YOON, TAE HYUN, Prof., Ph.D

Nanoscale Characterization & Environmental Chemistry Lab.,
Department of Chemistry, College of Natural Sciences,
Hanyang University, Seoul, 133-791, South Korea
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|Homepage: http://openwetware.org/wiki/Yoon_lab (English) and http://ncec.hanyang.ac.kr (Korean)

EDUCATION

Stanford University, CA, USA
Ph. D Major in *Environ. Sci.* / minor in *Environ. Eng.*
Advisor : Prof. Gordon E. Brown Jr. **2004.09**
Thesis Title : Naturally Occurring Organic Compounds at the Mineral-Water Interfaces:
Their interactions with Mineral Surfaces and Impacts on Pollutant Speciation

KAIST, Taejon, South Korea
M. Sc. Department of Chemistry **1994.02**
Advisor : Prof. C. H. Moon
Thesis Title : Eu(III) Luminescence Study of the Eu(III) Binding Sites in Synthetic and Natural Polyelectrolyte

KAIST, Taejon, South Korea
B. Sc. Department of Chemistry **1992.02**
Advisor : Prof. C. H. Moon

PROFESSIONAL EXPERIENCE

Assistant Professor **2005.09 – Present**
Dept. of Chemistry, College of Natural Sciences,
Hanyang University, Seoul, South Korea

Postdoctoral Researcher **2004.10 – 2005.08**
[Stanford Environ. Mol. Sci. Inst.(EMSI), Stanford University, CA, USA]
Supported by Stanford NSF-EMSI (Environmental Molecular Science Institute) on Chemical & Biological Interactions at Environmental Interfaces

Senior Researcher **1997.01 – 1999.08**
[Samsung Advanced Institute of Technology. Kiheung, South Korea]
Analytical Engineering Lab : Responsible for surface analysis (e.g., SIMS) & thermal analysis (e.g., TGA) of electronic industrial materials.

Researcher **1994.07 – 1996.12**
[SK Taeduk Research Institute, Taejon, South Korea]
Environmental Technology Project : Involved in Volatile Organic Compounds (VOC) Assessment & Diesel Soot Exhaust Reduction Projects.

TEACHING EXPERIENCE

Special Topics in Analytical Chemistry (taught in English)
[Graduate Program, Department of Chemistry, Hanyang University]
- Autumn 2009

Advanced Chemometrics (taught in English)
[Graduate Program, Department of Chemistry, Hanyang University]
- Spring 2009

Advanced Analytical Chemistry (taught in English)
[Graduate Program, Department of Chemistry, Hanyang University]
- Autumn 2008/Autumn 2010

Instrumental Analysis I
[Undergraduate Junior/Senior, Department of Chemistry, Hanyang University]
- Spring 2006/Spring 2007/Spring2008

Instrumental Analysis II
[Undergraduate Junior/Senior, Department of Chemistry, Hanyang University]
- Autumn 2006/ Autumn 2007/ Autumn 2008

Instrumental Analysis Lab.
[Undergraduate Junior/Senior, Department of Chemistry, Hanyang University]
- Autumn 2008/ Autumn 2010

Analytical Chemistry
[Undergraduate Sophomore, Department of Chemistry, Hanyang University]
- Spring 2006/Spring 2007/Spring2008/Spring2011

Analytical Chemistry Lab.
[Undergraduate Sophomore, Department of Chemistry, Hanyang University]
- Spring 2006/Spring 2007/Spring2008/Spring2011

General Chemistry
[Undergraduate Freshman, Department of Chemistry, Hanyang University]
- Spring 2006/ Spring 2007/ Spring2008/ Spring 2009/Spring2011
- Autumn 2006/ Autumn 2007/ Autumn 2008/ Autumn 2009

ADVISEE RECEIVED M.S./PH.D DEGREES

[Lee, Song Hee : M. Sc.] **201102**
Thesis title : "Development of novel cell-based assay protocols for the assessments of nanoparticle cytotoxicity" Hanyang University

[Yoo, Hyun Ju : M. Sc.] **201102**
Thesis title : "Development of novel cell-based assays for nanomaterials using flow cytometry and microfluidic image cytometry" Hanyang University

[Lim, Kook Hee : M. Sc.] **[2010.02]**
Thesis title : "Application of Microfluidic Image Cytometry (μFIC) under Static-Mode Exposure Conditions" Hanyang University

Currently working at KCI Co. Ltd.

