Curriculum Vitae

Name: Farshid Ahmadi
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Education

- **Ph.D.**

Mechanical Engineering (Applied Mechanics), IUT, Coursework GPA: 19.05/20(1st rank in the department)
Thesis: Effect of Ultrasonic Vibrations on ECAP Process and its Produced Ultrafined Grain Materials

Fields of Research, Nano structured Materials, ultrasonic assisted manufacturing,
Supervisor: Prof. Mahmoud Farzi

- **M.S.**

Mechanical Engineering (production & manufacturing), IUT, GPA: 19.19/20 (1st rank in the department)
Thesis:Design & Investigation and Computer simulation of large diameter pipe-bending process with small bending radius using induction bending
Fields of Research: Metal Forming Technology, Finite Elements Simulations
Supervisor: Prof. Mahmoud Farzin

- **B.S.**

Mechanical Engineering (production & manufacturing), IUT, GPA: 18.19/20 (3rd rank in the department)
Dissertation: Die Design and Optimization of Gear Forging by Computer simulation
Fields of Research: Die Design, Computer simulation
Supervisor: Prof. Mahmoud Salimi

Work Experience

Projects

- Die Design and Optimization of a Crane Hook
- Create an instruction for assembling and disassembling of tensiometer rolls for Mobarakeh Steel Complex,Iran

- Design, manufacture and test of a new Die for producing of pitman arm and steering arm of a PEGEOUT intended to reduce the waste to 20% for Abzaran Complex,Iran
- Computer simulation and investigation to find an optimum time for staying parts of different shapes in the furnace in a way that the temperature of the core and the surface becomes the same, Atomic Energy Complex,Iran
- Investigation and Computer simulation of Manifold forming by hydroforming process, Iran Khodro(Auto Industry) Complex,Iran
- Determination of an optimum coating thickness of rolling rolls to decrease wear for Mobarakeh Steel Complex,Iran (in progress)
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Teaching Experiences

- Abaqus software in Isfahan University of Technology
- Die design in Isfahan University of Technology and University of Kashan
- Advanced mathematics in Isfahan University of Technology
- Advanced mathematics, Engineering Mathematics, differential equations, Static, solid mechanic (I teach these courses to exchange students who are not able to speak Persian very well)
- FEM
- Advanced Die Design
- Manufacturing Processes

Papers

- **Journal Papers:**

1) A Noorani, M Irani Rahaghi, A Loghman, F Ahmadi, Optimization of the Hydroforming Process of Triple-Layer Sandwich Cross-Shaped Tubes Using Genetic Algorithm, Engineering Research Express, Accepted, 2026, 10.1088/2631-8695/ae67d3.

2) Ansari, P., Kazemi, R., Ahmadi, F., "Investigation of the effect of ultrasonic vibration on the performance of the friction drilling by FEM simulation," Part E: Journal of Process Mechanical Engineering, Vol. 240, 2026, pp. 421-432.

3) Izi. A, Honarpisheh. M, Ahmadi. F, Investigation of mechanical properties and residual stress in the combined simple shear extrusion-forward extrusion (CSSE-FE) process of 1050 aluminum alloy, Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications, Vol. 240, pp.35-48, 2026.

4) Payam Moradian Rizi, Farshid Ahmadi, Comparison of ordinary and cryogenic roller burnishing on surface and mechanical properties of 99.95% pure copper, Engineering Research Express, Vol. 4, pp. 045409, 2025.

5) A Izi, F Ahmadi, M Honarpisheh, Investigating the effect of die geometric parameters on the deformation behavior in the combined simple shear extrusion-forward extrusion process, International Journal on Interactive Design and Manufacturing (IJIDeM), Vol. 19, pp. 7459-7475, 2025.

6) A Izi, F Ahmadi, M Honarpisheh, Upper-bound analysis for the combined simple shear extrusion-forward extrusion (CSSE-FE) process using a linear profile, Journal of Manufacturing Processes, Vol. 148,pp. 75-87, 2025.

7) Izi. A, Ahmadi. F, Honarpisheh. M, The deformation behavior of aluminum alloy in a novel severe plastic deformation process known as combined SSE-FE process, Manufacturing Letters, Vol. 40, pp. 104-108, 2024.

8) Farshid Ahmadi, Mahan Dashti Gohari, Exploring the Hidden Benefits and Dual Nature of Electrode Misalignment in Resistance Spot Welding: Unveiling Drawbacks and Advantages Through Isolated Thermal-Induced Stress, Journal of Modern Processes in Manufacturing and Production, Vol. 13, pp. 17-38, 2024.

9) Farshid Ahmadi, Alireza Foroughi, Design and manufacture of Cyclic Expansion Extrusion (CEE) die and investigation of microstructure and strength of aluminum 1050 under the process, Iranian Journal of Manufacturing Engineering, vol. 11, pp. 42-53, 2024.

