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Research Associate
Civil and Environmental Engineering
Stanford University

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Education

- Doctor of Philosophy**, Environmental Engineering and Science, Stanford University, Stanford, CA, USA
Thesis: *Field Application of Activated Carbon Amendment for In-situ Stabilization of Polychlorinated Biphenyls in Marine Sediment*
Advisor: Richard G. Luthy June 2009
- Master of Science**, Environmental Engineering and Science, Stanford University, Stanford, CA, USA
Advisor: Richard G. Luthy June 2005
- Master of Science**, Organic Chemistry, Seoul National University, Seoul, Korea
Thesis: *Cleavage of Avidin with Cyclen-Containing Biotin Derivatives*
Advisor: Junghun Suh February 2002
- Bachelor of Science**, Chemistry, Seoul National University, Seoul, Korea
Graduated Cum Laude February 2000
- Seoul Science High School**, Seoul, Korea February 1996

Research Experiences

- Researcher: Assessment of Natural Attenuation Process and Evaluation of Impact of Bioturbation**, *Environmental Remediation: Sediment Management and Restoration*, Eni S.p.A., Italy 2011-present
- Researcher and Project Manager: Analytical Method Development for Alkylated PAHs, Mass Transfer Modeling, Sediment Column Study of In-situ AC Amendment**, *In-situ Remediation of Petroleum Hydrocarbon Impacted Sediments: Advancing the State-of-the-Art*, Chevron Energy Technology Company, USA 2010-present
- Researcher and Project Manager: Mass Transfer Modeling, Assessment of Long-term Effectiveness of AC Amendment**, *Long-term Risk Reduction from Activated Carbon Treatment of Sediment*, Strategic Environmental Research and Development Program Project ER-1552 Add-on, US Department of Defense (DoD), USA 2009-present
- Research Assistant: Inverse Modeling of Heat Transfer**, *Measurement and Modeling of Ecosystem Risk and Recovery for In-situ Treatment of Contaminated Sediments*, Strategic Environmental Research and Development Program Project ER-1552, US DoD, USA 2007-2009
- Research Assistant, Project Manager, and Project Quality Assurance Manager: Validation of Benefits and Minimal Adverse Impacts by In-situ AC Amendment in Field**, *Field Testing of Activated Carbon Mixing and In-situ Stabilization of PCBs in Sediment at Hunters Point Shipyard Parcel F San Francisco Bay, California*, Environmental Security Technology Certification Program Project ER-0510, US DoD, USA 2005-2008
- Research Assistant: Field Monitoring Tool Development, Validation of Concept & Feasibility**, *Hunters Point Shipyard Parcel F Treatability Study*, Naval Facilities Engineering Command Project, US Navy, USA 2004-2005
- Research Assistant: Synthesis of Artificial Protease**, *Investigation and Application of Molecular Recognition Based on Model Compounds*, Brain Korea 21 Project, Korea 2000-2002

Teaching Experiences

- Lecturer (proposer & creator)** of *CEE 273s Chemical Transformation of Environmental Organic Contaminants*, Department of Civil and Environmental Engineering, Stanford University, Stanford, CA, USA Spring 2011
- Guest Lecturer** of *CEE 276e Environmental Toxicants*, Department of Civil and Environmental Engineering, Stanford University, Stanford, CA, USA Spring 2008

Teaching Assistant of *CEE 270 Movement, Fate, and Effects of Contaminants in Surface Waters and Groundwater*, Department of Civil and Environmental Engineering, Stanford University, Stanford, CA, USA Fall 2004

Full Time Teaching Assistant of Department of Chemistry, Seoul National University, Seoul, Korea August 2002 - July 2003

Teaching Assistant of *Chemistry Laboratory*, Seoul National University, Seoul, Korea Spring 2001

Teaching Assistant of *Summer School for International Chemistry Olympiad*, The Korean Chemical Society, Seoul, Korea Summer 2000

Honors, Awards, and Recognition

Certificate of Appreciation from American Chemical Society Publications in recognition of contribution and dedicated service in the peer review 2012/2013

Stanford Graduate Fellowship in Science and Engineering, Gabilan Fellowships, Stanford University, CA, USA 2005-2008