[Kim, Min Jung : M. Sc.] **[2010.02]**
Thesis title : "Microfluidic Image Cytometry (μFIC) Study on the Quantification of Cell Death Process" Hanyang University

Currently working at KRIBB.

[Park, Chansik : M. Sc.] **[2009.02]**
Thesis title : "Spectroscopic Studies of L-cysteine Adsorption on Aqueous Quantum Dot Colloids" Hanyang University

Currently working at ChoKwang Paint Co. Ltd.

[Kim, Dohyun : M. Sc.] **[2008.02]**
Thesis title : "Characterization & cytotoxicity test of water soluble quantum dot" " Hanyang University

Currently working at Nanobrick Co. Ltd.

[Kim, Jong Yun : M. Sc.] **[2008.02]**
Thesis title : "Orientations of Polycrystalline ZnO at the Buried Interface of Oxide Thin Film Transistors (TFTs): A Grazing Incidence X-ray Diffraction Study" Hanyang University

Currently in Ph.D program of NCEC Lab @ Hanyang University

CURRENT ADVISEE IN GRADUATE PROGRAM

[Kim, Jong Yun : Ph.D] Year of Entry : 2008. 03
[Kwon, Dongwook : M.Sc./Ph.D] Year of Entry : 2007.09
[Park, Jonghun : M.Sc./Ph.D] Year of Entry : 2009.03
[Park, Jaehong : M.Sc./Ph.D] Year of Entry : 2009.03
[Nho, Hyunwoo : M.Sc./Ph.D] Year of Entry : 2010.03
[Jeon, Sookyung : M.Sc.] Year of Entry : 2010.09
[Choi, Seoyeon : M.Sc.] Year of Entry : 2011.03

ACADEMIC SERVICES

[Editor-in-Chief]
"Toxicology and Environmental Health Sciences (ToxEHS)"
[ISSN : 2005-9752 (Print), e-ISSN : 2233-7784 (Online)] **2009 ~ Present**
Journal published by KoEHS and Springer, available at **http://www.springer.com/13530**

[Editorial Board] **[2006.01 ~ 2007.12]**
"ChemWorld" [ISSN : 1225-004x]
Journal published by Korean Chemical Society

[Program Committee] **[2010.08]**
IEEE NANO 2010, Sub-session of Environment/Health/Safety (EHS), Ethical, Legal and Societal Implications (ELSI)

[Secretary General] **[2010.01~]**
Division of Material Chemistry, Korean Chemical Society

[Secretary] **[2009.01 ~]**
Korean Society of Environmental Risk Assessment and Health Science

[Served as reviewer for the following journals] **[2004.10 ~]**
Environ. Sci. Technol./Langmuir/Bull. Kor. Chem. Soc./Geochim. Cosmochim. Acta./Reviews in Environ. Sci. Technol./Journal of Fluorescence

FUNDING GRANTED

12. International Collaboration Program for EU-FP7 participation, Ministry of Education Science and Technology (MEST)
"Nanosafety @ microfluidics" (Principal Investigator) 2010.12~2011.11

11. Research Team for Nanomaterials-Associated Safety Analysis, Korean Food and Drug Agency (KFDA),
As a Principal Investigator of Subprogram "Developments of Novel Technology for In vivo Nanoparticle Toxicity Assays." 2010.06~2011.02

10. International Collaboration Program, Ministry of Education Science and Technology (MEST),
"High resolution *in vivo* molecular imaging study on the nanotoxicity mechanisms in biological system" (Principal Investigator) 2009.05~2011.04

