanide Hydrolytic Catalysis:

- 1) S. J. Oh; K. H. Song; J. W. Park*, "Catalytic Hydrolysis of Phosphate Monoesters by Lanthanide(III) Cryptate (2.2.1) Complexes", Chem. Comm., (1995) 575.
- 2) S. J. Oh; C. W. Yoon; J. W. Park*, "Catalytic Hydrolysis of Phosphate Triesters by Lanthanide(III) Cryptate (2.2.1) Complexes", J. Chem. Soc., Perkin Trans., Vol. 2 (1996) 329.
- 3) S. J. Oh; K. H. Song; D. Whang; K. Kim; T. H. Yoon; H. Moon; J. W. Park*, "Catalytic Hydrolysis of Phosphate Diesters by Lanthanide(III) Cryptate (2.2.1) Complexes", Inorg. Chem., Vol. 35 (1996) 3780.
- 4) Soon Jin Oh; Joon Won Park*, "Dissociation Kinetics of Europium(III) Cryptate Complexes in Aqueous Buffers", J. Chem. Soc., Dalton Trans., Vol. 5 (1997) 753.
- 5) S. J. Oh; Y. -S. Choi; S. Hwangbo; S. C. Bae; J. K. Ku; J. W. Park*, "Structure and Phosphodiesterase Activity of Bis-Tris Coordinated Lanthanide(III) Complexes", Chem. Comm., Vol. 20 (1998) 2189.
- 6) Chang Won Yoon; Soon Jin Oh; Young Jin Jeon; Young-Seo Choi; Youn-Kyoung Son; Seok Whangbo; Ja-Kang Ku*; Joon Won Park*, "An Europium(III) Hydrolytic Catalyst Favoring Anionic Phosphate Esters over Phosphate Triester", Bull. Kor. Chem. Soc. Vol. 22 (2001) 199.
- 7) H. S. Son; J. Roh; S. K. Shin; J. W. Park*; J. K. Ku*, "Luminescence spectroscopy of Eu(Bis-tris)³⁺ complexes in anhydrous DMF: Luminescence quenching rate constants for the ⁵D₀ state of Eu³⁺ by DMF and polyalcoholic OH groups", JCS Dalton Trans. (2001) 1524.
- 8) Jihee Lee, Minyoung Park, Hyun Soo Sohn, Sangbum Lee, Hee Chun Lee, Ja Kang Ku, Joon Won Park, "Anomalous high cooperativity of oligodeoxycytidylic acid for luminescence resonance energy transfer to lanthanide ions", Biopolymers, Vol. 67 (2002) 413-420.

Publication in area of C-H Bond Activation and Homogeneous Ziegler-Natta Catalysis:

- 1) Park, J. W.; Mackenzie, P. B.; Schaefer, W. P.; Gubbs, R. H. "Carbon-Hydrogen Bond Activation through a Binuclear C-H Bond Complex", J. Am. Chem. Soc., 108 (1986)

6402.

- 2) Ozawa, F.; Park, J. W.; Mackenzie, P. B.; Schaefer, W. P.; Henling, L. M.; Grubbs, R. H. "Structure and Reactivity of Titanium/Platinum and Palladium Heterobinuclear Complexes Having μ -Methylene Ligand", *J. Am. Chem. Soc.*, 111 (1989) 1319.
- 3) Park, J. W.; Henling, L. H.; Schaefer, W. P.; Grubbs, R. H. "Structure and Reactivity of Titanocene(η^2 -thioformaldehyde) Trimethylphosphine", *Organometallics*, 9 (1990) 1650.
- 4) Park, J. W.; Henling, L. H.; Schaefer, W. P.; Grubbs, R. H. "Structure of Titanium-Rhodium Heterobinuclear Complexes with μ -Phenyl Ligands", *Organometallics*, 10 (1991) 171.
- 5) C. H. Lee; S. J. Lee; J. W. Park*; K. H. Kim; B. Y. Lee, J. S. Oh, "Preparation of $\text{Al}(\text{C}_6\text{F}_5)_3$ and Its Use for the Modification of Methylalumoxane", *J. Mol. Cat. A-Chem.*, Vol. 132 (1998) 231.
- 6) C. H. Lee; Y. H. La; S. J. Park; J. W. Park*, "Preparation of N,N-Disilylated 1,8-Diaminonaphthalene Chelates and Their Group 4 Metal Complexes for Ethylene Polymerization", *Organometallics*, Vol. 17 (1998) 3468.
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- 9) C. H. Lee; Y. -H. La; J. W. Park*, "Zirconium(IV) Complexes Having a Rigid 1,8-Naphthalene Diamide versus a Flexible 1,3-Propylene Diamide for Olefin Polymerization", *Organometallics*, Vol. 19 (2000) 344.

Books:

- 1) D. -R. Dai; M. A. Hubbard; D. Li; J. W. Park; M. A. Ratner; T. J. Marks*; J. Yang; G. K. Wong, "Chromophore-Polymer Assemblies for Nonlinear Optical Materials", *ACS Symp.*, Vol.455 (1991) 226.
- 2) S. S. Yun; S. W. Kang; S. K. Kang; W. W. Nam; J. W. Park; M. E. Lee; H. K. Chae "Nomenclature of Inorganic Compounds", Korean Chemical Society, Chungmoonkak, Seoul (1998).
- 3) Soon Jin Oh, Bong Jin Hong, Vijaya Sunkara, Eunsil Ko, Kwan Yong Choi, Joon Won

Park, “DNA microarrays on nanoscale-controlled mesospaced surface with enhanced selectivity and sensitivity”, In “Biochips Nanotechnology” American Scientific Publisher, USA (2007).

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Patents:

1) In application: 15 international and 11 domestic

2) Patent issued: 15 international and 12 domestic

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