



PERSONAL INFO.

Hossein Talebi-Ghadikolaee

Mechanical Engineering (Dr. Eng.)

**Assistant professor, Faculty of
Mechanical Engineering, University
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ResearcherID: AAC-1599-2022

Education

- 2015- 2020 ***Ph.D. in Mechanical Engineering, Manufacturing Engineering Group***
Department of Mechanical Engineering, Faculty of Engineering,
Tarbiat Modares University, Tehran, Iran,
● Overall GPA: 19.26/20
● Thesis Title: Experimental and theoretical investigation of fracture in roll forming process of aluminum alloy 6061-T6 channel section using phenomenological criteria,
Supervisor : Prof. Hassan Moslemi Naeini
- 2013- 2015 ***M.Sc. in Mechanical Engineering, Manufacturing Engineering Group***
Department of Mechanical Engineering, Faculty of Engineering,
Babol Noshirvani University of Technology, Babol, Mazandaran, Iran,
● Overall GPA: 19.32/20
● Thesis Title: Experimental and numerical Study of the rubber characteristics effects on manufacturing of metallic bipolar plate using rubber pad forming process,
Supervisor: Assoc. Prof. Majid Elyasi
- 2009- 2013 ***B.Sc. in Mechanical Engineering, Manufacturing Engineering Group***
School of Mechanical Engineering, Department of Manufacturing,
Babol Noshirvani University of Technology, Babol, Mazandaran, Iran,
● Overall GPA: 17.17/20

Research interest

- Metal Forming processes
- Polymer Electrolyte Membrane Fuel Cells (Fabrication of Metallic Bipolar plates)
- Dynamic and Quasi-Static Mechanical Characterization of Material
- Fracture and Mechanical Behavior of Additively Manufactured Product
- Ductile Fracture Analysis
- Plasticity
- Sheet Metal Forming (Mechanical and Formability testing, Micro forming, Material anisotropy, Non-linear deformation loading, High strain rate deformation, Hot forming, Finite element modeling)
- Ductility and Ductile Damage Prediction
- Deformation Mechanics

Research experience, project and work experience

- Co-PI of the International Joint Research (Project No., 96004204)

- Tarbiat Modares University/ Russian Academy of Sciences (**Prof. Sergei Alexandrov**)
- Title: Development of an experimental/theoretical method for the prediction of ductile fracture in roll forming processes

- Co-PI of the National Research Project

- Babol Noshirvani University of Technology/ Mavadkaran Engineering Co.Ltd (MAPNA group)
- Title: Rotary roll forming of Hastelloy-X superalloy

- PI of the Research Project

- Malek Ashtar University/ Northern Research Center for Science and Technology
- Title: Investigation of Bending Angle in Laser Forming of High Strength Steel applied in Hall Structure.

- PI of the Research Project

- Malek Ashtar University/ Northern Research Center for Science and Technology
- Title: Manufacturing of Metallic Bipolar Plates

-Research Cooperation with Industries

- Tose'e Fanavari Felez Pishro Co.
- Title: Development of roll forming process for asymmetric and pre notched profile

Honor and awards

- Member of **National Elite Foundation**.

- **3rd rank**, Nationwide Ph.D. entrance exam in Mechanical Engineering in year 2015.

- **Ranked 5th** among all Masters Students of Mechanical Engineering (**Top 10%**)

- **1st rank**, Achieving the highest GPA among all Babol Noshirvani University of Technology Mechanical Engineering Undergraduate students.

- **1st rank**, Achieving the highest GPA among all Tarbiat Modares University Mechanical Engineering Postgraduate students.

Honor and awards

- **1st team rank**, First national Hydrogen Fuel Cell Car Race Contest along with the "TOSAN" team members, Khaje Nasir University of Technology, Tehran, Iran.
- The winner of the **Best Dissertation Award** of the Tarbiat Modares University
- The winner of the **Best Dissertation Award** in ICME2021

Courses

Lectureship in the following subjects:

- Industrial drawing, University of kashan, Kashan, Isfahan, Iran..
- Heat treatment, University of kashan, Kashan, Isfahan, Iran.
- Engineering metrology and measurements, University of kashan, Kashan, Isfahan, Iran.
- Metallurgy in manufacturing, University of kashan, Kashan, Isfahan, Iran.
- Non-destructive testing, University of kashan, Kashan, Isfahan, Iran.

