



## **Masoud Rezaeizadeh**

**Assistant professor**

**Solid Mechanics**

**Faculty of Mechanical and Material Engineering**

**P.O. Box 76315117, Kerman, Iran Ph.D, Shahid Bahonar University, 2010**

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Kerman, Iran*

### **Educations:**

B.Sc., Ferdowsi University of Mashad, 1996

M.Sc., Tehran University, 1999

Ph.D., Shahid Bahonar University, 2010

Sabbatical, University of Queensland, JKMRC Mineral Comminution Circuits, 2009

**Academic areas of expertise:** Stress analysis, Experimental stress analysis, Metal forming, Simulation of dynamic systems using DEM, Fracture Mechanics, mineral processing simulation

**Industrial areas of expertise:** Repair cracks and failures of industrial parts, Condition monitoring, Repair and Maintenance, reverse engineering, Design and manufacture of parts and equipment, Simulation and analysis of mechanical systems, Ball mill&SAG mill simulation, mineral processing simulation

### **Teaching Course:**

**B.Sc.:** Static, Dynamic, Vibration, Mechanics of materials, Design of machine elements I-II, Applied engineering plasticity and metal forming, Material and process in manufacturing

**M.Sc.:** Finite element method, Elasticity, Plasticity, Experimental stress analysis, Metal forming, Creep-Fatigue-Fracture, Advanced machine design

**B.Sc. Supervisor:** more than 100 projects

**M.Sc. Supervisor:** more than 50 projects

**Ph.D. Supervisor:** 1project

**Ph.D. Advisor:** 2projects

#### **Academic appointment:**

- Faculty member of graduate university of advanced technology
- Vice President of Technology Science and Technology Park
- Member of research council of university
- Member of management council of university
- Management of the office of university- industry relationship
- Management of material institute of university
- Member of evaluation committee of science and technology park of Kerman
- Secretary of the Invention Festival 2020

#### **Industrial appointment:**

- Technical and engineering management of Asre Sanat-e Shargh Co. (2years).
- Industrial consulting of Pooya Sanat-e Mojahed Co. (4years).
- Industrial consulting of Azmoon Sanat-e Sina Co.(8years)
- Chairman of the board and R&D manager of Pishro Sanat-e Danesh Faraz Co.(10Years)
- Industrial consulting of Sarcheshmeh Copper Complex Co. (9years).
- Industrial consulting of Midook Copper Complex Co. (4years).
- Industrial consulting of Khatoon Abad Melting Unit Co. (3years).
- Member of research council of Gas Company of Kerman.
- Member of research council of electricity distribution company of south of Kerman.
- Top technologist in Kerman state(2014, 2018)

#### **Publication:**

1. A. Hamzei, E. Jomehzadeh, M. Rezaeizadeh, M. Mahmoodi A Study on Stiffness of a Defective Rippled Graphene Using Molecular Dynamics Simulation, Journal of Solid Mechanics, 2023.
2. M.M. Soleymani, M. Rezaeizadeh, S. Mirzadeh Modeling and multi-objective optimization of operating parameters in semi autogenous grinding mill, Research square, 2022
3. A Dorkha, · A Arab Solghar, · M Rezaeizadeh, Experimental Analysis of Semi-autogenous Grinding Mill Characteristics Under Different Working Conditions, Transactions of Mechanical Engineering, 2019

