

# Eftekhari shahri, Seyyed Ehsan

---

**Title:** Assistant Professor

**Major:** Mechanical Engineering, Manufacturing

**Affiliation:** Mechanical Engineering Department, Faculty of Mechanical and Metallurgy Engineering, Birjand University of technology, Birjand, Iran.

**E-Mail:** [e.eftekhari@birjandut.ac.ir](mailto:e.eftekhari@birjandut.ac.ir), [eh.eftekhari@gmail.com](mailto:eh.eftekhari@gmail.com)

**Phone:** +98-56-32391269

## Research Interests

Metal forming

Mechanical behavior of materials

Severe plastic deformation processes

Modeling, simulation and finite element methods

## Formal Education

**Ph.D.** in Mechanical Engineering, Subfield Manufacturing, Faculty of Engineering, University of Birjand, GPA 18.75 /20.

**Dissertation:** Tube Hydroforming Process Improvement Using Vibration, Supervisors: Prof. S.Y. Ahmadi-Brooghani and Prof. K. Khalili, Nov. 2013, Score: 20/20.

**MSc.** in Mechanical Engineering, Subfield Manufacturing, Faculty of Engineering, University of Birjand, GPA 18.36 /20.

**Dissertation:** Analysis of Tube Hydroforming Process by Experimental and Finite Element Method, Supervisors: Prof. K. Khalili and Prof. S.Y. Ahmadi-Brooghani, August 2008, Score: 20/20.

**BSc.** in Mechanical Engineering, Subfield Manufacturing, Bobol Noshiravani University of Technology, GPA 15.33/20.

## Courses Taught

**BSc:** Strength of Material and laboratory, Material science, Production Methods, Forging Mold design, CAD/CAM laboratory, Finite element methods, Metrology and etc.

**MSc:** Metal Forming Analysis

## Visiting Scientist

ILIC (Industrial Liaison Innovation Center), Dept. of Aerospace Engineering, Pusan National University, Pusan 609-735, South Korea, in research collaboration with Prof. Dr. Beom-Soo Kang. (Jan.-Sept. 2012)

## Patent

Tubular hydroforming machine with free axial movement, Intellectual property in Iran, Registration number: 83782-Date: 9/9/2014.

## Research Paper

S.E. Eftekhari Shahri, M. Lakhi, and I. Taheridoustabad, Numerical and experimental investigation of the ultrasonic vibration effects on the tube hydroforming process in a die with a square cross-section. *International journal of advanced manufacturing technology*, 2023: <https://doi.org/10.1007/s00170-023-11081-1>

H. Jamshidi, M.K. Salari, S.E. Eftekhari Shahri, A. Saghafi, and R. khoshhal, The effect of sintering and compaction conditions on the microstructure and properties of AZ31 magnesium alloy, *Advanced Design and Manufacturing Technology (ADMT)*, 2022: <https://doi.org/10.30495/admt.2022.1942847.1328>

S.E. Eftekhari Shahri, M. Gholami, and M. Rakhshkhorshid, Numerical-experimental study of die geometry in the constrained groove pressing of 6061 aluminum sheets. *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture*, 2022: <https://doi.org/10.1177/09544054221138161>

K. Shiri, S.E. Eftekhari Shahri, and H. Rastegari Koupai, Experimental Study of the Effects of Rectangular and H-Shaped Woven Nanocomposites Patch on tensile properties of Repaired AL5251 Sheets, *Modares Mechanical Engineering*, Vol. 22 (03), 201-211, 2022.

S.E. Eftekhari Shahri, M.A. Ranaei, H. Jamshidi, and E. Rezaei, Experimental study of the simultaneous effects of severe plastic deformation and secondary radial strain on copper, *Journal of Process Mechanical Engineering*, 235 (6), pp. 1921-1929, 2021.

S.E. Eftekhari Shahri, M. Lakhi, and S. Ranjbar, Measurement of local strain: machine vision and finite element method, *Journal of Mechanical Science and Technology*, Vol. 35 (3), pp. 979-985, 2021.

M. Rakhshkhorshid, S. Ranjbar, and S.E. Eftekhari Shahri, Determination of Johnson-Cook Damage Model Constants for commercial Pure Copper Sheet by Tensile Testing on Notched Specimens, *Journal of Solid and Fluid Mechanics*, Vol. 11, No. 1, pp. 97-110, 2021.

