

# Amir Rezaei Bazkiaei, M.S.

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## Education

Doctor of Philosophy in Civil, Structural and Environmental Engineering; SUNY Buffalo (UB), New York

Jan 2009 – May 2013 (anticipated graduation date); GPA 3.7

Master of Science in Civil, Environmental Engineering; SUNY Buffalo (UB), New York

Jan 2009 – Feb 2012; GPA 3.8

Master of Science in Environmental Engineering; Iran University of Science and Technology (IUST), Tehran, Iran

Aug 2006 – Dec 2008

Bachelor of Science in Civil Engineering; Sharif University of Technology (SUT), Tehran, Iran

Aug 2002 – Dec 2006

## Employment

01/2009–current Civil, Structural and Environmental Engineering department; State University of Buffalo

- Research assistant at the Center for Integrated Waste Management (CIWM)

07/2006–11/2008 Zistpooyagostar Consulting Company

- Member of division for pollution inventory and control
- Environmental Impact Assessment (EIA) group member
- Head of environmental modeling group

09/2007– 10/2008 Industry-University Cooperation Program

- Environmental design and auditing under the supervision of University-Industry Advisory Board
- Landfill design for Final waste management unit of a regional thermal power plant
- Caspian sea auditory investigation of oil pollution source and causes.

## Professional Skills

- **Building energy modeling and optimization:** Experienced in building envelope energy modeling and design
- **Ground Source Heat Pump (GSHP):** Experimental and numerical modeling and design of GSHP systems for horizontal and vertical pipe installations
- **Algal carbon dioxide sequestration:** research experience on biological Co2 sequestration

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- **Environmental Impact Assessment:** Head of environmental modeling group in projects including thermal power plant construction, tailing dam construction , iron & steel facility construction, and industrial city development
- **Environmental design:** Design of landfill as final industrial waste dump facility for stabilized materials of Qazvin thermal power plant
- **Environmental audit and inventory:** Investigation on pollution sources of Caspian sea Eastern coast line
- **Waste management:** Stabilization/Solidification of industrial waste material with cement matrix, lab experiment, analytical chemical tests, atomic adsorption spectrophotometer utilization
- **Air pollution:** Modeling of air pollution dispersion of Sirjan and Kahnooj thermal power plants

### Modeling Experience

- **eQUEST, DOE2, TRNSYS:** hourly building envelope energy simulation and design
- **Matlab, Genetic algorithm:** Ground Source Heat Pump (GSHP) computer based modeling and optimization
- **Hydrus1D and 3D:** Water, pollutant and heat transfer simulation in partially saturated soil material
- **Fluent:** CFD modeling with focus on indoor air quality assessment
- **STELLA, Vensim:** System dynamic modeling
- **Visual Plume:** Jet and plume analysis for mixing zone studies and water quality assessments
- **Screen3, HYROAD:** Air quality modeling
- **Quale2k, CEQUAL:** Water quality modeling
- **CHEMSTEER:** Industrial risk assessment analysis

### Publications

1. **Rezaei B., Amir,** Kolahdouz, E. M., Dargush, G. F., & Weber, A. S. (2012a). Ground source heat pump pipe performance with Tire Derived Aggregate. *International Journal of Heat and Mass Transfer*, 55(11-12), 2844-2853. doi:10.1016/j.ijheatmasstransfer.2012.02.004
2. **Rezaei B., Amir,** Kolahdouz, E. M., Dargush, G. F., & Weber, A. S. (2012b). Efficiency Modeling of a Ground Heat Exchanger with Tire Derived Aggregate in a Finite Difference Model. *Renewable Energy World Conference & Expo North America, Long Beach, California, Feb 2012.*
3. **Amir Rezaei-Bazkiaei,** Ehsan Dehghan-Niri, A. Scott Weber, and Gary F. Dargush (2012). A New Control Strategy to Improve the Ground Source Heat Pump's Efficiency with a Recycled Product , *Accepted Paper, International Mechanical Engineering Congress and Exposition, Houston Texas, ASME*
4. Mehdi Maneshi, **Amir Rezaei-Bazkiaei,** A. Scott Weber, and Gary F. Dargush (2012). A Numerical Investigation of Impact of Architectural and Climatic Parameters of Windcatcher Systems on Induced Ventilation, *Accepted Paper, International Mechanical Engineering Congress and Exposition, Houston Texas, ASME*
5. Saeedi, M., **Bazkiaei, R.,** & Torkaman, Z. (2010). Insights in Leaching Characteristic Assessment of Solidified Wastes Using Different Leach tests. *International Journal of*

