

<http://www.arizona.edu>



COLLEGE OF ENGINEERING

Mining & Geological Engineering

Ω

[Home \(/ \)](#) / [Faculty & Staff \(/faculty-staff\)](#) / [Faculty \(/faculty-staff/faculty\)](#) / Moe Momayez



moe.momayez@arizona.edu (<mailto:moe.momayez@arizona.edu>)

520.621.6580 (tel:520.621.6580)

Mines 241C

[Full details at profiles.arizona.edu](#)

Moe Momayez

Associate Professor of Mining and Geological Engineering

Degrees

- Ph.D. Mining Engineering
 - McGill University, Montreal, Quebec, Canada
 - Stress memory measurement using the Kaiser effect of acoustic emission

Work Experience

- Associate Department Head, The University of Arizona - Department of Mining and Geological Engineering (2011 - 2014)
- Associate Professor, The University of Arizona - Department of Mining and Geological Engineering (2007 - Ongoing)
- Faculty Lecturer and Senior Research Associate, McGill University - Department of Mining and Materials Engineering (2000 - 2006)
- Research Associate, McGill University - Department of Mining and Materials Engineering (1996 - 2000)
- Post-Doctoral Fellow, McGill University - Center of Intelligent Machines (1994 - 1996)

Awards

- James F. Bly MGE Outstanding Faculty Award
 - UA Foundation, Fall 2009

Interests

Teaching

Geopositioning, Mine Ventilation, Rock Excavation, Rock Mechanics, Geosensing, Time Series Analysis, Machine Learning, Image Processing, Computer Programming, Instrumentation, Renewable Energy

Research

Mine Ventilation, Geomechanics, Rock Physics, Rock Breakage, Geosensing, Rock Slope Stability, Renewable Energy, Instrumentation and Monitoring, Signal and Image Processing, Machine Learning, Nondestructive Evaluation

Courses

Data Analysis

MNE 520 (Spring 2018)
 MNE 420 (Spring 2018)
 MNE 520 (Fall 2017)
 MNE 420 (Fall 2017)
 MNE 520 (Spring 2017)
 MNE 420 (Spring 2017)
 MNE 520 (Fall 2016)
 MNE 420 (Fall 2016)

Independent Study

MNE 499 (Spring 2018)
 MNE 599 (Fall 2017)
 MNE 699 (Spring 2017)
 MNE 599 (Spring 2017)
 MNE 499 (Spring 2017)
 MNE 599 (Fall 2016)
 MNE 699 (Fall 2016)

Thesis

MNE 910 (Spring 2018)
 MNE 910 (Fall 2017)

Mine Ventilation

MNE 576 (Spring 2018)
 MNE 476 (Spring 2018)
 MNE 576 (Spring 2017)
 MNE 476 (Spring 2017)

Dissertation

MNE 920 (Fall 2017)
 MNE 920 (Spring 2017)
 MNE 920 (Fall 2016)

Geopositioning

MNE 544 (Fall 2017)
 MNE 444 (Fall 2017)
 MNE 444 (Fall 2016)

Applied Earth Sci Meas & Image

MNE 670 (Fall 2017)

Directed Research/Mn E

MNE 392 (Fall 2017)
 MNE 492 (Fall 2017)
 MNE 392 (Summer I 2017)
 MNE 492 (Spring 2017)
 MNE 492 (Fall 2016)
 MNE 392 (Fall 2016)

Research

MNE 900 (Spring 2017)
 MNE 900 (Fall 2016)

Honors Thesis

MNE 498H (Spring 2017)
 MNE 498H (Fall 2016)

Selected Publications

Journals/Publications

- Gravley, S., Momayez, M., Tenorio Gutierrez, V. O., Diaz, N. B., Gravley, S., Momayez, M., Tenorio Gutierrez, V. O., & Diaz, N. B. (2017). Diseño de una Estación de Refugio para Equipo Montado en Rieles – Design of a Refuge Chamber for Rail-Mounted Equipment. *RUMBO MINERO*, 182-185.
- Avanesians, P., & Momayez, M. (2015). Wave separation: Application for arrival time detection in ultrasonic signals. *Ultrasonics*, 55, 15--25.
- Leyland, R., Verryn, S., & Momayez, M. (2014). Smectite clay identification and quantification as an indicator of basic igneous rock durability. *Bulletin of Engineering Geology and the Environment*, 1--9.