4. S Bordbara, M Rezaeizadeh, A Kavian, Improving thermal conductivity and corrosion resistance of polyuria coating on internal tubes of gas heater by nano silver, *Progress in Organic Coatings*, 2020
5. E Shafiei Sarvestani, M Rezaeizadeh, E Jomehzadeh . A Bigani, Early Detection of Industrial-Scale Gear Tooth Surface Pitting Using Vibration Analysis, *Journal of Failure Analysis and Prevention*, 2020
6. A. Kamali, M. Rezaeizadeh, E. Jomehzadeh, Experimental Fatigue Life Investigation on a Standard PMMA Compact Tension Specimen Equipped by the Lock Technique, *Journal of Failure Analysis and Prevention*, 2019
7. M. Shahrokhi, E. Jomehzadeh, M. Rezaeizadeh, Piezoelectricity and length scale effect on the vibrational behaviors of circular sandwich micro-plates, *Journal of Sandwich structures & Materials*, 2019
8. M. Shahrokhi, E. Jomehzadeh, M. Rezaeizadeh, Size-dependent Green's function for bending of circular micro plates under eccentric load, *Journal of Solid Mechanics*, 2019
9. M. Jafari, E. Jomehzadeh, M. Rezaeizadeh, Length scale-dependent natural frequencies of piezoelectric microplat, *Journal of Vibration and Contro*, 2018
10. M Akhondizadeh and M Rezaeizadeh, Effect of specimen size and ball size on breakage throughput in the drop-weight test, *Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*, 2018
11. A. Kamali . M. Rezaeizadeh . E. Jomehzadeh, Investigating the Effects of Locks on the Fracture Force and Stress Intensity Using Experimental Photoelasticity, *Journal of Failure Analysis and Prevention*, 2018
12. Mohammad Razani, Abolfazl Masoumi, Masoud Rezaeizadeh and Mohammad Noaparast, Prediction model to estimate the specific energy and product particle size distribution of semi-autogenous mill, *Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*, 2018
13. M. Jafari, E. Jomehzadeh, M. Rezaeizadeh. Length scale-dependent natural frequencies of piezoelectric microplates, *Journal of Vibration and Control*; 2017.
14. M. Razani, A. Masoumi, M. Rezaeizadeh, M. Noaparast, Evaluating the Effect of Feed Particles Size and Their Hardness on the Particle Size Distribution of Semi-Autogenous (SAG) Mill's Product, *Particulate Science And Technology*, 2017.
15. S. Nakhaei, R.H. Agahi, A. Aminian, M. Rezaeizadeh, Discoloration and force degradation of orthodontic elastomeric ligatures, *Dental Press Journal of Orthodontics*, 2017
16. M. Akhondizadeh, M. Rezaeizadeh, Experimental investigation of the effect of energy on the ore breakage, *Mechanics and Industry*, *Journal of Central South University* 2017.
17. M. Akhondizadeh, M.fooladi, M. Rezaeizadeh, S.H. Mansouri, Prediction of tumbling mill liner wear: Abrasion and impact effects, *Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology*, 2016
18. Soleymani M. M., Fooladi M., Rezaeizadeh M., 2015, Effect of Slurry Pool Formation on the Load Orientation, Power Draw, and Impact Force in Tumbling Mills, *Journal of Powder Technology*.
19. Soleymani M. M., Fooladi M., Rezaeizadeh M., 2015, Experimental investigating of the power draw of tumbling mills in wet grinding, *IMEchE, Part C, Journal of Mechanical Engineering Science*
20. Soleymani M. M., Fooladi M., Rezaeizadeh M., 2015, Experimental study the impact forces of tumbling mills in wet grinding, *IMEchE, Part E, Journal of Process Mechanical Engineering*
21. Soleymani M. M., Fooladi M., Rezaeizadeh M., Bahiraie M., Experimental study of mill speed, charge filling, slurry concentration, and slurry filling on the wear of lifters in tumbling mills, *Modares Mechanical Engineering*, Vol. 15, No. 4, pp. 265-271, 2015
22. M. Akhondizadeh, M.fooladi, M. Rezaeizadeh, S.H. Mansouri, A new procedure of impact wear evaluation of mill liner, *International Journal of Engineering*, 2015