Award of Excellence Environmental Chemistry Division, American Chemical Society, USA Sep 2005

Graduate Study Abroad Scholarship Korea Science and Engineering Foundation, Korea 2003-2005

Brain Korea 21 Fellowship Brain Korea 21 Project, Korea 2000-2002

Appreciation Plaque, dedicated service for ChemWorld Periodical The Korean Chemical Society, Korea 2001

Seoul National University Honor Scholarship (partial & full tuition waiver) Seoul National University, Korea 1996-2000

Publications

Cho, Y.-M.; Werner, D.; Janssen, E, M.-L.; Luthy, R. G., *In-situ* treatment for control of hydrophobic organic contaminants using sorbent amendment, Chapter 11 in *Process, Assessment and Remediation of Contaminated Sediment*, SERDP ESTCP Remediation Technology, Vol.6, SERDP ESTCP, **2014**

Choi, Y; Cho, Y.-M; Luthy, R. G., In-Situ Sequestration of Hydrophobic Organic Contaminants in Sediments under Stagnant Contact with Activated Carbon: 2. Column Studies. *Environ. Sci. Technol.*, **2014**, 48(3), 1843-1850.

Choi, Y; Cho, Y.-M; Luthy, R. G., In-Situ Sequestration of Hydrophobic Organic Contaminants in Sediments under Stagnant Contact with Activated Carbon: 1. Column Studies. *Environ. Sci. Technol.*, **2014**, 48(3), 1835-1842.

Lin, D.; Cho, Y.-M.; Werner, D.; Luthy, R. G., Bioturbation Delays Attenuation of DDT by Clean Sediment Cap but Promotes Sequestration by Thin-Layered Activated Carbon. *Environ. Sci. Technol.*, **2014**, 48(2), 1175-1183.

Choi, Y; Cho, Y.-M; Luthy, R. G., Polyethylene-water partitioning coefficients for parent- and alkylated-polycyclic aromatic hydrocarbons and polychlorinated biphenyls. *Environ. Sci. Technol.*, **2013**, 47(13), 6943-6950.

Choi, Y; Cho, Y.-M; Gala, W. R.; Luthy, R. G., Measurement and Modeling of Activated Carbon Performance for the Sequestration of Parent- and Alkylated-Polycyclic Aromatic Hydrocarbons in Petroleum-Impacted Sediments. *Environ. Sci. Technol.*, **2013**, 47 (2), 1024-1032.

Cho, Y.-M; Werner, D.; Choi, Y.; Luthy, R. G., Long-term Monitoring and Modeling of the Mass Transfer of Polychlorinated Biphenyls in Sediment Following Pilot-Scale after Field Application of Activated Carbon Amendment in Marine Sediment. *Journal of Contaminant Hydrology*, **2012**, 129130(15), 25-37.

Cho, Y.-M.; Werner, D.; Moffett, K. B.; Luthy, R. G., Assessment of Advective Porewater Movement Affecting Mass Transfer of Hydrophobic Organic Contaminants in Marine Intertidal Sediment. *Environ. Sci. Technol.* **2010**, 44 (15), 5842-5848.

Cho, Y.-M.; Ghosh, U.; Kennedy, A. J.; Grossman, A.; Ray, G.; Tomaszewski, J. E.; Smithenry, D. W.; Bridges, T. S.; Luthy, R. G., Field Application of Activated Carbon Amendment for *In-situ* Stabilization of Polychlorinated Biphenyls in Marine Sediment. *Environ. Sci. Technol.* **2009**, 43 (10), 3815-3823.

Cho, Y.-M.; Smithenry, D. W.; Ghosh, U.; Kennedy, A. J.; Millward, R. N.; Bridges, T. S.; Luthy, R. G., Field Methods for Amending Marine Sediment with Activated Carbon and Assessing Treatment Effectiveness. *Marine Environmental Research* **2007**, 64, 541-555.

Tomaszewski, J. E.; Smithenry, D. W.; Cho, Y.-M.; Luthy, R. G.; and Lowry G. V, et al., Treatment and Containment of Contaminated Sediments, Chapter 3 in *Assessment and Remediation of Contaminated Sediments*, NATO Science Series, Volume 73, Springer-Verlag, Dordrecht, Netherlands, **2006**.