S.E. Eftekhari Shahri, S.Y. Ahmadi Brooghani, and K. Khalili, Design of tube Hydroforming system with the Die Ultrasonic Vibration, *Journal of Solid and Fluid Mechanics*, Vol. 5, No. 1, pp. 135-148, 2015.

S.E. Eftekhari Shahri, S.Y. Ahmadi Boroughani, and K. Khalili, B.S. Kang, Ultrasonic tube hydroforming, a new method to improve formability, *Procedia Technology*, Vol. 19, pp. 90-97, 2015.

S.E. Eftekhari Shahri, S.Y. Ahmadi Brooghani, K. Khalili, and A. Mohammadi, Improve the formability in tube Hydroforming process using ultrasonic vibrations, *Modares Mechanical Engineering*, Vol. 14, No. 5, pp. 63-72, 2014.

S.Y. Ahmadi Brooghani, K. Khalili, S.E. Eftekhari Shahri, and B.S. Kang, Loading path optimization of a hydroformed part using multilevel response surface method, *International journal of advanced manufacturing technology*, Vol. 70, pp. 1523-1531, 2014.

S.E. Eftekhari Shahri, K. Khalili, and S.Y. Ahmadi Brooghani, Optimization of loading curve in tube hydroforming process using multilevel response surface, *Modares Mechanical Engineering*, Vol. 13, No. 13, pp. 176-187, 2014.

S.E. Eftekhari Shahri, S.Y. Ahmadi Brooghani, K. Khalili, and B.S. Kang, Ultrasonic tube hydroforming, a numerical and analytical study, *Modares Mechanical Engineering*, Vol. 13, No. 4, pp. 46-59, 2013.

K. Khalili, P. Kahhal, S.E. Eftekhari Shari, and M.S. Khalili, Blank Optimization in Elliptical-Shape Sheet Metal Forming Using Response Surface Model Coupled with Reduced Basis Technique and Finite Element Analysis, *Key Engineering Materials*, Vol. 473, 683-690, 2011.

K. Khalili, S.E. Eftekhari Shari, P. Kahhal, and M.S. Khalili, Wrinkling study in tube hydroforming process, *Key Engineering Materials*, Vol. 473, 151-158, 2011.

## **Conference Paper**

S.E. Eftekhari Shahri, M. Naderi Samani, and A. Saghafi, Finite element simulation to evaluate the effects of the secondary rolling process on the residual stress of aluminum sheet after the constrained groove pressing process, the 19<sup>th</sup> National Conference and the 8<sup>th</sup> International Conference on Manufacturing Engineering- ICME2023, Ferdowsi University of Mashhad, Iran, 2023.

M.K. Salari, A. Saghafi, S.E. Eftekhari Shahri and R. Khoshhal, Investigating the mechanical properties and microstructure of magnesium alloy AZ31 reinforced with graphene nanoplates in the process of severe plastic deformation, the 19<sup>th</sup> National Conference and the 8<sup>th</sup> International Conference on Manufacturing Engineering- ICME2023, Ferdowsi University of Mashhad, Iran, 2023.

M. Gholami, S.E. Eftekhari Shahri, and M. Rakhshkhorshid, Experimental study on the effects of constrained groove pressing process on 6061 aluminum sheet, the 19<sup>th</sup> National Conference and the 8<sup>th</sup> International Conference on Manufacturing Engineering- ICME2023, Ferdowsi University of Mashhad, Iran, 2023.

A. Azhdari, A. Saghafi, S.E. Eftekhari Shahri, Numerical study of constrained groove pressing process of steel sheet using polyurethane rubber pad, 30th Annual Conference on Mechanical Engineering-ISME2022, Islamic Azad University, Tehran, Iran, 2022.

A. Azhdari, S.E. Eftekhari Shahri, and A. Saghafi, Modification of mechanical properties in the CGP process of 6061 aluminum sheet using polyurethane rubber pad, the 7<sup>th</sup> International Conference and the 18<sup>th</sup> National Conference on Manufacturing Engineering- ICME2022, Technical and Vocational University, Tehran, Iran, 2022.