9. Eco-Technopia 21 program, Ministry of Environment,
"Research on the most relavant dosing metric for the ecotoxicity management system of manufactured nanomaterials (091-091-081)" (Principal Investigator) 2009.03~2011.08

8. Nano R&D program, Ministry of Education Science and Technology (MEST),
" Developement of Colloidal Nanoparticle Toxicity Assessment Kit Using *in vitro* Cytotoxicity Test Protocols using Lab-on-a-chip Technology (2008-2968)" (Principal Investigator) 2008.06 ~ 2011.05

7. Research & Education (R&E) Program, Ministry of Education Science and Technology (MEST),
"Study on the Cytotoxic Mechanisms of Nanomaterials using Cell-based Lab-On-a-Chip Technology" (Principal Investigator) 2008.05~2009.02

6. New Faculty Support Program, Korea Research Foundation (KRF), Ministry of Education Science and Technology (MEST),
" Cytotoxicity Mechanism Study of Quantum Dot Nanoparticles Using Microscopic & Spectroscopic Approaches (2007-C00183)" (Principal Investigator) 2007.08 ~ 2008.07

5. Sea Grant, Ministry of Marine Affairs and Fishery.
"Molecular Environmental Toxicity Assessment of Heavy Metals and Environmental Pollutants using *Tigriopus japonicus*" (Collaborator) 2006.12 ~ 2007.11 :

4. Basic Science Research Program, Korea Research Foundation (KRF), Ministry of Education Science and Technology (MEST)
"High-throughput Toxicityassessments of 2D cell Array Lab on a chip aand Automation of Chemical microscopy (2006-C00607)"

(Collaborator) 2006.11 ~ 2007.10.

3. New Faculty Support program, Korea Research Foundation(KRF), Ministry of Education Science and Technology (MEST)
" Applications of synchrotron-based soft x-ray spectromicroscopy techniques in environmental & biological specimen. (2006-C00201)" (Principal Investigator) 2006.07 ~ 2007.06 :

2. Brain Korea 21 (BK21) program, Ministry of Education Science Technology.
"Center for Creative Chemist - HYU Chemistry dept." (Participant) 2006.04 ~ 2013.03 :

1. Atomic Energy Research Program, Ministry of Education Science Technology.
"Neutron reflectivity study on the nanostructures of organic multilayers" (2006-01651)" (Collaborator) 2006.04~2007.06 :

PATENTS

4. [Patent filed (10-2011-0005971), Republic of Korea] **2011**
A Method for the Toxicity Assessment of Nano-Materials using Flow Cytometry

3. [Patent filed (10-2011-0029857) , Republic of Korea] **2011**
An in vitro Method for the Toxicity Assessment of Nano-Materials

2. [Patent filed (10-2009-0133151), Republic of Korea / PCT] **[2009.12]**
Method for Quantitative Analysis of Cell-Death Process Using Absorption-Based Image Cytometry

1. [Patent filed (10-2009-0076436) , Republic of Korea] **[2009.08]**
Microfluidic Cell Chip, Cell Image Analyzing Apparatus and Method for Quantitative Analysis of Cell Using The Same

PUBLICATIONS

[2011]

45. Jong Yun Kim, Hu Young Jeong, Tae Hyun Yoon, Sung-Yool Choi*, Critical role of top interface on the bipolar resistive switching of Al/PEDOT:PSS/Al memory device, (2011***) Current Applied Physics***, In press. DOI :10.1016/j.cap.2010.12.038

[2010]

44. H. Y. Jeong, J. Y. Kim, J. W. Kim, J. O. Hwang, J.-E. Kim, J. Y. Lee, T. H. Yoon, B. J. Cho, S. O. Kim, R.S. Ruoff, S.-Y. Choi* (2010) Graphene Oxide Thin Films for Flexible Nonvolatile Memory Applications. ***Nano Letters,*** Vol. 10, No.11, pp 4381–4386