Presentations

Choi, Y.; Cho, Y.-M.; Luthy, R. G., Contaminant Mass Transfer Model to Assess the Effectiveness of In-situ Activated Carbon Treatment in Sediments, SETAC North America 34th Annual Meeting, Nashville, TN, **2013**.

Lin, D.; Cho, Y.-M.; Luthy, R. G.; Eek, E.; Oen, A., Assessing Recovery from DDT-Contaminated Sediment in Freshwater Lake in Europe, SETAC North America 34th Annual Meeting, Nashville, TN, **2013**.

Lin, D.; Cho, Y.-M.; Werner, D.; Luthy, R. G., Bioturbation affects on natural attenuation and in-situ remediation with thin layer AC application, SETAC Europe 23rd Annual Meeting, Glasgow, UK, May 12-16 **2013**.

Choi, Y.; Cho, Y.-M.; Luthy, R. G., Effect of Activated Carbon Amendment for the Treatment of Parent- and Alkylated-Polycyclic Aromatic Hydrocarbons in a Petroleum-Impacted Sediment under Stagnant Conditions, SETAC North America 33rd Annual Meeting, Long Beach, CA, **2012**.

Oen, A.; Beckingham, B.; Cho, Y.-M.; Werner, D.; Cornelissen, G.; Ghosh, U.; Luthy, R.G., The Influence of Field Aging of Activated Carbon in Sediment on PCB Sorption in Field Trials, SETAC Europe 22nd Annual Meeting, Berlin, Germany, **2012**.

Cho, Y.-M.; Choi, Y.; Werner, D.; Luthy, R. G., Hunters Point seven-year narrative: In-situ sequestration of HOCs in sediment by activated carbon sorbent amendment. Oral presentation, 243th American Chemical Society (ACS) National Meeting. San Diego, **2012**.

Choi, Y.; Cho, Y.-M.; Janssen, E. M.-L.; Werner, D.; Luthy, R. G., Long Term Risk Reduction from Activated Carbon Treatment of Sediment, Partners in Environmental Technology Technical Symposium & Workshop, Washington D.C., **2011**.

Choi, Y.; Cho, Y.-M.; Luthy, R. G., Assessing Bioavailability of Parent- and Alkylated-Polycyclic Aromatic Hydrocarbons (PAHs) Using Polyethylene Passive Samplers in Petroleum Oil-Impacted Sediment Treated by Activated Carbon, SETAC North America 32nd Annual Meeting, Boston, MA, **2011**.

Luthy, R. G.; Cho, Y.-M.; Janssen, E. M.-L.; Kim, E.-A. In-place Management of Sediment Contaminants: Advances in Modeling Performance, Assessing Bio-uptake, and Designing New Sorbents, NIH, Superfund Research Program, Risk E-Learning Web seminar, January 19, **2011**.

Choi, Y.; Cho, Y.-M.; Janssen, E. M.-L.; Werner, D.; Luthy, R. G., Long Term Risk Reduction from Activated Carbon Treatment of Sediment, Partners in Environmental Technology Technical Symposium & Workshop, Washington D.C., **2010**.

Janssen, E. M.-L.; Cho, Y.-M. et al., Measurement and Modeling of Ecosystem Risk and Recovery for *In-situ* Treatment of Contaminated Sediments, Partners in Environmental Technology Technical Symposium & Workshop, Washington D.C., **2010**.

Cho, Y.-M.; Werner, D.; Luthy, R. G.; Modeling *In-situ* Application of Activated Carbon to Sequester Hydrophobic Organic Compounds in Sediments, Invited Paper, 239th American Chemical Society (ACS) National Meeting. San Francisco, CA, **2010**.

Cho, Y.-M.; Janssen, E. M.-L.; Werner, D.; Luthy, R. G., Long Term Risk Reduction from Activated Carbon Treatment of Sediment Partners in Environmental Technology Technical Symposium & Workshop, Washington D.C., **2009**.

Janssen, E. M.-L.; Cho, Y.-M.; Thompson, J.; Luoma, S.N.; Luthy, R. G.; Measurement and Modeling of Ecosystem Risk and Recovery for In Situ Treatment of Contaminated Sediment, International Network for Sediment Research, University of Newcastle, UK, Workshop May 29-30, **2009**.