G.H. Bazi, A. Saghafi, R. khoshhal, and S.E. Eftekhari Shahri, Investigating the effects of temperature and immersion time on the growth kinetics of the intermetallic layer in the aluminizing process of st37, the 7<sup>th</sup> International Conference and the 18<sup>th</sup> National Conference on Manufacturing Engineering- ICME2022, Technical and Vocational University, Tehran, Iran, 2022.

S.E. Eftekhari Shahri, S.M. Sedehi, H. Izadi, Experimental and numerical investigation of the effect of preheat temperature on the behavior of the chip and the forces on the tool in the machining process of CK45 steel, the 7<sup>th</sup> International Conference and the 18<sup>th</sup> National Conference on Manufacturing Engineering- ICME2022, Technical and Vocational University, Tehran, Iran, 2022.

A. Azhdari, G.H. Bazi, A. Saghafi and S.E. Eftekhari Shahri, Investigation of the die corner radius effects on the constrained groove pressing (CGP) process, the 6<sup>th</sup> International Conference and the 17<sup>th</sup> National Conference on Manufacturing Engineering- ICME2021, Iran University of Science and Technology, Tehran, Iran, 2021.

S.E. Fatemi, M. Barani, S.E. Eftekhari Shahri and A. Saghafi, Experimental study of the effects of CGP process on the mechanical properties of aluminum and St37 sheets, the 6<sup>th</sup> International Conference and the 17<sup>th</sup> National Conference on Manufacturing Engineering- ICME2021, Iran University of Science and Technology, Tehran, Iran, 2021.

M. Gholami, S.E. Eftekhari Shahri, M. Rakhsh khorshid, and F. Nazari, Finite element simulation of a complete pass in aluminum sheet deformation process using constrained groove pressing (CGP), the 5<sup>th</sup> International Conference and the 16<sup>th</sup> National Conference on Manufacturing Engineering- ICME2019, Tarbiat Modarres University, Tehran, Iran, 2019.

S.E. Eftekhari Shahri, Y. Khoshnood, and H. Jamshidi, Numerical study of mechanical and thermal behavior in electrical discharge machining process, 27<sup>th</sup> Annual (International) Conference on Mechanical Engineering-ISME2019, Tarbiat Modarres University, Tehran, Iran, 2019.

M. Gholami, S.E. Eftekhari Shahri, M. Lakhi, and M. Khosravi, Numerical analysis of the Constrained Groove Pressing process and mold angle and sheet material evaluation, 27<sup>th</sup> Annual (International) Conference on Mechanical Engineering-ISME2019, Tarbiat Modarres University, Tehran, Iran, 2019.

K. Shiri, S.E. Eftekhari Shahri, H. Rastegari Kupaei, and F. Barati, Study of the effect of H nanocomposite patch on crack growth behavior in Al5251, The Fourth International Conference and the 15<sup>th</sup> National Conference on Manufacturing Engineering- ICME2018, Tehran, Iran, 2018.

S. Guya, S.E. Eftekhari Shahri, M. Maraki, and A. Ranaii, Effect of post-annealing on microstructure and mechanical properties of copper tube produced by severe plastic deformation, 26th Annual (International) Conference on Mechanical Engineering-ISME2018, Semnan University, Iran, 2018.

S.E. Eftekhari Shahri, E. Rezaii, M. Maraki, and A. Ranaii, Investigating the effect of severe plastic deformation with radial strain on the properties of copper wire in wire drawing, 26th Annual (International) Conference on Mechanical Engineering-ISME2018, Semnan University, Iran, 2018.

M. lakhi and S.E. Eftekhari Shahri, Screw analysis which is more resistant against bearing stress due to torque (Curved head screw) and its comparison with double screw, 13<sup>th</sup> Conference on Manufacturing Engineering (ICME2016), University of Hormozgan, Bandar abbas, Iran, 2016.

H. Yazdani, k. khalili, and S.E. Eftekhari Shahri, Finite element analysis of T-Shaped forming process using ball forming method, 3<sup>rd</sup> National Conference and 1<sup>st</sup> International conference on applied researches in electrical- mechanical & Mechatronic Engineering, Malek-Ashtar University of technology, Tehran, Iran, 2016.

S.E. Eftekhari Shahri, S.Y. Ahmadi Brooghani, and K. Khalili, Design of hydroforming die using the advantages of vibrations, 23<sup>th</sup> Annual (International) Conference on Mechanical Engineering-ISME2015, Amirkabir University of Technology, Tehran, Iran, May 2015.