Publications

*Conference Papers:

- 1- **Ghadikolaee, H.T.**, Elyasi, M., and Hosseinzadeh, M., 2015. Experimental Investigation of The Effect of Rubber Layers Characteristics on Channel Depth of Bipolar Plate in Rubber Pad Forming Process, 3rd Hydrogen and Fuel Cell conference. (in Persian)
- 2- Ahmadi Khatir, F., Imani Shahabad, S., **Talebi Ghadikolaee, H.**, Elyasi, M., 2016. "Study on forming of fuel cell metallic bipolar plate's micro-channels in rubber pad forming process" In the 5th International Conference on Electrical, Computer, Mechanical and Mechatronics Engineering.
- 3- **Ghadikolaee, H.T.**, Elyasi, M., and Hosseinzadeh, M., 2015. Experimental and Numerical Investigation of The Effect of Rubbers Characteristics on Forming of Bipolar Plates Micro-Channels in Rubber Pad Forming Process, 2nd National Clean and New Energy Management Conference. (in Persian)
- 4- Talebi-Ghadikolaee, H., Naeini, H.M., Mirnia, M.J., Mirzai, M.A., Alexandrov, S. and Gorji, H. Investigation of critical damage limit for ductile fracture prediction of AA6061-T6, 9th International Conference & Exhibition on Materials Science & Metallurgical Engineering (iMat2020). (in Persian)
- 6- S. Zeinali, H. Naeini, **H. Talebi-Ghadikolaee**, V. Panahizadeh, Investigation of the calibration of Lou-Huh ductile fracture criterion for fracture prediction during plastic deformation of AA6061-T6, 9th International Conference & Exhibition on Materials Science & Metallurgical Engineering (iMat2020). (in Persian)
- 7- H. Talebi, MM. Barzegari, S. Seddighi, Investigation of lubricant effect on directional thickness distribution of U-shaped micro channels of bipolar plates, 11th Iranian Fuel Cell Seminar, 2022.
- 8- H. Yousefian, H. Moslemi, Y. Dadgar Asl, H. Talebi, Experimental and numerical investigation of twisting defect during roll forming process. The 19th National Conference and 8th International Conference on Manufacturing Engineering, 2023.

** Journal Papers:

- 1- Elyasi, M., **Talebi Ghadikolaee, H.** and Hosseinzadeh, M., 2016. Investigation of dimensional accuracy of metallic bipolar plate's micro channel in rubber pad forming process. Modares Mechanical Engineering, 15(12), pp.461-471. (in Persian)