Luthy, R. G.; Cho, Y.-M.; Ghosh, U.; Kennedy, A. J.; Bridges, T. S. Field Application of Activated Carbon Amendment for In-situ Stabilization of PCBs in Sediment, American Chemical Society 237th Annual Meeting, Division of Environmental Chemistry, Symposium in Honor of James O. Leckie, Salt Lake City, UT, March 22-26, **2009**.

Cho, Y.-M.; Luthy, R. G.; Ghosh, U.; Kennedy, A. J.; Bridges, T. S. Field Testing of Activated Carbon Mixing and In-situ Stabilization of PCBs in Sediment, Partners in Environmental Technology Technical Symposium & Workshop, Washington D.C., December 2-5, **2008**.

Janssen, E.M.-L.; Cho, Y.-M.; Tomaszewski, J. E.; Ahn, S.W.; Luthy, R. G.; Thompson, J.; Luoma, S.N. Measurement and Modeling of Ecosystem Risk and Recovery for In Situ Treatment of Contaminated Sediments, Gordon Research Conference on Environmental Sciences, Holderness School, NH, June 22-26, **2008**.

Luthy, R. G.; Cho, Y.-M.; Kennedy, A. J.; Bridges, T. S. ;Ghosh, U. Field Testing of Activated Carbon Mixing and In-situ Stabilization of PCBs in Sediment, International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA, May 19-22, **2008** [invited].

Cho, Y.-M.; Smithenry, D. W.; Ghosh, U.; Kennedy, A. J.; Millward, R. N.; Bridges, T. S.; Luthy, R. G. Field Testing of Activated Carbon Mixing and In-situ Stabilization of PCBs in Sediment, Partners in Environmental Technology Technical Symposium & Workshop, Washington D.C., **2006**.

Cho, Y.-M.; Smithenry, D. W.; Ghosh, U.; Kennedy, A. J.; Millward, R. N.; Bridges, T. S.; Luthy, R. G. Application of Activated Carbon Amendment for In-situ Stabilization of PCBs in Sediment: Field-Scale Studies, CALFED Bay-Delta Program Science Conference, Sacramento, CA, **2006**.

Cho, Y.-M.; Smithenry, D. W.; Luthy, R. G., Preliminary Field Testing of Activated Carbon Mixing and In-situ Stabilization of PCBs in Sediment. Poster presentation, 230th American Chemical Society (ACS) National Meeting. Washington D.C., **2005**.

Cho, Y.-M.; McLeod, P.B.; Smithenry, D.W., Reducing PCB bioaccumulation in the lab and field. Invited presentation, Environmental Engineering and Science Lecture Series, Department of Civil and Environmental Engineering, Stanford University, Stanford, CA, **2004**.

Academic Services

Advisor, The Sustainable Remediation Forum (SURF), Student Chapter at Stanford University	since 2012
Peer Reviewer, Environmental Science and Technology, American Chemical Society	since 2009
EES Seminar Committee, Department of Civil and Environmental Engineering, Stanford University	2007-2008

Extracurricular Activities

President of Stanford Korean Tennis Club, KSAS, Stanford University	2005
Vise President of Stanford Korean Tennis Club, KSAS, Stanford University	2004
Interviewer of ChemWorld Periodical, The Korean Chemistry Society	2000

Website designer & content developer & webmanager:

J. Suh group, Seoul National University http://plaza.snu.ac.kr/jhsuh/	2000-2002
Department of Chemistry, Seoul National University http://chem.snu.ac.kr/	2002-2003
R. G. Luthy group, Stanford University http://www.stanford.edu/group/luthygroup/	since 2005

Languages

Native in Korean, fluent in English

Skills

Analytical Instruments

HPLC, GC, GC-MS, UV-VIS, NMR, IR, MALDI TOF, BET analyzer

Computational

OS: Window, Mac, Linux, Unix,

Software: MicroSoft Office, Adobe Photoshop & Flash, L^AT_EX, R, MatLab, SimaPro, ArcGIS

Programming: Java, C

Webdesign: HTML, MSSQL, MySQL, PHP