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EDUCATION

Aug '04 – Current **UNIVERSITY OF HOUSTON(UH)**, Houston, Texas, USA.
Department of Chemistry (Division: Physical Chemistry)– *third year*.

Mar '99 – Feb '01 **DONG-A UNIVERSITY**, Busan, SOUTH KOREA, *M.S.*
Chemical Engineering (Electrochemistry, Analytical Chemistry).
M.S. Thesis: The Study to Increase the Sensitivity of QCM Gas-Sensor Coated with Plasma-Polymerized Film (*Advisor: Professor Sang Mok, Chang*).

Mar '91 – Feb '99 **DONG-A UNIVERSITY**, Busan, SOUTH KOREA, *B.S.*
Chemical Engineering.

RESEARCH AREAS OF INTEREST

- Self-Assemblied Monolayer (SAM) for Polymer and Composite Nano-Coatings
- Analysis of Polymer Composite Rheology Using Quartz Crystal Methodology
- Surface Morphology Study by Using AFM for Nano-Technology
- Electrochemical Deposition
- Microfluidic Channels Using Soft-Lithography Technique
- Chemical & Biochemical Sensor System for Nano-Coating Materials Using Quartz Crystal Microbalance

RESEARCH EXPERIENCES

Sep '02 – Feb '04	**Researcher**	Research Center in Dong-A University (**CIIPMS**). *-Center for Intelligent & Integrated Port Management Systems.*
Jan '01 – Feb '01	**Visiting Research**	DMX – LP, EPFL, Switzerland.
Jun '00 – July '00	**Visiting Research**	Seiko Instruments Inc., Japan.

HONORS AND AWARDS

Jan '05 – Present **University of Houston** (Department of Chemistry), *Research Assistant*
Aug '04 – Dec '04 **University of Houston** (Department of Chemistry), *Teaching Assistant* Organic chemistry laboratories
May '04 – Aug '04 **University of Houston** (Department of Chemistry), *Research Assistant*
Aug '04 – Apr '04 **University of Houston** (Department of Chemistry), *Teaching Assistant* Organic chemistry laboratories
Mar '99 – Dec '99 **DONG-A UNIVERSITY** (Chemical Engineering), *Teaching Assistant*

SCHOLARSHIPS/FELLOWSHIPS

- Aug '04 – Present **University of Houston** (Department of Chemistry) Graduate Assistant fellowship
- Mar '99 – Dec '99 **DONG-A UNIVERSITY** (Chemical Engineering) Graduate Assistant fellowship
- Mar '97 – Feb '98 **DONG-A UNIVERSITY** (Undergraduate in Chemical Engineering) *Scholarship*.

PROFESSIONAL RESEARCH BACKGROUNDS & TECHNIQUES

1) PROFESSIONAL RESEARCH BACKGROUNDS

- Polymer SAM Fabrication (silane, thiol modification through dip-coating, spin coating or casting)♦
- Polymer SAM Analysis in Real-time •
- Functionalized Surface Analysis*
- Micro-Contact Printing Technique (Soft-Lithography-PDMS)

2) RESEARCH TECHNIQUES

- Sputtering Technique for Fabrication of Various Metal Electrodes on the Quartz Crystal and Glass♦
- Spin-coating for the fabrication of Ultra-Thin Films (Headway Corp.)♦
- Vacuum Deposition Technique♦
- QCA917-Quartz Crystal Microbalance (Seiko Instruments)•
- Digital Potentiostate (Seiko EG&G)•
- Lab-View Software Programming for Communication of Digital Instrument Interface (Quartz Crystal Analyzer, Potentiostate or Impedance Analyzer)•
- AFM microscope Nanoscope IIIa - Multimode (Digital Instrument) *
- AFM microscope Nanoscope IIIa - Dimension 3000 (Digital Instrument) *
- AFM microscope-3800 (Seiko Instruments) *
- AFM Picoplus/Pico (Molecular Imaging Inc.)
- Langmuir-Blogette Technique
- Ellipsometer for Thickness of Thin Film*
- Contact Angle Measurements for Surface Energy*
- FT-IR, IR Imaging, ATR-FTIR, DSC, TMA, SEM. OM

MEMBERSHIPS

2004 - Present	American Chemical Society
1999 – 2001	The Korean Institute of Chemical Engineers
1999 – 2001	The Korean Industrial and Engineering Chemistry
1999 – 2001	The Korean Sensors Society

PARTICIPATED PROJECTS

2000 – 2001	Development of Ocean Port Environment Monitoring System Using Quartz Crystal Analyzer- ***Korea Science and Engineering Foundation (KOSEF)***.
2000 – 2001	The Study to Increase the Sensitivity of QCM Gas-Sensor Coated with Plasma-Polymerized Film- ***Dong-A University***.