- Lu, H., Luo, Z., & Momayez, M. (2014). CMS-Assisted rock mass stability assessment for underground excavation. *International journal of safety and security engineering*, 4(3), 261--270.
- Momayez, M., & Ureel, S. (2014). An Investigation of the Present and Future Testing Methods of Rock Abrasion Resistance. *International Journal of Mining Engineering and Mineral Processing*, 3(1).
- Leyland, R. C., Paige-Green, P., & Momayez, M. (2014). Development of the road aggregate test specifications for the modified ethylene glycol durability index for basic crystalline materials. *Journal of Materials in Civil Engineering*, 26(7).
- Momayez, M., Boadu, F., Cassidy, N., & Jongmans, D. (2013). Introduction to the JEEG - NSG geotechnical assessment and geo-environmental engineering geophysics special issue. *Near Surface Geophysics*, 11(6), 589-590.
- Momayez, M., Boadu, F., Cassidy, N., & Jongmans, D. (2013). Introduction to the JEEG-NSG Geotechnical Assessment and Geo-environmental Engineering Geophysics Special Issue. *Journal of Environmental and Engineering Geophysics*, 18(4), 201--203.
- Ureel, S., Momayez, M., & Oberling, Z. (2013). Rock core orientation for mapping discontinuities and slope stability analysis. *International Journal of Research in Engineering and Technology (IJRET)*, 2(07), 1--8.
- Koruyan, K., Deliormanli, A., Karaca, Z., Momayez, M., Lu, H., & Yalçin, E. (2012). Remote sensing in management of mining land and proximate habitat. *Journal of the Southern African Institute of Mining and Metallurgy*, 112(7), 667--672.
- Koruyan, K., Deliormanli, A., Karaca, Z., Momayez, M., Lu, H., & Yalçin, E. (2012). Remote sensing in management of mining land and proximate habitat. *Journal of the Southern African Institute of Mining and Metallurgy*, 112(7), 667-672.
- Freund, F. T., Hoenig, S. A., Braun, A., Dahlgren, R. P., Momayez, M., & Chu, J. J. (2010). Softening rocks with stress-activated electric current. *Rock Stress and Earthquakes - Proceedings of the 5th International Symposium on In-Situ Rock Stress*, 839-843.
- Annavarapu, S., Wilson, T., Momayez, M., & Cronin, A. (2009). Geotechnical Considerations for Solar Panel Installation on Mine Tailings. *26th Annual Meetings of the American Society of Mining and Reclamation and 11th Billings Land Reclamation Symposium*, 1, 37-43.
- Liu, Y., Momayez, M., & Tong, D. (2009). Estimation of soil moisture from remote sensing data and cokriging. *Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems, SAGEEP*, 2, 889-894.
- Momayez, M., Wilson, T., Cronin, A., Annavarapu, S., & Conant, B. (2009). An Investigation to Use Tailing Ponds as Solar Photovoltaic Farms. *26th Annual Meetings of the American Society of Mining and Reclamation and 11th Billings Land Reclamation Symposium*, 2, 817-832.

Proceedings Publications

- Heath, G., Poulton, M., & Momayez, M. (2014, September). Remote Controlled Monitoring for Closure of the Carlota Mine. In *2014 AIPG/AHS - Water and Rocks, the Foundations of Life National Conference*.
- Lu, H., Luo, Z., & Momayez, M. (2014, May). An Integrated Modelling and Numerical Simulation for Rock Mass Assessment in Underground Mines. In *Rock Mechanics and Its Applications in Civil, Mining, and Petroleum Engineering*, 759-768.
- Ureel, S., & Momayez, M. (2014, August). An Investigation of the Limit Equilibrium Method and Numerical Modeling for Rock Slope Stability Analysis. In *Rock Mechanics and Its Applications in Civil, Mining, and Petroleum Engineering*, 218--227.
- LeTran, P., & Momayez, M. (2013, November). Acoustic-Mediated Platelet Activation: A Novel Pro-Thrombotic Mechanism Linking Obstructive Sleep Apnea and Cardiovascular Disease. In *Proceedings of the Scientific Sessions 2013 Conference, American Heart Association*.
- Leyland, R., & Momayez, M. (2013, September). Experimental Studies to Quantify Gravel Loss from Unsealed Roads in the Kruger National Park, South Africa. In *Association of Environmental & Engineering Geologists 56th Annual Meeting*.
- Chandarana, U., Momayez, M., & Slack, D. (2012, May). A Review of Land Surface Changes Before and After an Earthquakes. In *The 4th KKU International Engineering Conference*.
- Momayez, M., & Scoble, M. (2011, March). Technology-Assisted Shared-Teaching and Instruction: Impact on Student Learning and Attendance. In *Symposium on the Application of Geophysics to Engineering and Environmental Problems 2011*, 538--538.
- Freund, F., Hoenig, S., Braun, A., Dahlgren, R., Momayez, M., Chu, J., & others, . (2010). Softening Rocks With Stress-activated Electric Current. In *International Symposium on In-Situ Rock Stress*.
- Momayez, M., Cronin, A., & Annavarapu, S. (2010, February). Use of Mine Tailings Areas as Solar Photovoltaic Farms: A Technical Analysis. In *Annual Conference of the Society for Mining, Metallurgy and Exploration*.
- Dahlgren, R., Freund, F., Momayez, M., Bleier, T., Dunson, C., Joggerst, P., Jones, K., & Wang, S. (2009, December). In-Situ Stressing of Rock: Observation of Infrared Emission Prior to Failure. In *AGU Fall Meeting Abstracts*.
- Liu, Y., Momayez, M., & Tong, D. (2009, March). Estimation of Soil Moisture from Remote Sensing Data and Cokriging. In *22nd EEGS Symposium on the Application of Geophysics to Engineering and Environmental Problems*.
- Hosseini, Z., Momayez, M., Hassani, F., & L'evesque, D. (2008). Detection of inclined cracks inside concrete structures by ultrasonic SAFT. In *Review of Progress in Quantitative Nondestructive Evaluation: 34th Annual Review of Progress in Quantitative Nondestructive Evaluation*, 975, 1298--1304.
- Hosseini, Z., Momayez, M., & Hassani, F. (2007, May). Inspection of Rock-concrete Interface In Underground Support Systems Using a Non-destructive Testing Technique. In *First Canada-US Rock Mechanics Symposium*.
- Hosseini, Z., Momayez, M., Hassani, F., & Levesque, D. (2007, July). Detection of Inclined Cracks Inside Concrete Structures by Ultrasonic SAFT. In *Review of Progress in Quantitative Nondestructive Evaluation*.
- Momayez, M., Hosseini, Z., & Hassani, F. (2006, June). Locating and Characterizing Inclined Cracked in Concrete Using SAFT. In *NDE Conference on Civil Engineering*.

