

Hamid Reza Nejati



Contact

Address:

Tarbiat Modares University, Jalal
AleAhmad Street, Tehran, Iran

Phone:

+98 21 82883380

Email:

h.nejati@modares.ac.ir

LinkedIn:

[linkedin.com/in/hamid-reza-nejati-789b645b](https://www.linkedin.com/in/hamid-reza-nejati-789b645b)

Google Scholar:

https://scholar.google.com/citations?user=_IXeKkcAAAAJ&hl=en

Languages

Persian – Native

English – C1

Hobbies

- Writing
- Experimental Tests
- Numerical Modeling
- Design

Summary

Hamid Reza Nejati is an associate professor of rock mechanics at Tarbiat Modares University and an expert in analyzing the failure mechanism of rocks and construction materials. He has extensive experience in experimental studies and is skilled in tunneling design using analytical and numerical modeling software. He is particularly interested in dynamic analysis of underground structures and has worked on several projects related to seismic analysis of underground structures and ground bore vibration.

Skill Highlights

- Experimental studies
- Seismic analysis
- Reliability analysis
- Numerical modeling (FLAC 2&3D, UDEC, PFC)
- Tunnel design
- Construction materials
- Failure analysis
- Mentoring

Experience

- Associate Professor of Rock Mechanics, Tarbiat Modares University (2019 - present)
- Assistant Professor of Rock Mechanics, Tarbiat Modares University (2014 - 2019)
- Head of Department, Rock Mechanics, Tarbiat Modares University (2019 - present)
- President, Iranian Society for Rock Mechanics (2023 - present)
- Board of Directors, Iranian Society for Rock Mechanics (2015 - 2023)

Education

- PhD in Rock Mechanics Engineering – 2013, Tarbiat Modares University, Tehran, Iran
- MSc in Rock Mechanics Engineering – 2009, Tarbiat Modares University, Tehran, Iran
- BSc in Mining Engineering – 2006, Isfahan University of Technology, Isfahan, Iran

Teaching

- Design and Planning of Underground Spaces
- Advanced Rock Mechanics
- Reliability analysis of underground structures

