KAMRAN JAHAN BAKHSH

Colorado School of Mines
Mining Engineering Department
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PRPFILE

A Ph.D. Candidate (at the dissertation level) in Geothermal Engineering at Colorado School of Mines with significant multidisciplinary engineering knowledge and experience seeks to apply skills to the goals of environmental and geothermal energy consulting company.

ENGINEERING AND TECHNICAL SKILLS

- **Computer Simulation:** Geothermal reservoir modeling, Heat transfer, thermodynamics, Low enthalpy geothermal resources, Cascading Geothermal Energy.
- **Field:** Geological Mapping, data gathering, Technical field reports, teamwork.
- **Software:** COMSOL Multiphysics, ANSYS Fluent, Microsoft office
- **Communication:** Oral presentation skills, technical writing
- **International:** F1 visa employment authorization eligible (OPT), Multilingual: English/Kurdish/Persian/Arabic

EDUCATION

Colorado School of Mines (CSM), Golden, CO, USA — From 2014
Ph.D. Candidate, Geothermal Engineering — 3.87 GPA

Colorado School of Mines (CSM), Golden, CO, USA — 2015
M.S., Mining Engineering — 3.87 GPA

Isfahan University of Technology — 2005
B.S., Mining Engineering — 3.20 GPA

RESEARCH AND WORK EXPERIENCE

Edgar Mine, Experimental Underground mine. Idaho Spring, Co — 2014-2016

- Engaged in DOE's geothermal project, discontinuity mapping, over-coring, and drilling laboratory-scale geothermal well
- Engaged in the full function mine rescue training with Western Mining Resource Center (WMRC)
- Trained CSM student to gain hands-on experience with drilling, mucking, and mine safety
- Designed and constructed ventilation line ramified from main ventilation system
- Prepared daily safety minute for underground and surface activities

Geothermal Case Study Challenge (DOE) — Spring 2014

- A case study detailing the exploration, development, and geologic history of Waunita geothermal resource area is conducted. Produced case has been added by to the existing collection of data currently available on NREL's Open Energy Information (OpenEI) platform. I have won first place in the 2014 Geothermal Case Studies Challenge

Alpha project (CSM) — Summer 2014

- Developed CFD model of a rock dust sampling device (DSD) suited to collect consist, repeatable samples off of the mine floor, ribs, and roof where mine dust settles. Computational Fluid Dynamic modeling is used to compare with experimental model and optimize the prototype. The project is funded by MSHA and current status is ongoing.

Mining Consultant (KAN JIN, Tehran) — 2010-2013

- Received engineering authority from IMEO and advised several high profile clients regarding project feasibility,

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investment potential, and drilling/blasting considerations

- Preformed pre-feasibility and feasibility studies for mineral industry including preparing reconnaissance reports, instrumental studies of sample, markets studies, financial appraisal for aggregate, marble, and industrial mineral mines
- Researched/analyzed production potential and target market of feldspar deposit for Gol-Cheshmeh Micronized Powder Corp

Drilling Supervisor (POOYA TAK NAR, Tehran) 2010-2012

- Directed activities and enforced safety protocols for a team of drilling and blasting technicians. Planned drilling/blasting activity based on geological feature and mining plans. Mandated workplace safety rules, and evaluated results for future refinement

Tarbiat Modares Research Center (TMU, Tehran) 2008-2009

- Led investment analysis workshops to introduced COMFAR software to small scale mines on behalf of IMIDRO
- Developed a mineral supply chain database and analyzed mineral economic impact for Iran's Ministry of Industries and Mines

Technical Supervisor (Pumice Mine, Iran) 2005-2006

- Coordinated production schedules, safety management program, pushback plans, and financial analysis / reporting to align technical elements with business goals and project timelines

AWARDS & SCHOLARSHIPS

Colorado School of Mines	Potate Fellowship
Colorado School of Mines	Charles L. Piller Mining Scholarship
WAAIME SME	Scholarship

AFFILIATIONS

Geothermal Resource Council, Student committee member (GRC)
Society of Mining, Metallurgy, and Exploration (SME)
Institute of Materials, Mineral, and Mining (IOM3)
Iranian Mining Engineering Organization (IMEO)

LICENCES AND CERTIFICATIONS

Safety credentials in underground mining	MSHA
Reservoir Geo-mechanics	Stanford Online
Geotechnical and Structural Instrumentation, Monitoring, and Information Engineering	Colorado School of Mines
COMSOL Application Builder	COMSOL Multiphysics
Mining Engineering Engagement License	Iranian Mining Engineering Organization
Drilling in Open Pit Mines Certification	Iranian Mines & Mining Industries Development & Renovation
Quality Control Management Certification	Institute of Standards and Industrial Research of Iran

