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WORK ADDRESS

Associate Professor

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EDUCATION

- **Alexandria University**, Faculty of science, Egypt, C/O **Maryland University**, College Park, USA, College of Agriculture and Natural Resources
Doctor of Philosophy (Molecular Microbial Ecology), **2003**
Thesis titled “**Ecological and Molecular Studies on the Role of Rhizosphere Microflora on Phytoremediation Efficiency**”
- **Cairo University**, Faculty of Science, Egypt, C/O **Minnesota University**, St Paul, Microbial Ecology Dept., USA.
Master of Science (Microbial Ecology), **1996**
Thesis titled “**Studies on desert truffles**”
- **Zagazig University**, Faculty of Science, Egypt
Bachelor of Science (Biology) with excellent degree and honor, **1990**.

Employment and study history and responsibility

June 08- till now	Mubarak City for Scientific Research & Technology Applications (MUCSAT) , Genetic Engineering Institute and Biotechnology Research Institute (GEBRI), Egypt Associate Professor in the Dept., of Environmental Biotechnology.
Mar.,09- Mar.,10	Yonsei University , Graduate School of health and Environment, S. Korea, Post-Doctoral Research Fellow , Dept., of Environmental Engineering. Prof. Byong-Hun Jeon E.mail: bhjeon@yonsei.ac.kr
April,03-June 08	MUCSAT, GEBRI, Egypt Assistance Professor , Environmental Biotechnology Department

- Oct.,07-March09 **MUCSAT, Egypt**
Executive Director of Quality Unit, Central Lab for Scientific services and Environmental Assessment
- April, 05-Aug.,05 **Maryland University, College Park, USA**
Visiting Professor, Agriculture and Natural Science Dept. C/O. Prof. Dr. Scott J. Angle E-mail: jangle@uga.edu
- Sep. 02- April 03 **MUCSA, GEBRI, Egypt**
Research Assistant at (GEBRI) Environmental Biotechnology Dept.
- 2001- 2002 **Maryland University, College Park, USA**
Faculty Research Assistant, Department of Cell Biology and Molecular Genetics C/O Prof. Dr. Elena De Campillo, E-mail: edelcamp@umd.edu
- 2000 – Sep., 2002 **Maryland University, College Park, USA**
Faculty Research Assistant, University of Maryland, College Park, Department of Agriculture and Natural Resource Sciences, C/O Prof Dr. Scott Angle, E-mail: jangle@uga.edu
- 2000-Sept., 2002 **United State Department of Agriculture (USDA), Beltsville MD, USA**
Research visitor Environmental Chemistry Lab, C/O Prof. Dr. Rufus Chaney, E-mail: chaneyr@ba.ars.usda.gov
- 2000-Sept., 2002 **United State Department of Agriculture (USDA), Beltsville MD, USA**
Research visitor, Soybean Genomic and Improvement Lab. Prof. Dr. Peter van Berkum E-mail: pbarkum@ba.ars.usda.gov
- 1998 – Aug. 2000 **MUCSAT, GEBRI, Egypt**
Research Assistant, Environmental Biotechnology Dept.
- 1996 - 1998 **National Research Center (NRC), Cairo, Egypt**
Research Assistant, Botany and soil Microbiology Dept.
- 1995 - 1996 **NRC, Cairo, Egypt**
Assistant Researcher, Botany and soil Microbiology Dept.
- 1994 – June, 95 **Minnesota University, St. Paul, USA**
Pre-Doctoral Assistant, Microbial Ecology Lab., Prof. Dr. Michael J. Sadowsky, E-mail: sadowsky@umn.edu
- 1991 -1994 **NRC, Egypt**
Assistant Researcher, Botany and Soil Microbiology Dept.
- 1990 - 1991 **Cairo University, Faculty of Science, Egypt**
MSc. candidate, Scholarship for Master study funded for honor

student from Academy of Scientific Research and Technology

RESEARCH STREAMS AND STUDIES

My research interests cover the following aspects: 1) Biological nitrogen fixation 2) Developing bioremediation technology for the cleanup organic and inorganic contaminated environment 3) Molecular Microbial Ecology (Biodiversity) 4) Bio-fuel production (Hydrogen, Biodiesel and Bio-ethanol).

My research program is conducted in an interdisciplinary approach, combining laboratory, field and theoretical approaches, and at multiple spatial and temporal scales.

