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First name: Mohammad Ali, Last name: Mohtadi Bonab

Education

- **PDF,** Mechanical Engineering, University of Windsor, Windsor, ON, Canada: October 2015 – Present
- **Ph.D.,** Mechanical Engineering, University of Saskatchewan, Saskatoon, SK, Canada: January 2012 – August 2015
  Thesis: Mechanism of failure by hydrogen–induced cracking in pipeline steel
- **M.Sc.,** Mechanical Engineering (Applied Mechanics), Iran University of Science and Technology, Tehran, Iran: September 2000 – December 2002
  Thesis: Estimation of elastic stress intensity factor in steel specimens under projectile loading conditions
- **B.Sc.,** Mechanical Engineering (Mechanics of Solids Design), University of Tabriz, Tabriz, Iran: September 1996 – September 2000

Skills

- Experienced mechanical engineer with strength in design of mechanical systems
- Proficient with a broad spectrum of materials/processes: metals, alloys, pipeline steels
- Expert in materials selection, metallography, macro and microstructure characterization using SEM–EBSD, EDX, XRD, sample preparation and results interpretation
- Familiar with Solid computer skills (AutoCAD, ANSYS and Microsoft Office)
- Experienced in materials deformation, failure analyses and mechanical properties measurement machines including tensile test, hardness and toughness measurements and fractography
- Experienced in 2D and 3D finite element modeling at the area of fracture mechanics
- Skilled in electrochemical tests to evaluate hydrogen induced cracking and stress corrosion cracking susceptibility in pipelines steels
- Possess strong presentation and communication skills developed through years of teaching experience and international conference presentations
- Ability to work in a challenging and fast paced environment and interact productively with people from diverse background

Research and Teaching Experiences

- Instructed Strength of Materials I&II, Material Science, Statics, Mechanical Vibrations and Industrial Drawings courses for undergraduate students, University of Bonab, Iran, 2005–2011.
- Instructed Strength of Materials Lab, Metallography Lab and Mechanical Vibrations Lab for undergraduate students, University of Bonab, Iran, 2005–2011.
- Completed a research project by the title of "evaluation of stress intensity factor and J–integral in spot welded joints under tensile and compression loading conditions", University of Bonab, Iran, 2009–2011.
- Instructed hands on Wheatstone Bridge Circuits Lab (determination of modulus

elasticity in steel and aluminum specimens) for undergraduate students, University of Saskatchewan, Canada, 2013–2014.

- Trained users for SEM and EBSD lab, University of Saskatchewan, Canada, 2013–2015.
- Trained for working with hazardous chemicals, labs and instruments safety, certified for WHMIS.
- Teaching assistant for Structure and Properties of Polycrystalline Materials course, University of Saskatchewan, Canada, 2013–2014.
- Published experimental and theoretical results in 20 refereed international journal articles.

Quality Control Engineer, Kaveh Precision Tubes, Saveh, Iran, 2002–2003.

- Evaluate the quality of cold drawn pipes based on ASTM standards, mechanical tests and non–destructive experiments.
- Participated in technical meetings with cooperating companies.
- Prepare reports for customers on the full results of demonstration.

Faculty Member, University of Bonab, Bonab, Iran, 2005–2012.

- Taught the mechanical engineering courses each year.
- Dean of Engineering, University of Bonab, 2006–2009.
- Manager of mechanical engineering group, 2009–2010.
- Research manager of University of Bonab, 2010–2011.
- Counselor of mechanical engineering students in undergraduate program.
- Cooperation with the Lab supervisors to obtain the needed facilities for Labs.
- Supervised 10 undergraduate mechanical engineering students for their B.Sc. thesis
- Managed, assembled and constructed several undergraduate labs including mechanical vibrations and strength of materials.