23. M. Akhondizadeh, M. Fooladi, M. Rezaeizadeh, S.H. Mansouri, Modeling impact wear by using the Archard equation and a contact model, Journal of the Balkan Tribological Association., 2015
24. M. Akhondizadeh, M. Fooladi, M. Rezaeizadeh, S.H. Mansouri, Experimental investigation of the impact wear, Mechanics & Industry, 2014
25. M. Akhondizadeh, M. Fooladi, M. Rezaeizadeh, S.H. Mansouri, A computational wear model of the oblique impact of a ball on the flat PLATE, Journal of solid mechanics, 2013
26. M. Akhondizadeh, M. Fooladi, M. Rezaeizadeh, S.H. Mansouri, Propose a new model for prediction of the impact wear using an experimental method, Journal of solid mechanics, 2013
27. M. Akhondizadeh, M. Fooladi Mahani, M. Rezaeizadeh, S. H. Mansouri Load behavior prediction in a tumbling mill, Applied Mechanics and Materials, 2013
28. Rezaeizadeh, M., Fooladi, M., Powell, M.S., Weerasekara, N.S., An Experimental Investigation of the Effects of Operating Parameters on the Wear of Lifters in Tumbling Mills. Minerals engineering, 2010, 23, 558-562.
29. Rezaeizadeh, M., Fooladi, M., Powell, M.S., Mansouri, S.H. Weerasekara, N.S., A New predictive Model of Lifter Bar Wear in Mills. Minerals engineering.(2010. published)
30. Rezaeizadeh, M., Fooladi, M., Powell, M.S., Mansouri, S.H., Experimental observations of lifter parameters and mill operation on power draw and liner impact loading(2010. published)
31. Rezaeizadeh, M., Fooladi, M., Powell, M.S., Mansouri, S.H., A New Predictive Model of Power Draw of Tumbling Mills Based on Gravity and Friction Forces. Int. J. Min. Proces.
32. Rezaeizadeh, M., Fooladi, M., Powell, M.S., Mansouri, S.H. Weerasekara, N.S., Investigation of effects of number of lifters, lifter height, and speed on mill operation using 3D DEM Int. J. Min. Proces.
33. M. Rezaeizadeh, M. Akhondizadeh, M. Fooladi Mahani, S. H. Mansouri Experimental investigation of the effect of energy on the mineral rock fracture, Part I: mineral rocks Int. J. Min. Proces.
34. M. Rezaeizadeh, M. Akhondizadeh, M. Fooladi Mahani, S. H. Mansouri A new method of prediction of charge profile in tumbling mill Int. J. Min. Proces.
35. Study of lifter profile of SAG mills effect on energy and tumbling by using 3d DEM NMEC2005
36. Study of lifter profile and speed of SAG mills on impact forces, moment and tumbling by using 3D DEM, ISME2008.
37. Simulation of compacting in powder metallurgy and study of speed and friction on operation of die by 3D DEM, ISME2008.
38. Vibration analysis in machine tool using simulation method. The National Conference of manufacturing, 2007.
39. Kinetic and kinematic simulation of SAG mill contents using extraction dimensionless parameters and compared with DEM. International Conference of Iranian Society of Mechanical Engineers, 2007.
40. Satellite gravity gradient boom design for a style using systematic design methodology. Aerospace Conference, Khaje Nasiraddin Tusi University, 2010.
41. Feasibility of lead- oxide anodes Cobalt powder metallurgy method Iranian National Corrosion Congress 2009.
42. Evaluation of different factors in shaping the micro tubes, Conference Production 2011.
43. The effect of geometrical parameters on the behavior of the failure of a piece of equipment with numerical method, International Conference on Mechanical and advanced technology, 2012.
44. Evaluation the shape of the micro tube wall with numerical method, International Conference on Mechanical and advanced technology, 2012.