PUBLICATIONS 2005-2010

- 1- Min-Kyu Ji, **R.A.I. Abou-Shanab**, Moonis Ali Khan, Amit Bhatnagar, Hocheol Song, Yunchul Cho, Byong-Hun Jeon, (2010), Nitrate and ammonium ions removal from groundwater by a hybrid system of zero-valent iron combined with adsorbents, *Fresenius Environmental Bulletin*, *In Press*
- 2- Min-Kyu Ji, Yong-Tae Ahn, Moonis Ali Khan, **R.A.I. Abou-Shanab**, Jae-Young Choi, Hocheol, Song, Byong-Hun Jeon (2010). Removal of nitrate and ammonium ions from livestock wastewater by hybrid systems composed of zero-valent iron and adsorbents, submitted to *Journal of Hazardous Materials*
- 3- Jae-Hoon Hwang, Jeong-A Choi, Reda A.I. Abou-Shanab, Booki Min, Hocheol Song, Yong Je Kim, Eung Seok Lee, Byong-Hun Jeon (2010). Bio-hydrogen production using rotten fruits and sewage sludge via a two-stage fermentation system submitted to *Bioresource Technology*.
- 4- Moonis Ali Khan, Seong-wook Kim, Rifaqat Ali Khan Rao, **R.A.I. Abou-Shanab**, Amit Bhatnagar, Hocheol Song, Byong-Hun Jeon, (2010). Adsorption studies of DCM on some commercially available GACs: Effect of kinetics, thermodynamics and competitive ions, *Journal of Hazardous Materials*, 178, 963-972.
- 5- Eva Kumar, Amit Bhatnagar, Jeong-A Choi, Umesh Kumar, Booki Min, Yongje Kim, Hocheol Song, Ki Jung Paeng, Yong Mee Jung, Min Jang, **R.A.I. Abou-Shanab**, Byong-Hun Jeon, (2010), Perchlorate removal from aqueous solutions by granular ferric hydroxide (GFH), *Chemical Engineering Journal*, 159,84-90.
- 6- **Abou-Shanab, R.A.I.**, Jeon,B.H., Song, H., Kim, Y., Hwang, J. (2010). Algae-Biofuel: Potential use ad sustainable alternative green energy. *The Online Journal on Power and Energy Engineering (OJPEE)*, 1(1): 4-6.
- 7- Jae-Hoon Hwang, Jeong-A Choi, **R.A.I. Abou-Shanab**, Amit Bhatnagar, Booki Min, Hocheol Song, Eva Kumar, Jaeyoung Choi, Eung Seok Lee, Yong Je Kim, Sukkee Um, Dae Sung Lee, Byong-Hun Jeon, (2009). Effect of pH and sulfate concentration on hydrogen production using anaerobic mixed microflora. *International Journal of Hydrogen Energy*, 34(24), 9702-9710.
- 8- Jae-Hoon Hwang, Gi-Cheol Cha, Tae-Young Jeong, Dong-Jin Kim, Amit Bhatnagar, Booki Min, Hocheol Song, Jeong-A Choi, Jong-Hak Lee, Dae-Woon Jeong, Hyung-Keun Chung, Jaeyoung Choi, **R.A.I. Abou-Shanab**, Sang En Oh, Byong-Hun Jeon (2009). Effect of COD/SO₄²⁻ ratio and Fe(II) under the variable hydraulic retention time (HRT) on fermentative hydrogen production, *Water Research*, (43), 3525-3533.