43. Jaehwan Seo, Dongwook Kwon, Tae Hyun Yoon, Jinho Jung (2010) "Potential Risks of the Natural Nanoparticles from the Acid Mine Drainage and a Novel Approach for Their Toxicity Assessment ", ***Toxicol. Environ. Health. Sci.*** 2 (4), pp 215-220

42. S. K. Mahto, T. H. Yoon, S. W. Rhee*, (2010) "A new perspective on *in vitro* assessment method for evaluating quantum dot toxicity by using microfluidics technology", ***Biomicrofluidics*****,** Vol. 4, No. 3, p 034111

41. S. K. Mahto, T. H. Yoon, S. W. Rhee*, (2010) "Assessment of Cytocompatibility of Surface Modified CdSe/ZnSe Quantum Dots for BALB/3T3 Fibroblast Cells", ***Toxicology In Vitro*****,** Vol. 24, 1070-1077

40. Song Hee Lee, Dongwook Kwon & Tae Hyun Yoon*, (2010) "An Optimized Dispersion of Manufactured Nanomaterials for in vitro Cytotoxicity Assays", ***Toxicol. Environ. Health. Sci.***, Vol.2, No.3, pp 207-213.

39. D. Kwon, S. H. Lee, J. K. Kim and T. H. Yoon* (2010) Dispersion, Fractionation and Characterization of Sub-100 nm P25 TiO2 Nanoparticles in Aqueous Media, ***Toxicol. Environ. Health. Sci.*** Vol.2, No.1, pp 78-85

38. S. K. Mahto, T. H. Yoon, S. W. Rhee, (2010) Cytotoxic Effects of Surface-Modified Quantum Dots on Neuron-like PC12 Cells Cultured inside Microfluidic Devices, ***Biochip J.,*** Vol 4, No.1, pp82-88

37. M. J. Kim, K. H. Lim, H. J. Yoo, S. W. Rhee, T. H. Yoon* (2010) Morphology-based Assessment of Cd^{2+} Cytotoxicity using Microfluidic Image Cytometry (uFIC). ***Lab on a Chip,*** Vol. 10, No. 4, pp 415-417

36. C. Park, T. H. Yoon* (2010) L-Cysteine-Induced Photoluminescence Enhancement of CdSe/ZnSe Quantum Dots in Aqueous Solution. ***Colloid Surfaces B***: Vol. 75, No. 2, pp 472-477

35. J. K. Kim, C. S. Yoon, T.H. Yoon, K. Choi (2010) Phototoxicity of CdSe/ZnSe quantum dots with surface coatings of 3-mercaptopropionic acid or tri-n-octylphosphine oxide/gum arabic in Daphnia magna under environmentally relevant UV-B light . ***Aquatic Toxicology,*** Vol. 97, No. 2, pp 116-124

34. H. Y. Jeong, J. Y. Kim, T. H. Yoon, S Choi (2010) Bipolar resistive switching characteristics of poly(3,4-ethylene-dioxythiophene): poly(styrenesulfonate) thin film. ***Current Applied Physics*** Vol. 10, No. 1, pp e46-e49

33. J. Lee, K. Ji, J. Kim, C. Park, K. H. Lim, T. H. Yoon, K. Choi (2010) Acute Toxicity of Two CdSe/ZnSe Quantum Dots with Different Surface Coating in Daphnia magna Under Various Light Conditions. ***Environ. Toxicol***, Vol. 25, No. 6, pp 593–600,

[2009]

32. C. Park, T. H. Yoon* (2009) L-Cysteine Adsorption on Thiol-coated Quantum Dot (QD) in Aqueous Solution : An Implication on the QD Speciation in Biological Media. ***Toxicol. Environ. Health. Sci.*** Vol.1, No.3, pp 151-158

31. S.K.Mahto, T.H.Yoon, H.Shin, S.W.Rhee (2009) Multicompartmented microfluidic device for characterization of dose-dependent cadmium cytotoxicity in BALB/3T3 fibroblast cells, ***Biomedical Microdevices***, vol.11, No.2, p401-411