Publications

1. **Nejati, H.R.**, Ahmadi, M., Hasheomolhosseini, H., (2012); Numerical analysis of ground surface vibration induced by underground train movement. *Tunnelling and Underground Space Technology*. (29); 1-9.
2. Ghazvinian, A., **Nejati, H.R.** and Saemi, M., (2012); Reliability and Uncertainty of Prediction of Dynamic Elastic Constants in Reservoir Rock. *Journal of Canadian Petroleum Technology* 51 (3): 198-204.
3. Ghazvinian A., Sarfarazi V., **Nejati H.R.**, Hadei M.R., (2011); "The shear behavior of planar non-persistent joint", *Journal of Mines Metals and Fuels* Vol. 59, PP. 131-137.
4. **Nejati H.R.**, Ahmadi M., Hasheomolhosseini, H., Hayati, M., (2012) "Probabilistic Analysis of Ground Surface Vibration Due to Train Movement, a Case Study on Tehran Metro Line 4", *Geotech Geol Eng* 30:1137–1146.
5. **Nejati H.R.**, Ahmadi M. Hasheomolhosseini H., (2012) An investigation on the ground motion parameters and seismic response of underground structures, *Earthquake science*, 25(3): 253-261.
6. Ahmadi, M., Rahnama, A., **Nejati H.R.**, (2012) Seismic response of underground openings: with an insight into Siah Bisheh Caverns, *Journal of Seismology and Earthquake Engineering*, Vol. 14, No. 1.
7. Saemi M., **Nejati H.R.**, Bahremandi M. (2013) In-situ stress determination using limited geomechanical data in south of Iran. *Journal of Mines Metals and Fuels* Vol. 61, PP. 19-30.
8. Ghazvinian A., Azizian F., **Nejati H.R.**, (2013) Failure analysis of transversely isotropic rocks – a numerical study. *Journal of Mines Metals and Fuels* Vol. 61, PP. 43-53.
9. Ghazvinian A., **Nejati H.R.**, Sarfarazi V., Hadei M.R., (2013) "Mixed mode crack propagation in low brittle rock-like materials", *Arabian Journal of Geosciences*, 6: 4435 – 4444.
10. Sarfarazi V., Ghazvinian A., Schubert W., Blumel M., **Nejati H. R.**, (2014) Numerical Simulation of the Process of Fracture of Echelon Rock Joints. *Rock Mechanics Rock Engineering*. 47:1355–1371.
11. **Nejati H.R.**, Ghazvinian A., (2014) Brittleness Effect on Rock Fatigue Damage Evolution. *Rock Mechanics Rock Engineering*. 47:1839–1848.
12. **Nejati H.R.**, Ghazvinian A., Moosavi A., Sarfarazi V., (2014) On the Use of the RMR System for Estimation of Rock Mass Deformation Modulus, *Bulletin of Engineering Geology and the Environment*, 73:531–540.
13. Sabri M., Ghazvinian A., **Nejati H.R.** (2016) Effect of particle size heterogeneity on fracture toughness and failure mechanism of rocks. *International Journal of Rock Mechanics and Mining Sciences* 81, 79-85.
14. Azinfar, M. J., Ghazvinian, A. H., & **Nejati, H. R.** (2016). Assessment of scale effect on 3D roughness parameters of fracture surfaces. *European Journal of Environmental and Civil Engineering*, 1-28.
15. Sarfarazi, V., Ghazvinian, A., Schubert, W., **Nejati, H. R.**, & Hadei, R. (2016). A new approach for measurement of tensile strength of concrete. *Periodica Polytechnica Civil Engineering*, 60(2), 199-203.
16. **Nejati, H. R.**, & Moosavi, S. A. (2017). A new brittleness index for estimation of rock fracture toughness. *Journal of Mining and Environment*, 8(1), 83-91.
17. Nazerigivi, A., **Nejati, H. R.**, Ghazvinian, A., & Najjigivi, A. (2017). Influence of nano-silica on the failure mechanism of concrete specimens. *Computers and Concrete*, 19(4), 429-434.
18. Haeri, H., Sarfarazi, V., Shemirani, A. B., Gohar, H. P., & **Nejati, H. R.** (2017). Field Evaluation of Soil Liquefaction and Its Confrontation in Fine-Grained Sandy Soils (Case Study: South of Hormozgan Province). *Journal of Mining Science*, 53(3), 457-468.
19. Najjigivi, A., Nazerigivi, A., & **Nejati, H. R.** (2017). Contribution of steel fiber as reinforcement to the properties of cement-based concrete: a review. *Computers and Concrete*, 20(2), 155-164.
20. Imani, M., **Nejati, H. R.**, & Goshtasbi, K. (2017). Dynamic response and failure mechanism of Brazilian disk specimens at high strain rate. *Soil Dynamics and Earthquake Engineering*, 100, 261-269.
21. Kim, H. M., Lee, J. W., Yazdani, M., Tohidi, E., **Nejati, H. R.**, & Park, E. S. (2018). Coupled Viscous Fluid Flow and Joint Deformation Analysis for Grout Injection in a Rock Joint. *Rock Mechanics and Rock Engineering*, 51(2), 627-638.