CONFERENCES & PRESENTATIONS

03/2006	231st ACS National Meeting & Exposition, Atlanta, GA
10/2005	49th Welch Conferenc e, Houston, TX
04/2005	Sigma Xi Research Society, University of Houston
03/2005	229th ACS National Meeting & Exposition, San Diego, CA

PUBLICATIONS & PREPRINTS

♦ PAPERS PUBLISHED IN INTERNATIONAL JOURNALS

1. Jong-Min Kim, **Jin-Young Park**, Hiroshi Muramatsu, Burm-Jong Lee and Sang-Mok Chang, "A study on the affinity of Fe^{2+} and Zn^{2+} for Im-SH self-assembled film on piezoelectric quartz crystal", *Mol. Cryst. Liq. Cryst.*, 349, pp247-250, **2000**.

2. Dae-Sang Han, Shigeru Kurosawa, Hidenobu Aizawa, Minoru Yoshimoto, **Jin-Young Park** and Sang-Mok Chang, "Study to Increase the Sensitivity of QCM Gas-Sensor Coated with Plasma Polymerization Film", *Mol. Cryst. Liq. Cryst.*, 371, pp411-414, **2001**

3. J. M. Kim, **J. Y. Park**, S. H. Song, B. J. Lee, H. Muramatsu and S. M. Chang, "Analysis of Im-SH Self-Assembled Monolayer Formation and Its Interaction with Fe^{2+} and Zn^{2+} Using Quartz Chemical Analyzer", *Sensors & Actuators: Chemical B*, 76, pp74-79, **2001**.

4. J. M. Kim, T. Ohtani, **J. Y. Park**, S. M. Chang and H. Muramatsu, "DC electric-field-induced DNA stretching for AFM and SNOM studies", *Ultramicroscopy*, 91, pp139-149, **2002**

5. Taranekar, P.; **Park, J**.; Patton, D.; Fulghum, T.; Ramon, G.; Bittner, E.; Advincula, R. "Conjugated Polymer Nanoparticles via Intra-molecular Cross-linking of Dendrimeric Precursors" *Adv. Mater.* – in press.

6. Taranekar, P.; Baba, A.; **Park, J.**; Fulghum, T.; Advincula, R. "Dendrimer Precursors for Nanomolar and Picomolar Real-Time SPR/Potentiometric Chemical Nerve Agent Sensing using Electrochemically Cross-linked Ultrathin Films" *Adv. Funct. Mater.* – in press.
7. Deng, S.; Fulghum, T.; Patton, A.; **Jin-Young Park**, J.; Guloy, A.; Advincula R. "Au Nanoparticle-Cored Conjugated Thiophene Dendrimers: Synthesis, Characterization, and Energy Transfer Studies" *Chem. Mater.* – under review.
8. Baba, A.; Jiang, G.; Park, K.; **Park, J.**; Shin, H.; Advincula, R.* "Electro-Nananopatterning of Surface Relief Gratings (SRG)s on Azobenzene Layer-by-Layer Ultrathin Films by Current-sensing Atomic Force Microscopy" *J. Phys. Chem.* – under review.
9. Waenkaew, P.; Taranekar, P.; Baba. A.; Huang, C.; Patton, D.; **Park, J.**; Fulghum, T.; Phanichphant, S.; Advincula, R. "Quantitative Electrochemical Cross-linking of Layer-by-Layer Deposited Precursor Polymer Materials" – To be submitted to *Langmuir.*
10. Taranekar, P.; Shin, H.; **Park, J.**; Advincula, R. "Carbazole Terminated Precursor Dendrimers: LB Film Properties" – to be submitted to *Langmuir*.