30. T. H. Yoon, (2009) Applications of Soft X-ray Spectromicroscopy in Material and Environmental Sciences, ***Applied Spectroscopy Reviews,*** Vol 44, 91–122

[2008]

29. S.K.Mahto, T.H.Yoon, S.W.Rhee (2008) Characterizing Cell Death Events Using a Microfluidics-based Method, ***Biochip J***, Vol. 2, No. 4, pp 242-247

28. M. J. Kim, C. Park, K. Choi and T. H. Yoon* (2008) Implications of “Trap Emission” Observed in Quantum Dot Nanoparticles Accumulated in Toxicity Test Organism, *Daphnia Magna,* ***Bull. Korean Chem. Soc.,*** *Vol.29, No 6, 1101-1102*

27. K. Benzerara, G. Morin, T.H. Yoon, J. Miot, T. Tyliszczak, C. Casiot, F. Farges, and G.E. Brown, Jr. (2008) Nanoscale study of As transformations by bacteria in an acid mine drainage system, ***Geochim. Cosmochim. Acta.*** *Vol* 72, No. 16, 3949-3963

26. C. Park, K. H. Lim, D. Kwon and T. H. Yoon*, Biocompatible and Water-Soluble Quantum Dot Nanocolloids Stabilized by Gum Arabic (2008) ***Bull. Korean Chem. Soc.,*** Vol.29, No 6*, 1277-1279*

25. J. Ha, T. H. Yoon, Y. Wang, C. B. Musgrave, and G. E. Brown, Jr, (2008) Adsorption of Organic Matter at Mineral/Water Interfaces: 7. ATR-FTIR and Quantum Chemical Study of Lactate Interactions with Hematite Nanoparticles, ***Langmuir***, vol. 24*,* no. 13, 6683–6692*.*

24. J. Y. Kim, S.-H. Ko Park, H. Y. Jeong, C. Park, S.-Y. Choi, J.-Y. Choi, S.-H. Han, T. H. Yoon* (2008) Orientations of polycrystalline ZnO at the buried interface of oxide thin film transistors (TFTs) : A Grazing Incidence X-ray Diffraction Study, ***Bull. Korean Chem. Soc.,*** Vol. 29, 727

23. C. Park, D. H. Kim, M. J. Kim, and T. H. Yoon* (2008) Preparation, Characterization and Toxicological Impacts of Monodisperse Quantum Dot Nanocolloids in Aqueous Solution, ***Bull. Korean Chem. Soc.*** Vol. 29, 303

22. A. Morshed and T. H. Yoon* (2008) Surfactant induced photostability enhancements of thiol coated quantum dot nanocolloids, ***Bull. Korean Chem. Soc.*** Vol. 29, 249

[2007]

21. W. Lee, R. S. Mane, S.-K. Min, T. H. Yoon, Sung-Hwan Han, S.-H. Lee (2007) Nanocrystalline CdS-water Soluble Conjugated-polymer High performance Photoelectrochemical Cell, ***Appl. Phys. Lett.*** Vol. 90, 263503

[2006]

20. T.H. Yoon, K. Benzerara, S. Ahn, R.G. Luthy, T. Tyliszczak, and G.E. Brown, Jr. (2006) Nanometer-scale chemical heterogeneities of black carbon materials and their impacts on PCB sorption properties: Soft x-ray spectromicroscopy study. ***Environ. Sci. Technol.*** vol 40, No. 19, pp5923 - 5929

19. K. Benzerara, N. Menguy, P.López-García, T. H. Yoon, J. Kazmierczak, T. Tyliszczak, F.Guyot, G. E. Brown, Jr. (2006) Nanoscale detection of organic signatures in carbonate microbialites ***Proc. Ntl. Acad. Sci. U. S. A .*** vol. 103, pp9440-9445

[2005]