22. Nazerigivi, A., **Nejati, H. R.**, Ghazvinian, A., & Najigivi, A. (2018). Effects of SiO₂ nanoparticles dispersion on concrete fracture toughness. *Construction and Building Materials*, 171, 672-679.
23. Moayedifar A., **Nejati H. R.**, Goshtasbi K., Khosrotash M. (2019). Seismic fragility and risk assessment of an unsupported tunnel using incremental dynamic analysis (IDA) *Earthquakes and Structures* 16 (6), 705-714
24. Haeri H., Sarfarazi V., Zhu Z., **Nejati H. R.** (2019). Numerical simulations of fracture shear test in anisotropy rocks with bedding layers *Advances in concrete construction* 7 (4), 241-247
25. Rooh A., **Nejati H. R.**, Goshtasbi K. (2019). A new formulation for calculation of longitudinal displacement profile (LDP) on the basis of rock mass quality *Geomechanics and Engineering* 16 (5), 539-545
26. **Nejati H. R.**, Azinfar J. (2019). Effect of Rock Fracture Filling on Mode I and II Fracture Toughness. Vol. 8, No. 17, Pages 19-25
27. **Nejati, H. R.**, Nazerigivi, A., Imani M. (2020). Monitoring of fracture propagation in brittle materials using acoustic emission techniques-A review. Vol. 25, No. 1 15-27.
28. Ghadernejad, S., **Nejati, H.R.**, Yagiz, S., (2020). A new rock brittleness index on the basis of punch penetration test data. *Geomechanics and Engineering* 21 (4), 391-399.
29. Nateghi, Goshtasbi, K., Nejati, H. R., (2020). Determination of plastic concrete behavior at different strain rates to determine Cowper-Symonds constant for numerical modeling. *Computers and Concrete* 26 (3), 227-237.
30. Arsham Moayedifar, **Hamid Reza Nejati**, Amin Nazerigivi, (2020) A practical approach for seismic risk assessment of underground structures: A case study of Iranian subway tunnels. *Earthquake Science* 32 (2), 64-71.
31. A Dadi-givshad, M Ahmadi, **HR Nejati**, Study of Damaged Zone around Circular Opening Using Acoustic Emission Technique. *Journal of Mining and Environment* 11 (2), 433-451
32. F Rastegar, **HR Nejati**, A Ghazvinian, MR Hadei, A Nazerigivi. On Applicability of Some Indirect Tests for Estimation of Tensile Strength of Anisotropic Rocks. *Journal of Mining and Environment* 11 (3), 711-720.
33. K Rostami, JK Hamidi, **HR Nejati**, (2020). Use of rock microscale properties for introducing a cuttability index in rock cutting with a chisel pick. *Arabian Journal of Geosciences* 13 (18), 1-12.
34. R Nateghi, K Goshtasbi, **HR Nejati**, (2020). Coupled Effects of Confining Pressure and Loading Rate on the Mechanical Behavior of Plastic Concrete. *Journal of Materials in Civil Engineering* 32 (10), 04020292.
35. MR Hadei, N Akbarlou, **HR Nejati**, (2020). A new development cracked chevron notched direct tension method for determining the mode I fracture toughness of rocks. *Theoretical and Applied Fracture Mechanics* 110, 102811.
36. R Nateghi, K Goshtasbi, HR Nejati, (2021). Prediction of shear strain induced by blasting waves in surface structures based on coupled frequency, velocity, and displacement effects. *Journal of Vibration and Control* 27 (9-10), 971-984.
37. E Ghorbani, S Ghadernejad, D Emami, **HR Nejati**, (2021). Estimating groundwater inflow into Dorud-Khorramabad railway tunnel using analytical and numerical methods. *International Journal of Mining and Geo-Engineering* 55 (1), 31-39
38. A Mahmoodzadeh, M Mohammadi, SN Abdulhamid, **HR Nejati**, (2021). Predicting construction time and cost of tunnels using Markov chain model considering opinions of experts. *Tunnelling and Underground Space Technology* 116, 104109.
39. A Mahmoodzadeh, M Mohammadi, SN Abdulhamid, **HR Nejati**, (2021). Prediction of duration and construction cost of road tunnels using Gaussian process regression. *Geomechanics and Engineering* 28 (1), 65-75.
40. A Mahmoodzadeh, **HR Nejati**, N Rezaie, AH Mohammed, (2022). Gaussian process regression model to predict factor of safety of slope stability. *Geomechanics and Engineering* 31 (5).
41. AB Ghazi, A Jamshidi-Zanjani, **H Nejati**, (2022). Utilization of copper mine tailings as a partial substitute for cement in concrete construction. *Construction and Building Materials* 317, 125921.
42. A Mahmoodzadeh, M Mohammadi, H Farid Hama Ali, **H Nejati**, (2022). Prediction of safety factors for slope stability: comparison of machine learning techniques. *Natural Hazards* 111 (2), 1771-1799.
43. A Mahmoodzadeh, M Mohammadi, S Ghafoor Salim, **H Nejati**, (2022). Machine Learning Techniques to Predict Rock Strength Parameters. *Rock Mechanics and Rock Engineering* 55 (3), 1721-1741.

