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EDUCATION:

1987 PhD Environmental Chemistry: University of Nebraska-Lincoln
1991 MS Courses, Civil Engineering (Environmental): University of Virginia
1977 B.S. Ag. Engineering: University of Baghdad

EMPLOYMENT:

1998 - present US Environmental Protection Agency, ORD, National Risk Management Research Laboratory, Cincinnati, Ohio
Research Chemist
University of Cincinnati, Department of Civil and Environmental Engineering, Cincinnati, Ohio
1996 - 1998 *Research Assistant Professor*
University of Cincinnati, Department of Civil and Environmental Engineering, Cincinnati, Ohio
1991 - 1996 *Research Associate and Adjunct Assistant Professor*

AREAS of RESEARCH:

- 1. Electrochemical Degradation of Organics**
- 2. Waste Management and Leach Tests**
- 3. Nano Materials Characterization, Fate, and Transport**
- 4. Mine Waste Characterization and Treatment**

PUBLICATIONS: Peer-Reviewed (Recent Partial Listing):

1. Agarwal, S.; and Al-Abed, S.R. et al.(2008). "Assessment of the Functionality of a Pilot-scale Reactor and its Potential for Electrochemical Degradation of Calmagite, a Sulfonated Azo-dye". *Chemosphere*, 73 (5), 837-843.
2. Choi, H., and Al-Abed, S. et al. (2008). "Synthesis of Reactive Nano Fe/Pd Bimetallic System-Impregnated Activated Carbon for the Simultaneous Adsorption and Dechlorination of PCBs" *Chemistry of Materials*, 20 (11), 3649-3655
3. Fang, Y., Al-Abed, S. R. (2008). "Dechlorination Kinetics of Monochlorobiphenyls by Fe/Pd: Effects of Solvent, Temperature, and PCB Concentration," *Applied Catalysis B: Environmental* (78) 371-380
4. Fang, Y., Al-Abed, S. R. (2008). "Electrocatalytic Dechlorination of a PCB Congener at a Palladized Granular-Graphite-Packed Electrode: Reaction Equilibrium and Mechanism" *Applied Catalysis B: Environmental* (80) 327-334
5. Fang, Y., Al-Abed, S. R. (2008) "Correlation of 2-chlorobiphenyl dechlorination by Fe/Pd with iron corrosion at different pH". *Environmental science & technology*, 42 (18), 6942-6948
6. Agarwal, S.; Cluxton, P.; Kemper, M.; Dionysiou, D.D.; Al-Abed, S.R.(2008) "Assessment of the Functionality of a Pilot-scale Reactor and its Potential for Electrochemical Degradation of Calmagite, a Sulfonated Azo-dye". *Chemosphere*, 73 (5), 837-843
7. Choi, H., and Al-Abed, S.R. et. al. (2009) "Adsorption and Simultaneous Dechlorination of PCBs by GAC Impregnated with ZVI/Pd Bimetallic Particles: Mechanistic Aspects and Reactive Capping Barrier Concept" *Environmental Science and Technology*, 43 (2), 438-493. (2nd Runner-Up Best paper in ES&T)
8. Rastogi, A., Al-Abed, S.R. (2009). "Sulfate Radicals Based Ferrous-Peroxymonosulfate Oxidative System for PCBs Degradation in Aqueous and Sediment Systems". *Applied Catalysis B: Environmental*, 85 (3-4), 171-179.
9. Rastogi, A., Al-Abed, S.R. (2009). "Effect of Inorganic, Synthetic and Naturally Occurring Chelating Agents on Fe(II) Mediated Advanced Oxidation of Chlorophenols". *Water Research*, 43 (3), 684-694.
10. Agarwal, S., Al-Abed, S.R. (2009). "Reactivity of Substituted Chlorines and Ensuing Dechlorination Pathways of Select PCB congeners with Pd/Mg Bimetallics". *Environmental Science & Technology* 43, 915-921.
11. Choi, H., Al-Abed, S.R. (2009). "PCB Congener Sorption to Carbonaceous Sediment Components: Macroscopic Comparison and Characterization of Sorption Kinetics and Mechanism". *Journal of Hazardous Materials* 165, 860-866.
12. Yang, Q., Choi, H., Al-Abed, S.R., Dionysiou, D.D. (2009). "Iron-Cobalt Nano Bimetallic Catalysts: Heterogeneous Peroxymonosulfate Activation, Cobalt Leaching, and Ferromagnetic Properties for Environmental Applications". *Applied Catalysis B: Environment* 88, 462-469.
13. Agarwal, S.; Al-Abed, S.R. (2009). "Impact of Organic Solvents and Common Anions on 2-Chlorobiphenyl Dechlorination Kinetics with Pd/Mg". *Applied Catalysis B: Environmental* Volume 92, Issues 1-2, 19, Pages 17-22

14. Sung, H. J., S. R. Al-Abed, et al. (2009). "Influence of carboxymethyl cellulose for the transport of titanium dioxide nanoparticles in clean silica and mineral-coated sands." *Environmental Science and Technology* 43(13): 4954-4959.
15. Al-Abed S.R. et. al. (2009). "Investigation of a Mercury Speciation Technique for Flue Gas Desulfurization Materials". *Journal of the Air and Waste Management Association*, Vol 59: 972-979.
16. Bimetallic System-Impregnated Activated Carbon for the Simultaneous Adsorption and Dechlorination of PCBs" *Chemistry of Materials*, 20 (11), 3649-3655
17. Choi, H., Al-Abed, S, and Agarwal S., Effects of ageing and oxidation of palladized iron embedded in activated carbon on the dechlorination of 2-chlorobiphenyl, *Environmental Science and Technology* 43 (2009) 4137-4142.
18. Agarwal, S., S. R. Al-Abed, et al. (2009). "A feasibility study on Pd/Mg application in historically contaminated sediments and PCB spiked substrates." *Journal of Hazardous Materials* 172(2-3): 1156-1162
19. Agarwal, S., S. R. Al-Abed, et al. (2009). "Impact of organic solvents and common anions on 2-chlorobiphenyl dechlorination kinetics with Pd/Mg." *Applied Catalysis B: Environmental* 92(1-2): 17-22.
20. Choi, H. and S. R. Al-Abed (2010). "Effect of reaction environments on the reactivity of PCB (2-chlorobiphenyl) over activated carbon impregnated with palladized iron." *Journal of Hazardous Materials* 179(1-3): 869-874.
21. Choi, H., S. R. Al-Abed, et al. (2010). Chapter 8 TiO₂-Based Advanced Oxidation Nanotechnologies for Water Purification and Reuse. *Sustainability Science and Engineering*. C. E. Isabel and I. S. Andrea, Elsevier. Volume 2: 229-254.
22. Jegadeesan, G., S. R. Al-Abed, et al. (2010). "Arsenic sorption on TiO₂ nanoparticles: Size and crystallinity effects." *Water Research* 44(3): 965-973.
23. Patricio X. Pinto, Souhail R. Al-Abed, Edwin Barth, Catherine Loftspring, James Voit, Patrick Clark, Anastasios M. Ioannides. "Environmental impact of the use of contaminated sediments as partial replacement of the aggregate used in road construction" *Journal of Hazardous Materials*, Volume 189, Issues 1-2, 15 May 2011, Pages 546-555
24. Patricio X. Pinto, Souhail R. Al-Abed, David J. Reisman. "Biosorption of heavy metals from mining influenced water onto chitin products" *Chemical Engineering Journal*, Volume 166, Issue 3, 1 February 2011, Pages 1002-1009