18. H. Bluhm, K. Andersson, T. Araki, K. Benzerara, G.E. Brown Jr., J.J. Dynes, S. Ghosal, M.K. Gilles, H.-Ch. Hansen, J. C. Hemminger, A.P. Hitchcock, G. Ketteler, E. Kneedler, J. R. Lawrence, G. G. Leppard, J. Majzlam, B. S. Mun, S. C. B. Myneni, A. Nilsson, H. Ogasawara, D. F. Ogletree, K. Pecher, M. Salmeron, D. K. Shuh, B. Tonner, T. Tyliszczak, T. H. Yoon (2005) Soft X-ray Microscopy and Spectroscopy at the Molecular Environmental Science Beamline at the Advanced Light Source, *In Press*, ***J. Elec. Spec. Rel. Phen.***

17. T. H. Yoon, Thomas P. Trainor, Peter Eng, John Bargar, Gordon E. Brown, Jr. (2005) Trace Metal Ion Partitioning at Polymer Film - Metal Oxide Interfaces: Long-Period X-ray Standing Wave Study. ***Langmuir,*** vol 21, No. 10, pp 4503 -4511

16. Karim Benzerara, T. H. Yoon, N. Menguy, Tolek Tyliszczak, and Gordon E. Brown, Jr.(2005) Nanoscale environments associated with bioweathering of a meteoritic Mg-Fe-pyroxene. ***Proc. Ntl. Acad. Sci. U. S. A .*** vol 102, No. 4, pp 979-982

15. T. H. Yoon, Stephen B. Johnson, Gordon E. Brown, Jr. (2005) Adsorption of organic matter at mineral/water interfaces : IV. Adsorption of Humic Substance at boehmite/ water interface and impact on mineral dissolution, ***Langmuir,*** vol 21, No. 11, pp 5002 -5012

14. Stephen B. Johnson, T. H. Yoon, Gordon E. Brown, Jr (2005) Adsorption of organic matter at mineral/water interfaces: 5. Effects of Adsorbed Natural Organic Matter Analogues on Mineral Dissolution. ***Langmuir,*** vol 21, No. 7, pp 2811-2821

[2004]

13. T. H. Yoon, Stephen B. Johnson, Karim Benzerara, Colin S. Doyle, Tolek Tyliszczak, David Shuh, Gordon E. Brown, Jr. (2004) *In-Situ* Characterization of Aluminum-Containing Mineral-Microorganism Aqueous Suspensions Using Scanning Transmission X-ray Microscopy. ***Langmuir,*** vol 20, No. 24, pp 10361-10366

12. T. H. Yoon, Stephen B. Johnson, Charles B. Musgrave, Gordon E. Brown, Jr (2004) Adsorption of organic matter at mineral/water interfaces: I. ATR-FTIR spectroscopic and quantum chemical study of oxalate adsorbed at boehmite/water and corundum/water interfaces, ***Geochim. Cosmochim. Acta.*** Vol 68, No 22, pp. 4505-4518.

11. T. H. Yoon, Stephen B. Johnson, Gordon E. Brown, Jr (2004) Adsorption of suwannee river fulvic acid on mineral surfaces: An *in-situ* ATR-FTIR study at the boehmite/water interface, ***Langmuir,*** vol 20, No. 14, pp 5655-5658

10. Karim Benzerara, T. H. Yoon, Tolek Tyliszczak, Brent Constantz, Alfred M. Spormann, Gordon E. Brown, Jr.(2004) New Insight into Microbial Calcification: A Scanning Transmission X-ray Microscopy study ***Geobiology,*** vol 2, pp 249-259 .