44. A Mahmoodzadeh, **HR Nejati**, M Mohammadi, HH Ibrahim, M Khishe, (2022). Prediction of Mode-I rock fracture toughness using support vector regression with metaheuristic optimization algorithms. *Engineering Fracture Mechanics* 264, 108334.
45. M Imani, **HR Nejati**, K Goshtasbi, A Nazerigivi, (2022). Effect of brittleness on the micromechanical damage and failure pattern of rock specimens. *Smart Structures and Systems* 29 (4), 535-547.
46. AB Ghazi, A Jamshidi-Zanjani, **H Nejati** (2022). Clinkerisation of copper tailings to replace Portland cement in concrete construction. *Journal of Building Engineering* 51, 104275.
47. A Mahmoodzadeh, **HR Nejati**, M Mohammadi, (2022). Optimized machine learning modelling for predicting the construction cost and duration of tunnelling projects. *Automation in Construction* 139, 104305.
48. N Babanouri, M Asadizadeh, **HR Nejati**, (2022). Suggesting new protocol to determine point load strength index of rocks. *Arabian Journal of Geosciences* 15 (13), 1-7.
49. A Mahmoodzadeh, **HR Nejati**, HH Ibrahim, HFH Ali, AH Mohammed, (2022). Several models for tunnel boring machine performance prediction based on machine learning. *Geomechanics and Engineering* 30 (1), 75-91.
50. A Mahmoodzadeh, **HR Nejati**, M Mohammadi, AS Mohammed, (2022). Numerical and Machine learning modeling of hard rock failure induced by structural planes around deep tunnels. *Engineering Fracture Mechanics* 271, 108648.
51. M Noori, G Khanlari, V Sarfarazi, B Rafiei, **HR Nejati**, W Schubert, (2022). Experimental test and numerical simulation of the effect of brittleness on the microfracturing of sandstone. *Bulletin of Engineering Geology and the Environment* 81 (8), 1-27.
52. A Mahmoodzaden, **HR Nejati**, M Mohammadi, HH Ibrahim, S Rashidi, (2022). Meta-heuristic optimization algorithms for prediction of fly-rock in the blasting operation of open-pit mines. *Geomechanics and Engineering* 30 (6), 489-502.
53. A Saedi, A Jamshidi-Zanjani, AK Darban, M Mohseni, **H Nejati**, (2022). Utilization of lead–zinc mine tailings as cement substitutes in concrete construction: Effect of sulfide content. *Journal of Building Engineering* 57, 104865.
54. A Mahmoodzadeh, **HR Nejati**, M Mohammadi, HH Ibrahim, S Rashidi, (2022). Forecasting face support pressure during EPB shield tunneling in soft ground formations using support vector regression and meta-heuristic optimization algorithms. *Rock Mechanics and Rock Engineering* 55 (10), 6367-6386.
55. A Mahmoodzadeh, **HR Nejati**, M Mohammadi, HH Ibrahim, (2022). Assessment of wall convergence for tunnels using machine learning techniques. *Geomechanics and Engineering* 31 (3), 269-276.
56. A Mahmoodzadeh, **HR Nejati**, M Mohammadi, HH Ibrahim, M Khishe, (2022). Developing six hybrid machine learning models based on gaussian process regression and meta-heuristic optimization algorithms for prediction of duration and cost of road. *Tunnelling and Underground Space Technology* 130, 104759.
57. A Mahmoodzadeh, **HR Nejati**, M Mohammadi, HH Ibrahim, S Rashidi, (2022). Forecasting tunnel boring machine penetration rate using LSTM deep neural network optimized by grey wolf optimization algorithm. *Expert Systems with Applications* 209, 118303.
58. A Saedi, A Jamshidi-Zanjani, M Mohseni, AK Darban, **H Nejati**, (2023). Mechanical activation of lead–zinc mine tailings as a substitution for cement in concrete construction. *Construction and Building Materials* 364, 129973.