♦ PAPERS PUBLISHED IN KOREAN JOURNALS

1. Seong-Hun Song, Jong-Min Kim, Dae-Sang Han, **Jin-Young Park**, Ji-Sun Park and Sang-Mok Chang, "The Effect of Electrolyte on the Viscoelastic Characteristics of Ppy Thin Film Using QCA", J. of The Korean Ind. Eng. Chem., 10(5), pp784-788, **1999**.

2. Hong-Sik Cho, **Jin-Young Park**, Dae-Sang Han, Ji-Sun Park, Haeng-Ja Lee, Kwang Kim and Sang-Mok Chang, "Analysis of the Characteristics of Polyurethane Synthesis Using Quartz Crystal Analyzer", J. of The Korean Sensors Society, 9(1), pp28-35, **2000**.

3. H. J. Lee, H. S. Cho, **J. Y. Park**, S. M. Chang, J. M. Kim, "An Enhanced Cyclic Voltammetry Method for the Dynamic Property Study of Polypyrrole", HWAHAK KONGHAK(J. of The Korean Institute of Chemical Engineers), 38(4), pp443-450, **2000**.

4. **J. Y. Park**, S. W. Han, S. H. Song, J. M. Kim, T. Ohtani, H. Muramatsu, S. M. Chang, "A study on AFM in stretching electric field induced λ-DNA", HWAHAK KONGHAK(J. of The Korean Institute of Chemical Engineers), 40(1), pp100-105, **2002**.

5. S. H. Song, **J. Y. Park**, W. S. Kim, C. Nakamura, J. Miyake, S. M. Chang, "Analysis of Oligopeptide Self-Assembled Monolayer Using XPS and AFM", HWAHAK KONGHAK(J. of The Korean Institute of Chemical Engineers), 41(1), pp 15-19, **2003**.

♦ PAPERS PUBLISHED IN UNIVERSITY PRESS

1. Hong-Sik Cho, Seong-Hun Song, **Jin-Young Park**, Dae-Sang Han and Sang-Mok Chang, "A Study on the Characteristics of carbon vapor deposited quartz crystal in the liquid solution", Annual Report(Dong-A University Press) for Engineering Research, 4(2), pp125-133, **1999**.

2. Hong-Sik Cho, Dae-Sang Han, **Jin-Young Park**, Jong-Min Kim, Ji-Sun Park, Kwang Kim and Sang-Mok Chang, "Application to Interpretation of Polyurethane Synthetic Reaction Using Quartz Crystal", Annual Report(Dong-A University Press) for Engineering Research, 4(2), pp135-145, **1999**.

3. Seong-Hun Song, **Jin-Young Park**, Haeng-Ja Lee, Hong-Sig Cho and Sang-Mok Chang, "Analysis the characteristics of surfactant by QCA", Annual Report(Dong-A University Press) for Environment Research, 22(2), pp111-117, **1999**.

♦ PROCEEDINGS IN INTERNATIONAL CONFERENCE/ACS National Meeting

1. **J. Y. Park**, S. H. Song, J. M. Kim, H. Muramatsu and S. M. Chang, "Development and Application of Carbon/Graphite Quartz Crystal as a Vapor and Liquid Phase Detector", 10th Molecular Electronics & Devices Symposium, P29, **1999**.

2. **J. Y. Park**, J. M. Kim, B. J. Lee and S. M. Chang, "ADSORPTION PROPERTIES OF FE2+ AND ZN2+ IONS ON GOLD ELECTRODE WITH IM-SH SELF-ASSEMBLIED MONOLAYERS", Korea & Japan Joint Forum 99, P-Ⅱ-31, **1999**.

3. D. S. Han, S. Kurosawa, H. Aizawa, **J. Y. Park** and S. M. Chang, "THE STUDY TO INCREASE THE SENSITIVITY OF QCM GAS-SENSOR COATED WITH PLASMA-POLYMERIZED FILM", The 3rd Asian Symposium on Organized Molecular Films for Electronics and Photonies, 9P-05, **2000**.

4. S. M. Chang, **J. Y. Park**, H. J. Lee, J. M. Kim, H. Muramatsu and B. J. Lee, "Analysis of Im-SH Self-

Assembled Monolayer Formation and Its Interaction with Fe^{2+} and Zn^{2+} Using Quartz Crystal Analyzer", International Meeting on Chemical Sensor, P-113, **2000**.