Poster Presentations

- Carpio, J. M., Tenorio Gutierrez, V. O., Momayez, M., & Gravley, S. (2016, March). *Shaft and Hoisting System Operational Analysis at San Xavier Mine Lab*. 2016 Latin America-UA Winter Program. University of Arizona: OLAPI.
- Diaz, N. B., Tenorio Gutierrez, V. O., Momayez, M., & Gravley, S. (2016, March). *Design of a refuge station for rail-mounted mining equipment*. 2016 Latin America-UA Winter Program. University of Arizona: OLAPI.
- Figueiredo dos Santos, J., Momayez, M., Tenorio Gutierrez, V. O., & Lowell, G. D. (2015, Summer). *Updating the 3D model of San Xavier Mine Laboratory using Point Cloud*. 2015 UA-Latin America Summer Research Program. Mining and Geological Engineering Department: OLAPI.
- Figueiredo dos Santos, J., Momayez, M., Tenorio Gutierrez, V. O., Lowell, G. D., Figueiredo dos Santos, J., Momayez, M., Tenorio Gutierrez, V. O., & Lowell, G. D. (2015, Summer). *Updating the 3D model of San Xavier Mine Laboratory using Point Cloud*. Latin America Summer Research Program 2015. Mining and Geological Engineering Department.
- Gamboa, J., & Momayez, M. (2013, December). *Snoring Your Way to Increased Cardiovascular Risk: Endothelial Dysfunction and Thrombogenicity*. Frontiers - American Heart Association. Tucson, AZ, USA: Frontiers - American Cancer Society.

Presentations

- Momayez, M. (2015, February). *Optical Fiber Based Air Properties Measurement for Distributed Sensing in Underground Mines*. Annual Conference of the Society for Mining, Metallurgy and Exploration. Denver, CO, USA.
- Heath, G., & Momayez, M. (2013, December). *Using Electrical Resistivity Tomography (Ert) to Map Groundwater Flow Over Time*. Mine Water Seminar. Tucson, AZ, USA: Freeport McMoran.
- Momayez, M. (2012, May). *Fiber Optics Distributed Sensing: Could This Technology Change the Future of Border Security Monitoring?*. 8th Border Security Conference. El Paso, TX, USA.
- Liu, Y., & Momayez, M. (2009, March). *Slope Stability Analysis Through Integration of Ground Measurement and Remote Sensing*. ASPRS 2009 Annual Conference. Baltimore, MD, USA.
- Momayez, M. (2009, April). *Geomaterials Characterization*. Weekly Seminar. Tucson, AZ, USA: University of Arizona - Department of Civil Engineering and Engineering Mechanics.
- Momayez, M. (2009, April). *Mine Stability and Earthquake Precursor Detection*. GeoDaze 2009, 37th Annual Geosciences Symposium. Tucson, AZ, USA: University of Arizona - Department of Geosciences.
- Momayez, M. (2009, October). *Integration of Ground-Based and Remote Sensing Data for Geotechnical Analysis*. Bouyoucos Conference for the Advancement of Geophysical Technologies Applied to Agroecosystems. Albuquerque, NM, USA: U.S. Dept. of Agriculture.
- Momayez, M. (2008, November). *Geomaterials Characterization*. Weekly Seminar. Brisbane, Australia: Queensland University - Department of Mining Engineering.
- Momayez, M. (2007, December). *Evaluation of Refractory Bricks Regression*. Seminar. Brisbane, Australia: CRC Mining.

Others

- Momayez, M. (2012, January). Preface. Proceedings of the Symposium on the Application of Geophysics to Engineering and Environmental Problems, SAGEEP.



College of Engineering (<http://engineering.arizona.edu/>)

EMPLOYEE RESOURCES (/FACULTY-STAFF/RESOURCES)

The University of Arizona
Department of Mining & Geological Engineering
1235 E. James E. Rogers Way
P.O. Box 210012
Tucson, AZ 85721-0021
520.621.6063



(<https://www.facebook.com/UAMining>)



(<https://www.linkedin.com/in/mining-engineering-university-of-arizona-2920b86a/>)