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PUBLICATIONS

BOOK CHAPTERS and REPORTS

- M. Nakagawa, K. Jahanbakhsh, M. Arshad "Beyond Hydrocarbon Extraction: Enhanced Geothermal Systems" to be appeared in "New Frontiers in Oil and Gas Exploration", SPi Technologies, on behalf of Springer Publishing, 2016

- C. Augustine, S. Bauer, M. Nakagawa, W. Zhou, K. Jahanbakhsh, "Technology Transfer at Edgar Mine Phase 1: FY15 Final Report" supported by the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy (EERE), Geothermal Technologies Office (GTO), Contract No. DEAC36-08-GO28308 with the National Renewable Energy Laboratory (NREL), 2016

- K. Jahanbakhsh, "Waunita Hot Springs Geothermal Area: the exploration, development, and geologic history" NREL's Open Energy Information (OpenEI) platform, (http://en.openei.org/wiki/Waunita_Hot_Springs_Geothermal_Area)

CONFERENCE PAPERS

- K. Jahanbakhsh "Mine Production Rate and Detecting Effective Factors on Production Rate", Published on 5th Mining Conference, Isfahan University of Technology, Nov.2006, Proceeding book Vol.1, page 721

- K. Jahanbakhsh, H. Dehghan. "Cutoff grade Computing in Poly-metal Deposits; Using Mineral Point Value", Published on 5th Student Mining Conference, Isfahan University of Technology, Nov.2006, Proceeding book Vol.1, page 609

- K. Jahanbakhsh, A.R. Sayadi."Reserve Evaluation of Ali-Abad Copper Mine; Using DATA MINE Software", 26th GSI Congress, Ministry of Industries and Mine, Geological Survey of Iran, Tehran, Iran, Feb. 2008, Proceeding book Vol.1, page 310

- K. Jahanbakhsh, A.R. Sayadi "Sensitivity Analysis of Effective Factors on Ali-Abad Copper Mine", 26th GSI Congress, Ministry of Industries and Mine, Geological Survey of Iran, Tehran, Iran, Feb. 2008, Proceeding book Vol.1, page 131

- K. Jahanbakhsh, M Nakagawa, M Arshad, L Dunnington "Modeling Thermal Breakthrough in Sedimentary Geothermal System, Using COMSOL Multiphysics" PROCEEDINGS, 41st Workshop on Geothermal Reservoir Engineering Stanford University, Stanford, California, February 22-24, 2016 SGP-TR-209

- L Dunnington, M Nakagawa, M Arshad, KJ Bakhsh "Using Mine Heat to Bolster Efficiency and Lifetime of SRB Bioreactors" PROCEEDINGS, 41st Workshop on Geothermal Reservoir Engineering Stanford University, Stanford, California, February 22-24, 2016 SGP-TR-209

- M. Arshad, M. Nakagawa, K. Jahanbakhsh, and Lucila Dunnington "An Insight in Explaining the Stress Distribution in and around EGS" PROCEEDINGS, 41st Workshop on Geothermal Reservoir Engineering Stanford University, Stanford, California, February 22-24, 2016 SGP-TR-209

RECENTLY SUBMITTED

- Nakagawa, K. Jahanbakhsh, M. Arshad. "Beyond Hydrocarbon Extraction: Enhanced Geothermal Systems" book title "New Frontiers in Oil and Gas Exploration" which will be published by Springer

- K. Jahanbakhsh, M. Nakagawa, M. Arshad, and Lucila Dunnington "Transport Mechanisms within Thermally-Shocked

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Region pf an Enhanced Geothermal System" GRC's 40th Annual Meeting October 23-26, 2016

- M. Arshad, M. Nakagawa, K. Jahanbakhsh, and Lucila Dunnington "Thermal Stresses around EGS" GRC's 40th Annual Meeting October 23-26, 2016

- M. Arshad, M. Nakagawa, K. Jahanbakhsh "2D Fracture Flow Simulation Using Data Extracted from Edgar Mine Discontinuity Mapping" COMSOL Conference October 5-7, 2016. Boston, USA

- K. Jahanbakhsh, M. Nakagawa, M. Arshad Modeling Heat and Mass Transport within Thermally-Shocked Zone of the Enhanced Geothermal System" COMSOL Conference October 5-7, 2016. Boston, USA

POSTER PRESENTATION

- K. Jahanbakhsh, M. Nakagawa, M. Arshad, and Lucila Dunnington "Brining Oil and Gas Closer to Geothermal: Engineered Geothermal System for Sedimentary Basin". Graduate Research and Discovery Symposium, Colorado Scho0l of Mines, March 25th, 2016