Publications

- 2- **Talebi Ghadikolaee, H.**, Elyasi, M. and Hosseinzadeh, M., 2016. Investigation of the effect of rubber layers thickness on forming of bipolar plate's micro channels in rubber pad forming process, *Iranian Journal of Manufacturing Engineering*, 2(4), pp.57-69. (in Persian)
- 3- Khatir, F.A., Elyasi, M., **Ghadikolaee, H.T.** and Hosseinzadeh, M., 2017. Evaluation of effective parameters on stamping of metallic bipolar plates. *Procedia Engineering*, 183, pp.322-329.
- 4- **Ghadikolaee, H.T.**, Elyasi, M., Khatir, F.A. and Hosseinzadeh, M., 2017. Experimental investigation of Fracture in rubber pad forming of bipolar plate's micro channels. *Procedia engineering*, 207, pp.1647-1652.
- Elyasi, M., **Ghadikolaee, H.T.** and Hosseinzadeh, M., 2017. Fabrication of metallic bipolar plates in PEM fuel cell using semi-stamp rubber forming process. *The International Journal of Advanced Manufacturing Technology*, 92(1-4), pp.765-776.
- 6- Elyasi, M., **Ghadikolaee, H.T.** and Hosseinzadeh, M., 2018. Investigation of dimensional accuracy in forming of metallic bipolar plates with serpentine flow field. *The International Journal of Advanced Manufacturing Technology*, 96(1-4), pp.1045-1060.
- 7- **Talebi-Ghadikolaee, H.**, Naeini, H.M., Mirnia, M.J., Mirzai, M.A., Alexandrov, S. and Gorji, H., 2019. Experimental and numerical investigation of failure during bending of AA6061 aluminum alloy sheet using the modified Mohr-Coulomb fracture criterion. *The International Journal of Advanced Manufacturing Technology*, 105(12), pp.5217-5237.
- 8- **Talebi-Ghadikolaee, H.**, Maleki, A., Ahmadi, A., 2019. Numerical Investigation of Bending Angle and Entropy Generation in Laser Forming of High Strength Steel, *Journal of Solid and Fluid Mechanics*, 9(4), pp.151-166.
- 9- **Talebi-Ghadikolaee, H.**, Naeini, H.M., Mirnia, M.J., Mirzai, M.A., Gorji, H. and Alexandrov, S., 2020. Fracture analysis on U-bending of AA6061 aluminum alloy sheet using phenomenological ductile fracture criteria. *Thin-Walled Structures*, 148, p.106566.
- 10- **Talebi-Ghadikolaee, H.**, Naeini, H.M., Mirnia, M.J., Mirzai, M.A., Alexandrov, S. and Zeinali, M.S., 2020. Modeling of ductile damage evolution in roll forming of U-channel sections. *Journal of Materials Processing Technology*, p.116690.
- 11- **Talebi-Ghadikolaee, H.**, Elyasi, M. and Mirnia, M.J., 2020. Investigation of failure during rubber pad forming of metallic bipolar plates. *Thin-Walled Structures*, 150, p.106671.
- 12- **Talebi-Ghadikolaee, H.**, Naeini, H.M., Mirnia, M.J., Mirzai, M.A., Gorji, H. and Alexandrov, S., 2020. Study of the Effect of Calibration Procedure on the Accuracy of the Phenomenological Ductile Fracture Criteria in Sheet Metal Forming, *Journal of Solid and Fluid Mechanics*.
- 13- Ghaffari, TTR., Naeini, H., Kasaei, MM., **Talebi-Ghadikolaee, H.**, 2020. Numerical and Experimental Study on Guillotine Shearing of a Complex Profile Produced by Roll Forming process, *Journal of Solid and Fluid Mechanics*.
- 14- **Talebi-Ghadikolaee, H.**, Naeini, H.M., Mirnia, M.J., Mirzai, M.A., Gorji, H. and Alexandrov, S., 2020. Ductile Fracture Prediction of AA6061-T6 in Roll Forming Process. *Mechanics of Materials*, 103498.
- 15- V. Modanloo, **H. Talebi-Ghadikolaee**, V. Ali Mirzaloo, M. Elyasi, 2021. Fracture prediction in stamping of titanium bipolar plate for PEM fuel cells, *Thin-Walled Structures*, 46, pp. 5729-5739.
- 16- **Talebi-Ghadikolaee, H.**, Barzegari, MM., 2021. Experimental and Numerical Investigation of the Plastic Deformation of Metallic Bipolar Plates with Serpentine Flow Filed, *AUT Journal of Mechanical Engineering*.
- 17- **Talebi-Ghadikolaee, H.**, Barzegari, M. M., Ahmadi Khatir, F., & Seddighi, S. (2022). Numerical-experimental study on the thickness distribution of metallic bipolar plates for PEM fuel cells. *Iranian Journal of Hydrogen & Fuel Cell*, 9(1), 1-18.
- 18- Khatir, F. A., Barzegari, M. M., **Talebi-Ghadikolaee, H.**, & Seddighi, S. (2021). Integration of design of experiment and finite element method for the study of geometrical parameters in metallic bipolar plates for PEMFCs. *International Journal of Hydrogen Energy*, 46(79), 39469-39482.
- 19- Zohrabi, M., Mazdak, S., **Talebi-Ghadikolaee, H.** (2021). Selection of Appropriate Ductile Fracture Criterion to Predict Failure of Folded Cross Section Profiles in Reshaping Process. *Iranian Journal of Manufacturing Engineering*, 8(8), 24-37.
- 20- Zeinali, MS., Naeini, H., **Talebi-Ghadikolaee, H.**, Panahizadeh, V., (2022). Numerical and Experimental Investigation of Fracture in Roll Forming Process using Lou-Huh Fracture Criteria, *Arabian Journal for Science and Engineering* (Accepted)
- 21- **H. Talebi-Ghadikolaee**, H. Moslemi Naeini, E. (2022) Talebi Ghadikolaee, Predictive modeling of damage evolution and ductile fracture in bending process, *Materials Today Communications*.
- 22- **H. Talebi-Ghadikolaee**, H. Moslemi Naeini, A. Rabiee, A. Beigi, (2022) Experimental-Numerical Analysis of Ductile Damage Modeling of Aluminum Alloy Using a Hybrid Approach: Ductile Fracture Criteria and Adaptive Neural-Fuzzy System (ANFIS), *International Journal of Modelling and Simulation*.
- 23- Talebi-Ghadikolaee, H., Ahmadi Khatir, F., & Seddighi, S. (2022). Numerical-experimental study on the thickness distribution of metallic bipolar plates for PEM fuel cells. *Hydrogen, Fuel Cell & Energy Storage*, 9(1), 1-18.
- 24- V. Modanloo et al, (2022). The study of forming of steel cups using hydrodynamic deep drawing process. *Iranian Journal of Manufacturing Engineering*