- 9- Jae-Hoon Hwang, Jeong-A Choi, **R.A.I. Abou-shanab**, Byong-Hun Jeon, **2009**, Feasibility of fermentative bio-hydrogen production from different organic wastes, submitted to *The Korean Society for New and Renewable Energy*
- 10- **Abou-Shanab R.A. I.**, Angle J.S., Delorme T.A., Chaney R.L., van Berkum, P., Ghazlan H.A., Ghanem K. & Moawad, H. (**2009**). Characterization of Ni-resistant bacteria in the rhizosphere of the hyperaccumulator *Alyssum murale* by 16S rRNA gene sequence analysis. *W. J. Microbiol. Biotechnology* DOI 10.1007/s11274-009-0148-6.
- 11- **Abou-Shanab, R.A.I.**, Ghanem, K.M., Ghanem, N. B. & Al-Kolaibe A.M. (**2008**). The role of bacteria on heavy-metals extraction and uptake by plants growing on multi-metal contaminated soils. *W. J. Microbiol. Biotech*, **24**: 253-262.
- 12- **Abd El-Rahman, R.A., Abou-Shanab, R.A. & Moawad, H.** (**2008**). Mercury Detoxification Using Genetic Engineered *Nicotiana tabacum*, *Global NEST Journal*, **10**:432-438.
- 13- **Abou-Shanab, R.A.I.**, Angle, J.S. & van Berkum, P. (**2007**). **Chromate-tolerant bacteria for enhanced metal uptake by *Eichhornia crassipes* (Mart.).** *Int. J. Phyt.*, **9**: 91-105
- 14- **Abou-Shanab R.A.I.**, van Berkum, P.& Angle, J. S (**2007**). Heavy metal resistant patterns and further genotypic characterization of metal resistant gene (S) in Gram positive and Gram negative bacteria isolated from Ni-rich serpentine soil and the rhizosphere of *Alyssum murale*. *Chemosphere* **68**:360-367.
- 15- **Abou-Shanab R.I.**, Ghazlan H.A., Ghanem K.& Moawad. H. (**2007**). Heavy metals in soils and plants from various metal-contaminated sites in Egypt. *Terrestrial and Aquatic Environmental Toxicology*, 1(1): 7-12 (Print ISSN 1749-0324).
- 16- **Abou-Shanab R.A.I.** (**2007**). Characterization and 16S rDNA Identification of thermo-tolerant bacteria isolated from hot springs. *J. Appl. Sci. Res.* **3(10)**: 994-1000
- 17- **Abou-Shanab, R.A.I.**, N.B. Ghanem, K.M. Ghanem & A.M. Al-Kolaibe (**2007**). Phytoremediation Potential of Crop and Wild Plants for Multi-Metal Contaminated Soils. *Res. J. Agr. Biolog. Sci.* **3(5)**: 370-376.
- 18- **Yusef, H.H., Ghazlan, H.A., El-Ahawany, A., Abou-Shanab, R. & Ahmed, O.** (**2006**). Osmoregulators in Moderately Halophilic Bacteria. *Assiut University Bulletin for Environmental Researches*, **35(2)**:387- 404
- 19- **Abou-Shanab, R.A.I.** & Hafez, E. E. (**2006**). **Chromium reduction and removal using fungi isolated from tannery-effluent polluted soil.** *Egypt. J. Microbiol.* **41**: 75-87.
- 20- **Abou-Shanab, R.A.I.**, Angle, J. S. & Chaney, R. L. (**2006**). Bacterial Inoculants Affecting Nickel Uptake by *Alyssum murale* from Low, Moderate and High Ni soils, submit to *Soil Biol. & Biochem.*, **38(9)**: 2882 - 2889.
- 21- **Abou-Shanab, R.A.I.**, Ghanem, N.B., Ghanem, K.M., & Al-Kolaibe, A.M. (**2006**). Phytoremediation of Multi-metal contaminated soils. *Proceeding of Biotechnology and Sustainable Development: Current Status and Future Scenarios*, 1st International Egyptian-Jordanian Conference, National Research Center, Egypt. pp. 63-70.
- 22- **Abou-Shanab, R.A.I.**, Ghazlan, H. Ghanem, K. Moawad H. (**2005**). Behavior of bacterial populations isolated from rhizosphere of *Diplachne fusca* dominant in industrial sites. *W. J. Microbiol. Biotech.* **21(1-7)**, 1095-1101.

Patents:

- 1- Byong-Hun Jeon, Jae-Hoon Hwang, **R.A.I. Abou-Shanab**, Kim Uounghun, Choi Jaeyoung, Kim Yongie, Choi Chansup, Yang John and Kim Sehyeon (**2010**)

- “Wastewater treatment apparatus and system using bio-filter”, KOREA Patent number 1-1-2010-0102058-34.
- 2- Byong-Hun Jeon, Booki Min, Hocheol Song, Jae-Hoon Hwang, Dong Hun Kim, **R.A.I. Abou-Shanab**, (2009) "Multiple energy recovery and carbon control (MERCC) in wastewater treatment process.", KOREA Patent number **10-2009-0057705**
 - 3- **Abou-Shanab, R.A.** (2008). Removal of Toxic Chromium (VI) Using *Aspergillus tamaris* Isolated From Egyptian Environment. Egyptian patent Office, *Patent # 24010*
 - 4- **Jay Scott Angle, Rufus L. Chaney, Reda Abdelaziz Abou-Shanab and Peter Van Berkum** (2007). Bacterial effects on metal accumulation by plants, US patent Office *Patent # 7,214,516*
 - 5- **Abou-Shanab, R. A.** (2007). Method for heavy metal extraction from soil using *Conyza discoridies*, Egyptian patent Office *Patent #23678*