5. S. M. Chang, **J. Y. Park**, H. J. Lee, J. M. Kim, H. Muramatsu and B. J. Lee, "Investigation of Im-SH Self-Assembled Monolayer Formation and Its Application", IEEE-EMBS Asia Pacific Conference on Biomedical Engineering, O-6.1.2, **2000**.

6. S. W. Han, **J. Y. Park**, S. H. Song, J. M. Kim, T. Ohtani, H. Muramatsu, S. M. Chang, "A STUDY ON AFM IN STRETCHING ELECTRIC FIELD INDUCED λ-DNA", 12th Molecular Electronics & Devices Symposium, P-PC-21, **2001**.

7. **Park, Jin Young**; Patton, Derek; Liu, Ming; Taranekar, Prasad; Mays, Jimmy; Dadmun, Mark; Advincula, Rigoberto. Adsorption of bifunctionalized poly(2-vinylpyridine)-polystyrene- poly(2-vinylpyridine); characterization by AFM. Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2006), 47(1), 57-58.

8. Advincula, Rigoberto C.; Patton, Derek L.; **Park, Jin Young**; Knoll, Wolfgang. Multiply-bound polymer chains of end-functionalized telechelics and block copolymers: A surface adsorption study by quartz crystal microbalance methods. Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States, March 26-30, 2006 (2006).

9. Park, Yushin; Taranekar, Prasad; **Park, Jin Young**; Advincula, Rigoberto C. Direct synthesis of CdSe nanoparticles in dendron boxes. PMSE Preprints (2006), 94 343-344.

10. Shin, Hoon-Kyu; **Park, Jin Young**; Taranekar, Prasad; Fulghum, Timothy M.; Baba, Akira; Park, Yu-Shin; Advincula, Rigoberto. Nanopatterning of carbazole terminated poly(aryl ether) dendrimers by current sensing AFM. Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2006), 47(1), 523-524.

11. **Park, Jin Young**; Patton, Derek; Liu, Ming; Mays, Jimmy; Dadmun, Mark; Advincula, Rigoberto. Adsorption of P2VP-dPS-P2VP triblock copolymers onto reactive monolayers: towards multiply bound polymer chains. Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2005), 46(1), 501-502.

12. Baba, Akira; **Park, Jin Young**; Jiang, Guoqian; Taranekar, Prasad; Huang, Chengyu; Advincula, Rigoberto. Nanopatterning and nano-charge writing in layer-by-layer ultrathin films. PMSE Preprints (2005), 93 351-352.

13. Patton, Derek; **Park, Jin Young**; Liu, Ming; Mays, Jimmy; Dadmun, Mark; Kilbey, Mike; Smith, Grant; Advincula, Rigoberto C. Telechelic polymer velcros or brushes: Synthesis, characterization, and adsorption, studies. Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2005), 46(2), 122-123.

14. Huang, Chengyu; Taranekar, Prasad; **Park, Jin Young**; Park, Yushin; Advincula, Rigoberto C. Ultrathin films of electrochemically-crosslinked poly(vinylcarbazole) and gold nanoparticle as composite material. Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2005), 46(1), 852-853.

15. Taranekar, Prasad; Baba, Akira; **Park, Jin Young**; Fulghum, Tim; Advincula, Rigoberto C. Ultrathin films of electrochemically-crosslinked modified PAMAM dendrimers and PVK as sensor materials for nerve agent detection. PMSE Preprints (2005), 92 86-87.

♦ PROCEEDINGS IN KOREAN CONFERENCE

1. **Jin-Young Park**, Seoung-Hun Song, Jong-Min Kim and Sang-Mok Chang, " Analysis of adsorption property in liquid phase and electrochemical property of carbon/graphite quartz crystal", 98 Joint Meeting Pusan-Kyoungnam Branch of KIChE and Kyushu Branch of SCEJ, p.42, **1998**.

2. **Jin-Young Park**, Seoung-Hun Song, Jong-Min Kim, Hiroshi Muramatsu and Sang-Mok Chang, "Study on adsorption characters and electrochemical properties in solution using carbon/graphite quartz crystal", 99 Spring conference on Chemical Engineering, p.133, **1999**.

3. **Jin-Young Park**, Seoung-Hun Song, Jong-Min Kim, Hiroshi Muramatsu and Sang-Mok Chang, "Development of carbon/graphite quartz crystal and its application in liquid and gas phase", 99 Spring conference on Korean Eng. Chemistry, p.115, **1999**.