9. Stephen B. Johnson, T. H. Yoon, Benjamin D. Kocar, Gordon E. Brown, Jr (2004) Adsorption of organic matter at mineral/water interfaces: 2. Outer sphere adsorption on mineral surfaces and implications for dissolution processes. ***Langmuir,*** vol 20, No. 12, pp 4996-5006

8. Stephen B. Johnson, T. H. Yoon, Aaron J. Slowey, Gordon E. Brown, Jr (2004) Adsorption of organic matter at mineral/water interfaces: 3. Implications of surface dissolution for adsorption of oxalate. ***Langmuir,*** vol 20, No. 26, pp 11480-11492***.***

[~ 2000]

7. Soon Jin Oh, Kyong Hwa Song, Dongmok Whang, Kimoon Kim, T. H. Yoon, Hichung Moon, and Joon Won Park (1996) Catalytic Hydrolysis of Phosphate Diesters by Lanthanide(III) Cryptate(2.2.1) Complexes , ***Inorganic chemistry***, Vol 35, No. 13, pp 3780-3785

6. T. H. Yoon, Hichung Moon, Yeong J. Park, Kyoung K. Park (1994) Investigation of metal binding sites on soil fulvic acid using Eu(III) luminescence spectroscopy, ***Environmental Science & Technology***, vol 28, No.12, pp2139

5. S. M. Park, P. J. Chong, T. H. Yoon, H. Moon, J. G. Choi (1994) Anomalous photoacoustic effect from pulsed excitation of Eu(III) ions, ***Journal de physique IV***, vol 4, C7-421

4. C. H. Moon, Y. S. Lee, T. H. Yoon (1994) Variation of trace Cu, Pb, and Zn in sediment and water of an urban stream resulting from domestic effluents, ***Water Research*** vol.28, No 4 pp 985.

3. T. H. Yoon, H. Moon, S. M. Park, J. G. Choi, P. J. Chong (1993) Application of laser induced photoacoustic spectroscopy in the investigation of interaction of Nd(III) with water soluble synthetic polymer, ***Bull. Kor. Chem. Soc***., vol 14, No 5, pp 574.

2. H. Moon, M. H. Lee, T. H. Yoon (1991) Characterization of humic acids from kuye san soil, ***Bull. Kor. Chem. Soc***., vol 12, No 2, pp 153-156.

1. C. H. Moon, Y. S. Lee, T. H. Yoon (1991) Seasonal variation of heavy metal contamination of topsoils in the taejun industrial complex(II), ***Environmental Technology***, vol 12,pp 413.

SELECTED ORAL PRESENTATIONS

[2009.09, Univ. of Vienna, Austria] "High-throughput and High-contents Screening of Nanoparticle Cytotoxicities by using Cell-on-chip Microfluidic Devices.", 4th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials.

[2009.12, Seoul Nat'l Univ., Seoul, Korea] "Research Trends on the Safety Management of Manufactured Nanomaterials" Workshop organized by Korean Department of Environment.

[2009.07, OECD Conference Center, Paris, France] "Recent Advances In Microfluidic Device Applications For Environmental Monitoring And Ecotoxicological Assessments" OECD Conference on Potential Environmental Benefits of Nanotechnology: Fostering Safe Innovation-Led Growth

[2009.04, KIST, Seoul, Korea] "Perspectives on Nanotechnology and Their Impacts on Environment", Workshop - Advanced Risk Assessment of Manufactured Nanomaterials.

[2008.09, Univ. of Birmingham, U.K.] "Spectroscopic Speciation of Colloidal Quantum Dot Nanoparticles under Various Chemical and Biological Environments : Effect of UV radiation and Organic Ligands on Their Colloidal Stability and Cytotoxicity.", 3rd International Conference on the Environmental Effects of Nanoparticles and Nanomaterials.

[2008.04, KIST, Seoul, Korea] "Recent Advances in Nanoparticle Risk Assessment : The First Phase - Physicochemical Characterization & Dosing Metrics Of Engineered Nanomaterials" International Symposium on Recent Advances in Risk Assessment and Environmental Health.

[2007.11, Jeju, Korea] "Spectroscopic Characterization and Risk Assessments of Engineered Nanoparticles : Analytical Chemist's View on Nanotoxicology" The 9th Asian Conference on Analytical science

[2006.06, Daegu, Korea] "Application of Scanning Transmission X-ray Microscopy (STXM) in Environmental and Biological Chemistry" SRI2006, The 9th International Symposium on Synchrotron Radiation Instrumentation