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*Environmental Research*, 4(3), 455–462. Retrieved from <http://www.bioline.org.br/request?er10050>

6. Saeedi, M., & **Rezaei B., A.** (2010). Leaching Mechanism and Strength Characteristics of a Solidified High Carbon Content Waste. *A&WMA Annual Conference, JUNE 22-25, 2010 • CALGARY, ALBERTA, CANADA.*
7. Oladnia, S., Saeedi, M., & **Rezaei B., A.** (2008). Intersection Air Pollution Emission Prediction Using Software Hyroad; A Case Study Fatemi-Valiasr Intersection from Iran. *World Environmental and Water Resources Congress 2008* (Vol. 316, p. 159). Honolulu, Hawaii: ASCE. doi:10.1061/40976(316)159
8. Saeedi, M., & **Rezaei Bazkiaei, A.** (2008). Characterization of thermal power plant fuel oil combustion residue. *Res. J. Environ. Sci*, 2, 116–123. Retrieved from <http://www.docsdrive.com/pdfs/academicjournals/rjes/2008/116-123.pdf>
9. **Bazkiaei, A. R.,** & Saeedi, M. (2007). Application of System Dynamic in Environmental Management; Forecasting of Fishing Participation. *Journal of Fisheries and Aquatic Science*, 2(5), 310–318. Retrieved from <http://docsdrive.com/pdfs/academicjournals/jfas/2007/310-318.pdf>
10. Saeedi M., **Rezaei Bazkiaei A.** (2007). Inherent TCLP Limitations, Extensive International Criticism, and Development of New Evaluation Framework for Waste Materials, *First National Conference on Environment Day*, Tehran University
11. Saeedi, M., **Rezaei Bazkiaei, A.** and Ziaee, M., (2006). Acid mine drainage; prevention and control, *Proceedings 6<sup>th</sup> Congress on Safety, Health and Environment in Mines and Related Industries*, Tehran.
12. Saeedi M., Abbasi O., **Rezaei Bazkiaei A.,** Jamshidi A. (2006). AHP Priority Setting for Selected Dump Sites of Industrial Waste Materials Produced in Qazvin Thermal Power Plant, *First National Conference on Environmental Engineering*, Tehran university
13. **Rezaei Bazkiaei A.,** Saeedi M. (2007). Municipal and Industrial Waste Landfills; Guidelines, Specials and Design Considerations, *Journal of New Achievements in Construction Sector*, Tehran, Iran

### Professional Communities Memberships

ASME, ASHRAE, ACEEE, AEE, IGSHPA, ASCE

### Honors and Awards

- Tau Beta Pi Honor Society member
- Recipient of the School of Engineering and Applied Science (SEAS) PhD fellowship at University at Buffalo
- President of Graduate Student Association (GSA), CSEE department, 2010-2011
- Ranked 510 in the graduate school nation-wide entrance exam amongst more than 500,000 participants
- Ranked 180 in the undergraduate nation-wide entrance exam amongst more than 2 million participants

### Current Projects

- Optimization of a ground source heat pump performance with non-homogeneous soil profile using genetic algorithm
- CFD modeling of various opening types in naturally ventilated buildings to obtain optimal thermal comfort

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## **Teaching Experience**

Teacher Assistant: 01/09 - 05/09 and 01/10 - 05/10 University at Buffalo, Civil, Structural and Environmental Engineering Department

Course title: Introduction to environmental engineering

- Selected and designed assignments with co-instructor
- Graded assignments
- Conducted classes
- Maintained regular contact and correspondence with students

## **Language**

Proficient in verbal and written English and Farsi.