4. **Jin-Young Park**, Dae-Sang Han, Hong-Sik Cho, Sang-Mok Chang, Qing Yang, Chikashi Nakamura and Jun Miyake, "Application and immobilization of avidin-biotinylated liposome layers on gold electrode by quartz crystal analyer", 99 Autumn conference on Chemical Engineering, pp.2049-2052, **1999**.

5. **Jin-Young Park**, Dae-Sang Han, Seoung-Hun Song, Haeng-Ja Lee, Hong-Sik Cho and Sang-Mok Chang, "Immobilization of avidin-biotinylated liposomes layers on Au electrode coated quartz crystal", 99 Conference on The Korean Sensors Society, pp.124-127, **1999**.

6. Haeng-Ja Lee, Hong-Sig Cho, Dae-Sang Han, **Jin-Young Park** and Sang-Mok Chang, "Electrochemical Characteristics of Porphyrin Using QCA", 99 Conference on The Korean Sensors Society, pp.116-119, **1999**.

7. **Jin-Young Park**, Dae-Sang Han, Hong-Sik Cho, Qing Yong, Chikashi Nakamura, Jun Miyake and Sang-Mok

Chang, “Application and immobilization of avidin-biotinylated liposome layers on gold electrode by quartz crystal analyzer”, 99 Autumn conference on Chemical Engineering, 5(2), pp.2049-2052, **1999**.

8. Jong-Won Park, Sung-Woong Han, **Jin-Young Park**, Seoung-Hun Song, Hong-Sig Cho and Sang-Mok Chang, “Analysis of self-assembled peptide membrane using XPS and AFM”, 99 Joint Meeting Pusan-Kyoungnam Branch of KIChE and Kyushu Branch of SCEJ, pp.32-35, **1999**.

9. **Jin-Young Park**, Jong-Won Park, Sung-Woong Han, Seoung-Hun Song, Hong-Sig Cho and Sang-Mok Chang, “Immobilization of avidin-biotinylated liposome layers on piezoelectric quartz crystal by self-assembly process”, 99 Joint Meeting Pusan-Kyoungnam Branch of KIChE and Kyushu Branch of SCEJ, pp.56-59, **1999**.

10. Jong-Won Park, Sung-Woong Han, Jung-Hun Kwon, **Jin-Young Park**, Hong-Sig Cho, Haeng-Ja Lee and Sang-Mok Chang, “Analysis of avidin-biotinylated liposome layers immobilized on gold surface using a quartz crystal”, 2000 Conference on The Korean Society for Biotechnology and Bioengineering, pp.546-549, **2000**.

11. **Jin-Young Park**, Hidenobu Aizawa, Shigeru Kurosawa, Dae-Sang Han and Sang-Mok Chang, “The Study for Increasing the Sensitivity of Gas Sensor by Using QC of High Frequency”, 2000 Spring conference on Chemical Engineering, pp.546-549, **2000**.

12. **Jin-Young Park**, Dae-Sang Han, Shigeru Kurosawa and Sang-Mok Chang, “A study on high sensitivity of QCM gas-sensor with plasma-polymerized film”, 2000 Spring conference on Korean Eng. Chemistry, p.62, **2000**.

13. **Jin-Young Park**, Jong-Min Kim, Hiroshi Muramatsu and Sang-Mok Chang, “Stretching λ-phage DNA by voltage control method for DNA analysis with AFM”, 2000 Autumn conference on Chemical Engineering, 6(2), pp.2417-2420, **2000**.

14. Jong-Won Park, Sung-Woong Han, **Jin-Young Park**, Seong-Hun Song, Hong-Sig Cho, Young-Su Cho, Kwang Kim and Sang-Mok Chang, “Real-time cell culture monitoring by Quartz crystal Microbalance and evaluation of proliferation factor”, 2000 Spring conference on Chemical Engineering, 6(2), pp.2421-2424, **2000**.

15. **Jin-Young Park**, Jong-Min Kim, Hiroshi Muramatsu and Sang-Mok Chang, “A analysis on λ-phage DNA stretching by voltage control with AFM”, 2000 Autumn conference on Korean Eng. Chemistry, p.103, **2000**.