Publications

- 25- **Talebi-Ghadikolaee, H.**, Elyasi, M., Dadgar Asl, Y., Zeinolabedin Beygi, A., & Davoudi, M. (2022). Feasibility of Forming U-Shaped Microchannels by Flexible-Die Forming Process. *Karafan Quarterly Scientific Journal*, 19(3), 53-70.
- 26- Modanloo et al, (2022). Investigation of process parameters of the hydrodynamic deep drawing assisted by radial pressure using Taguchi and finite element methods, *Iranian Journal of Manufacturing Engineering*.
- 27- **Talebi-Ghadikolaee, H.**, Barzegari, M. M., & Seddighi, S. (2023). Investigation of deformation mechanics and forming limit of thin-walled metallic bipolar plates. *International Journal of Hydrogen Energy*, 48(11), 4469-4491.
- 28- Elyasi, M., Modanloo, V., **Talebi Ghadikolaee, H.**, Ahmadi Khatir, F., & Akhouni, B. (2023). Investigating the effect of heat treatment in hydraulic rotary draw bending of AA6063 tubes. *Modares Mechanical Engineering*, 23(4), 257-264.
- 29- Seddighi, S., Barzegari, M. M., & **Talebi-Ghadikolaee, H.** (2023). Numerical-experimental investigation of using rubber blank holder on wrinkling of metallic bipolar plates formed by stamping process. *International Journal of Hydrogen Energy*.
- 30- Talebi Ghadikolaee, H., Seddighi, S., & Barzegari, M. M. (2023). Study of the forming process effects on the wrinkling and thinning percentage of the micro-channels with serpentine layout. *Hydrogen, Fuel Cell & Energy Storage*, 10(1), 81-93.
- 31- Hajiahmadi, S., Moslemi Naeini, H., Talebi-Ghadikolaee, H., Safdarian, R., & Zeinolabedin Beygi, A. (2023). A study on spring-back of pre-punched profiles in cold roll forming process. *Karafan Quarterly Scientific Journal*.
- 32- Modanloo, V., Akhouni, B., Khatir, F. A., Talebi-Ghadikolaee, H., & Mashayekhi, A. (2023). Investigation of the effect of process parameters in sheet hydroforming process. *International Journal on Interactive Design and Manufacturing (IJIDeM)*, 1-10.
- 33- Modanloo, V., Elyasi, M., Talebi-Ghadikolaee, H., Khatir, F. A., & Akhouni, B. (2023). The use of MCDM techniques to assess fluid pressure on the bending quality of AA6063 heat-treated tubes. *Journal of Engineering Research*.
- 34- **H. Talebi-Ghadikolaee**, M. Elyasi, V. Modanloo, (2023) Multi-attribute decision-making of process parameters in the fabrication of metallic bipolar plate using TOPSIS approach, Part L

Book Chapter:

- 1- **Talebi-Ghadikolaee, H., Elyasi, M., Shahgaldi, S., Seddighi, S., Kasaei, M. M., & da Silva, L. F. (2022). The Effect of Rubber Hardness on the Channel Depth of the Metallic Bipolar Plates Fabricated by Rubber Pad Forming. In Materials Design and Applications IV (pp. 123-133). Cham: Springer International Publishing.**

ACADEMIC ADVISING

Advisor of 2 M.Sc. research projects:

- Habib Dehghan
Thesis entitled: ductile fracture Prediction of high strength steel during sheet bending process using extended Mohr-Coulomb criterion
Master of Engineering, University of Hormozgan

Ali Zeinolabedin Begi

Thesis entitled: Experimental and numerical investigation of spring back phenomenon in cold roll forming process of pre-notch profiles
Master of Engineering, Tarbiat Modares University

Supervisor of 4 M.Sc. research projects:

- Mohsen Aghaee
Thesis entitled: Experimental investigation of the ultrasound-assisted stamping of metallic bipolar plates
Master of Engineering, University of Kashan

ACADEMIC ADVISING

Supervisor and Advisor of 4 Ph. D. research projects:

- Hossein Yousefian
Thesis entitled: Investigation of torsion defect considering the effect of hardening in the roll forming process of Perforated Asymmetric profiles
Doctor of Philosophy (Engineering), Tarbiat Modares University
- Saeid Hajiahmadi
Thesis entitled: Experimental and numerical investigation of notch geometrical parameters on springback in cold roll forming process of steel pre-notched sections
Doctor of Philosophy (Engineering), Tarbiat Modares University
- Zohrqabi
Thesis entitled: -----
Doctor of Philosophy (Engineering), Tarbiat Modares University
- Darabi
Thesis entitled: -----
Doctor of Philosophy (Engineering), University of Kashan

Computer skills

CAD/CAM/CAE Software:

- ABAQUS
- CATIA
- ANSYS Workbench
- Simufact Welding
- Minitab
- Solidwork