Work Experiences

- 2014 SK Innovation & Opportunity Scholarship, University of Saskatchewan.
- Mechanical Department scholarship 2013, University of Saskatchewan.
- The best mathematic score in M.Sc. entrance examination among all participants in Iran.
- Selected as the best faculty member at University of Bonab for three semesters.
- Selected paper as one of top 25 hottest articles in Journal of Engineering Failure Analysis.
  M.A. Mohtadi–Bonab, J.A. Szpunar, S.S. Razavi–tousi, A comparative study of hydrogen induced cracking behavior in API 5L X60 and X70 pipeline steels, Engineering Failure Analysis 33 (2013) 163–75.
- Reviewer of Elsevier and springer journals including Material and design, International Journal of Hydrogen Energy and Journal of Material Engineering and performance.

Honors and Awards

Journal Publications

- **M.A. Mohtadi-Bonab**, J.A. Szpunar, S.S. Razavi-tousi, A comparative study of hydrogen induced cracking behavior in API 5L X60 and X70 pipeline steels, Engineering Failure Analysis 33 (2013) 163–75.
- **M.A. Mohtadi-Bonab**, J.A. Szpunar, R. Stankiewich, Evaluation of hydrogen induced cracking behavior of API X70 pipeline steel at different heat treatments, International Journal of Hydrogen Energy, 39 (2014) 6076–6088.
- **M.A. Mohtadi-Bonab**, J.A. Szpunar, S.S. Razavi-tousi, Hydrogen induced cracking susceptibility in different layers of a hot rolled X70 pipeline steel, International Journal of Hydrogen Energy 38 (2013) 13831–13841.
- **M.A. Mohtadi-Bonab,** M. Eskandari, J.A. Szpunar, Texture, local misorientation, grain boundary and recrystallization fraction in pipeline steels related to hydrogen induced cracking, Materials Science & Engineering A 620 (2015) 97–106.
- **M.A. Mohtadi-Bonab,** J.A. Szpunar, R. Basu, M. Eskandari, The mechanism of failure by hydrogen induced cracking in an acidic environment for API 5L X70 pipeline steel, International Journal of Hydrogen Energy, 40 (2015) 1096–1107.
- **M.A. Mohtadi-Bonab,** KMM Rahman, R. Ouellet, M. Eskandari, J.A. Szpunar, An assessment of mechanical behavior and frachtography of pipeline steels with crack nucleation and propagation approach, Under Review.
- **M.A. Mohtadi-Bonab,** M. Eskandari, J.A. Szpunar, Evaluation of deformation and annealing textures in pipeline steel and their role on hydrogen induced cracking susceptibility, Under Review.
- M. Eskandari, A. Zarei-Hazanki, **M.A. Mohtadi-Bonab**, A.G. Odeshi, J.A. Szpunar, Microstructure and texture evolution in 21Mn–2.5Si–1.6Al–Ti steel subjected to dynamic impact loading, Materials Science & Engineering A, 622 (2015) 160–167.
- Roohollah Jamaati, Mohammad Reza Toroghinejad, **M.A. Mohtadi-Bonab**, Hossein Edris, Jerzy A. Szpunar, Mohammad Reza Salmani, Comparison of microparticles and nanoparticles effects on deformation texture of steel-based composite and nanocomposite fabricated by the ARB process, Materials Science & Engineering A 607 (2014) 173–187.
- Roohollah Jamaatia, Mohammad Reza Toroghinejad, **M.A. Mohtadi-Bonab,** Hossein Edris, Jerzy A. Szpunar, Mohammad Reza Salmani,The effect of SiC nanoparticles on deformation texture of ARB-processed steel-based nanocomposite, Materials Characterization 93 (2014) 150 – 162.
- S. Hassanifard, **M.A.Mohtadi Bonab**, Gh. Jabbari, Investigation of Fatigue Crack Propagation in Spot-Welded Joints Based on Fracture Mechanics Approach, Journal of material engineering and performance 22 (2013) 245–250.
- M. Eskandari, A. Zarei-Hanzaki, J.A. Szpunar, **M.A. Mohtadi-Bonab**, A.R. Kamali, M. Nazarian-Samani, Microstructure evolution and mechanical behavior of a new microalloyed high Mn austenitic steel during compressive deformation, Materials Science & Engineering A, 615 (2014) 424–435.
- M. Eskandari, A. Zarei-Hanzaki, A.R. Kamali, **M.A. Mohtadi-Bonab**, and J.A. Szpunar, Strain Hardening During Hot Compression Through Planar Dislocation and Twin-Like Structure in a Low-Density High-Mn Steel, Journal of Material Engineering and Performance, 23 (2014) 3567–3576.
- M. Eskandari, M.R. Yadegari-Dehnavi, A. Zarei-Hanzaki, **M.A. Mohtadi-Bonab,** R. Basu, J.A. Szpunar, In-situ strain localization analysis in low density transformation-twinning induced plasticity steel using digital image correlation, Optics and Lasers in Engineering 67 (2015) 1–16.
- Roohollah Jamaati, Mohammad Reza Toroghinejad, **M.A. Mohtadi-Bonab**, Hossein Edris, Jerzy A. Szpunar, and Mohammad Reza Salmani, Texture Development of ARB-Processed Steel-Based Nanocomposite, Journal of Material