S.E. Eftekhari Shahri, S. Pashar, and Y. Rostamian, Deformation of the tube section geometry using tube hydroforming process, 23<sup>th</sup> Annual (International) Conference on Mechanical Engineering-ISME2015, Amirkabir University of Technology, Tehran, Iran, May 2015.

S.E. Eftekhari Shahri, S.Y. Ahmadi Brooghani, K. Khalili, and B.S. Kang, Ultrasonic tube hydroforming, a new method to improve formability, 8th International Conference Inter disciplinarity in Engineering, INTER-ENG 2014, Romania, Procedia Technology, 2015, 19, 2015, pp. 90 – 97.

K. Khalilli, S.E. Eftekhari Shahri, and P. Kahhal, Determination of Wrinkling in the T-shaped piece produced by hydroforming process, 19<sup>th</sup> Annual Conference on Mechanical Engineering-ISME2011, University of Birjand, Iran, May 2011.

K. Khalili, S.Y. Ahmadi-Brooghani, and S.E. Eftekhari Shahri, Reversed Engineering for approximation of Pressure Displacement Curve in hydroforming of Tshape part, 17<sup>th</sup> Annual (International) Conference on Mechanical Engineering-ISME2008, University of Tehran, Iran, May 2009.

S.Y. Ahmadi-Brooghani, K. Khalili, and S.E. Eftekhari Shahri, Multi-Level Optimization of Tube Hydroforming Process, Iranian Conference on Manufacturing Engineering (ICME2009), University of Birjand, Iran, March 2009

K. Khalili, S.Y. Ahmadi-Brooghani, and S.E. Eftekhari Shahri, Simulation and Loading Path Optimization of a Hydroform Part Using Response Surface Method, 8th. World Congress on Computational Mechanics (WCCM8), 5th. European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2008), Italy, June 2008.

K. Khalili and S.E. Eftekhari Shahri, Automation of the Local 2d Strain Computation Using Image Processing Techniques, 16th. Annual (International) Conference on Mechanical Engineering-ISME2008, Shahid Bahonar University of Kerman, Iran, May 2008.

K. Khalili, S.Y. Ahmadi-Brooghani, and S.E. Eftekhari Shahri, Pressure Displacement Curve Optimization of a T Shape Part Using RSM Modeling, 16th. Annual (International) Conference on Mechanical Engineering-ISME2008, Shahid Bahonar University of Kerman, Iran, May 2008.

S.Y. Ahmadi-Brooghani and S.E. Eftekhari Shahri, Hydroforming Technology and it's Recent Progression, 5th. Student Conference on Mechanical Engineering- STUDENT-ISME2008, Iran, Feb 2008.

K. Khalili, S.Y. Ahmadi-Brooghani, and S.E. Eftekhari Shahri, Numerical Analysis of Hydroforming Process and Evaluate Simulation Parameters Effects, 5th. Student Conference on Mechanical Engineering-STUDENT-ISME2008, Iran, Feb 2008.

S.Y. Ahmadi-Brooghani and S.E. Eftekhari Shahri, Initial Blank Shape Optimization of the Deep Drawing Process Using Sensitivity Method, 15th Annual (International) Conference on Mechanical Engineering-ISME2007, Amirkabir University of technology, Iran, May 2007.

### **Professional Activity**

Head of International Office/ Bureau chief of the chancellor, Birjand University of Technology, Birjand, Iran (Sep 2015- March 2022).

Head of Mechanical Engineering Department, Birjand University of Technology, Birjand, Iran (June 2014- Sep 2015).

Reviewer of scientific and research journals, including Modares Mechanical Engineering, Solid and Fluid Mechanics, Mechanical Engineering of Tabriz University, Amirkabir Journal of Mechanical Engineering and etc. (2014- Present).

Member of the Organizing Committee of the 9<sup>th</sup> National Conference on Manufacturing Engineering- ICME2009, University of Birjand, March 2009.

### **Industrial Experiences**

CEO of the Knowledge-based company "Tarah Sanat Mobin Khavaran" In the field of designing and manufacturing machinery (Oct 2018-Present).

Trainee in maintenance unit, Part Sazan company (Automobile Parts Producer) (June 2003- Jan 2004).

Trainee in assembly unit, Toos Motor company, Niru-Mohareke Industrial Group (June 2002- Sep 2002).