45. The effect of geometrical parameters on fracture behavior in the industrial segment, the International Conference on Mechanical Engineering and Advanced Technologies, 2012.
46. Evaluation the formation of micro tubes with numerical method, The International Conference on Mechanical Engineering and Advanced Technologies 2012.
47. Evaluation wear phenomena in the SAG liners using discrete element method, the International Congress new research on Engineering, 2012
48. The effect of the angle and number of liners on the speed, power and tumbling in SAG mill using discrete element method, International Congress new research on Engineering, 2012.
49. The application of nanoscience in oil refrigeration, Air conditioning and industrial hygiene third National Conference 2012.
50. Stress analysis of cold rolling process of aluminum using finite element simulation, the National Conference of Mechanical Engineering 2012.
51. The effect of the mechanical properties of aluminum alloys in the cold rolling on residual stress distribution using finite element simulation, The National Conference on Applied Research in Engineering Science 2012.
52. Investigation of changes in residual stress distribution by changing the diameter of the roller and rolling force in the cold rolling process of the aluminum cylinder, The national conference on applied research in science and engineering 2012.
53. The effect of particle size on load profiles and forces within the real mill, twenty -first annual meeting of the International Mechanical Engineering 2012.
54. Evaluate the performance of SAG mill Sarcheshmeh Copper Complex using the vibration, acoustic and thermal signal, third acoustic and vibration International Conference 2013.
55. Monitoring the dynamic behavior of the contents of the SAG mill using processing of sound waves, Third International Conference of Acoustics and Vibration 2013.
56. Severe plastic deformation using rolling process, the Conference of Mechanical Engineering 2013.
57. Effective Micro-shaping parameters of metal pipe in flaring testing using numerical method, Conference of Mechanical Engineering 2013.
58. The effect of particle size on load profiles and forces within the real mill, International Conference on Mechanical Engineering and Advanced Technologies 2013.
59. Evaluate the performance of SAG mill Sarcheshmeh Copper Complex by vibration and thermal signal, the eighth monitoring and troubleshooting Conference of Iran, Sharif University of Technology 2013.
60. Evaluation effective parameters of SAG mill of Sarcheshmeh Copper Complex and improve its performance by the neural network, the National Conference of Mechanical Engineering 2013.
61. The Crack growth controlling in the rolling process of micro alloyed steel 30msv6 and effect parameters, the twenty- second annual International Conference of Mechanical Engineering 2014.
62. Laboratory study of particle kinetics and impact behavior of the SAG mill content of Sarcheshmeh Copper Complex, the twenty- second annual International Conference of Mechanical Engineering 2014.
63. Investigation of severe vibration effects in Sarcheshmeh copper complex mill and its relationship with the gear resonance, acoustic and vibration international conferences 2014.
64. Investigation of mill vibration in Sarcheshmeh copper complex and its relationship with the wear and cracks of mill gear, international conferences acoustic and vibration 2014.
65. Troubleshooting of ball mill motor of Sarcheshmeh Copper Complex using EMD-FFT vibration analysis, the ninth conference of monitoring and troubleshooting (superior article) 2014.
66. Effect of Slurry Pool Formation on the Load Orientation, Power Draw, and Impact Force in Tumbling Mills, the National Congress of iron and steel, 2014.

### **Industrial Experience and Projects:**

- Industrial research project: (Design and implementation of automatic control system and online monitoring of SAG mill in Meydook Copper Cmplx- 3years)
- Industrial research project: (Design and implementation of automatic control system and online monitoring mine to mill Meydook Copper Complex- doing)
- Industrial research project: (Design and construction of laboratory trommel screen in Meydook Copper Cmplx- 1years)
- Industrial research project: (Design and implementation of sound control system and of SAG mill in Meydook Copper Cmplx (new method)- 1years)
- Industrial research project: (Optimization of SAG mill performace of sarcheshmeh copper complex- 2years)
- Industrial research project: (Investigation of factor affecting gear failure and its monitoring to prevent the growth of cracks in Meydook SAG mill- 2years)
- Project Manager: (Reconstruction of ball mill gear in sarcheshmeh copper complex- 1year)
- Industrial project: crack repair of mining machine using metal lock and welding process- 5 projects)
- Industrial project: cylinder crack repair
- Industrial project: ball mill condition monitoring(vibration, thermal and sound analysis)
- Design and fabrication of CAD-CAM cutting machine
- Design and fabrication of under powder welding machine
- Design and fabrication of pump test instrument
- Design and fabrication of mini loaders machine
- Design and fabrication of drop weight test machine(2unit)
- Design and fabrication of advanced experimental ball mill
- Design and fabrication of measuring device for impact wearing
- Design and fabrication of measuring device for vibration analysis
- Design and fabrication of slurry pressure break valve
- Design and fabrication of journal bearing
- Design and fabrication of slurry pressure break valve
- Design and fabrication of industrial jig and fixture
- Design and fabrication of fatigue test instrument for car swivel
- Design and fabrication of portable boring machine
- Design and fabrication of fatigue test instrument for car swivel
- Design and fabrication of measuring device for abrasive wearing
- Design and fabrication of brittle coating test
- Preparing more than 200 technical documents for different industrial parts

#### **Patents:**

- Experimental SAG mill
- Effect of micro- and nano- silicon carbide particles on the microstructure , hardness and wear properties of composite piston alloy by casting semi-solid
- Electrical power generation using floating and emersion forces.
- A device for measuring mechanical wear due to impact forces on a plate
- A new method for pipe bending using flexible mandrel
- A new instrument for drop weight test
- A new portable boring machine

**Industrial training courses:**

Machine design components using professional software, modeling and drawing using professional software, technical drawing, technical inspection, material selection in mechanical engineering, tools selection, manufacturing process

**Software skills:**

AutoCAD, Mechanical Desktop, ABAQUS, WorkingModel, Solid Work, Matlab, Maple, Cosmos, DEM