Engineering and Performance, 23 (2014) 4436–4445.

- M. Eskandari, **M.A. Mohtadi-Bonab,** R. Basu, M. Nezakat, A. Kermanpur, J.A. Szpunar, S. Nahar, and A.H. Baghpanah, Preferred Crystallographic Orientation Development in Nano/Ultrafine-Grained 316L Stainless Steel During Martensite to Austenite Reversion, Journal of Material Engineering and Performance, 24 (2015) 644–653.
- Ritwik Basu, Jerzy Szpunar, Mostafa Eskandari, **M. A. Mohtadi-Bonab**, A systematic investigation on the role of microstructure on phase transformation behavior in Ni-Ti-Fe shape memory alloys, Journal of Alloys and Compounds, 645 (2015) 213–222.
- Ritwik Basu, Jerzy Szpunar, Mostafa Eskandari, **M. A. Mohtadi-Bonab**, Microstructural investigation on marforming and conventional cold deformation in Ni –Ti – Fe based shape memory alloys, Accepted in International Journal of Materials Research, 2015.
- Ritwik Basu, **M.A. Mohtadi-Bonab**, Xu Wang, Mostafa Eskandari, Jerzy A. Szpunar, Role of microstructure on phase transformation behavior in Ni–Ti–Fe shape memory alloys during thermal cycling, Journal of Alloys and Compounds, 652 (2015) 459–469.
- M. Eskandari, **M.A. Mohtadi-Bonab**, J.A. Szpunar, Evolution of the microstructure and texture of X70 pipeline steel during cold-rolling and annealing treatments, Materials and Design, 90 (2016) 618–627.

Conference Papers

- **M.A. Mohtadi-Bonab**, J.A. Szpunar, Hydrogen induced crack nucleation and propagation in an API X70 pipeline steel, 26th Canadian Materials Science Conference, Saskatoon, June 1 - 4, 2014.
- R. Basu, J. Szpunar, M. Eskandari, **M.A Mohtadi-Bonab**, Marforming: A novel method for grain refinement in Ni-Ti based shape memory alloys, 26th Canadian Materials Science Conference, Saskatoon, June 1 - 4, 2014.
- Gh. Jabbari, **M.A.Mohtadi-Bonab,** R. Karimdadashi, "Estimation of stress intensity factors in notched components subjected to loaded projection conditions" Accepted and Published in National Conference of Azad University of Shiraz, Iran, March, 2011 (in Persian).

Activities and Interests

- Play squash and soccer.
- Fluent in English, Turkish and Persian.
- Solve the advanced problems in mathematics.