10) Ali Izi, Mohammad Honarpisheh, Farshid Ahmadi, Non-uniform simple shear extrusion (NUSSE) technique as a novel sever plastic deformation technique, Journal of Ultrafine Grained and Nanostructured Materials, Vol. 57, pp. 9-18, 2024

11) Vossough, H.,Ahmadi, F., Golabi, S., "Dynamic instability region analysis of reinforced-CNTs truncated conical shells using mixed DQ-Bolotin method", Structural Engineering and Mechanics, Vol. 87 (2), 2023, PP. 129-136, 2023.

12) Ahmadi, F., Abdollahi, A., Zamani, S., "Experimental Study of Shearing Dimensional Parameters in the Sheet Metal Blanking Process of StW24 Steel with a Thickness of 12 mm", Journal of modern processes in manufacturing and production, Vol. 12, PP. 5-23, 2023.

13) Ahmadi, F., Mansouri, H., Sarami, E., "Investigation of Effective Parameters on the Surface Temperature Gradient under Equal Channel Angular Pressing Process of AA2017", Journal of modern processes in manufacturing and production, Vol. 11, PP. 5-23, 2022.

14) Abbasi, M., Ahmadi, F., Farzin, M., "Production of Ultrafine-Grained Titanium with Suitable Properties for Dental Implant Applications by RS-ECAP Process", Metals and Materials International, Vol. 27, PP. 705-716, 2021.

15) Rezaei, M., Farzin, M., Ahmadi, F., "Ultrasonic bone cutting: Experimental investigation and statistical analyses of cutting forces", Scientia Iranica, 2021, 10.24200/SCI.2021.56431.4720.

16) Ahmadi, F., Beiramlu, H., "Effect of abrasive particle morphology along with other influencing parameters in magnetic abrasive finishing process", Mechanics & Industry Vol. **22**, 2021.

17) Rezaei, M., Farzin, M., Ahmadi, F., "Design, Analysis and Manufacturing of a Bone Cutting Ultrasonic Horn-Tool and Verification with Experimental Tests", Journal of Applied and Computational Mechanics, 2020,

10.22055/JACM.2020.31298.1904

18) Ahmadi, F., Mohammadi, R., “FEM investigation of drilling conditions on heat generation during teeth implantation”, Journal of Computational and Applied Research in Mechanical Engineering (JCARME), 2019, 10.22061/JCARME.2019.5658.1726

19) Ahmadi, F.,“Effects of Sample Size and Stacking Fault Energy on Microstructure and Mechanical Properties in Equal Channel Angular Pressing”, journal Bulletin of Materials Science, under review, 2020.

20) Mousavi, E., Khaleghifar, M., Meratian, M., Ahmadi, F., Investigation of mechanical properties and fracture surfaces of 5086 Al-based alloy processed by equal channel angular pressing in different routes, Journal of Advanced Materials and Processing, Vol. 5, pp. 43-55, 2018.

21) Mousavi, E., Naghshekesh, N., Ahmadi, F, Cavaliere, P., Effect of lead on the crack propagation and the mechanical properties of Brass processed by ECAP at different temperatures, Materials Science & Engineering A, Vol.728, pp. 231-238, 2018.

22) R Shahrokh, A Ghaei, M Farzin, F Ahmadi, Experimental and numerical investigation of ultrasonically assisted micro-ring compression test. The International Journal of Advanced Manufacturing Technology, 2018. 95(9): pp. 3487-3495.

23) Ahmadi, F., Shahsavari, M., “Evolution of texture and grain size during equal channel angular extrusion of pure copper and 6012 aluminum”, Journal of Modern Processes in Manufacturing and Production 4 (4), 47-58, 2016.

24) Ahmadi, F., Farzin, M.,“Effect of grain size on ultrasonic softening of pure aluminum”, Journal of Ultrasonics, Vol. 63, pp. 111-117, 2015.

25) Ahmadi, F., Farzin, M., Meratian, M., Forouzan, M., "Improvement of ECAP Process by imposing ultrasonic vibrations", International Journal of advanced manufacturing technology, Vol. 79, pp. 503-512, 2015.

26) Shahsavari, M.H., Ahmadi, F., "Effect of materials with diverse properties on hardness value increased by Equal Channel Angular pressing process", Journal of modern processes in manufacturing and production, Vol. 3, pp. 59-76, 2015.

27) Ahmadi, F., Farzin, M., "Investigation of a new route for equal channel angular pressing process using three-dimensional finite element method", Journal of Engineering Manufacture, Vol. 228 (7), pp. 765-774, 2014.

28) Ahmadi, F., Farzin, M.,, "Finite element analysis of ultrasonic-assisted equal channel angular pressing", Journal of Mechanical Engineering Science, Vol. 228 (11), pp. 1859-1868, 2013.

29) Ahmadi, F., Foode, P., and Farzin, M., "Prediction of Hot Radial Forging Force by Using RS Methodology and ANN", Journal of Mechanics & Industry Research, 2013. 1(3): p. 58-65.

30) Rezaei, M., Farzin, M., Ahmadi, F., Salehi, M., "Finite element simulation of WC-Co coating sprayed on the surface of hot rolling pinch-roll", Iranian Journal of Surface and Engineering, 2012(14).14) Farzin, M., Ahmadi, F., "Finite element simulation of induction bending of large diameter pipes with a small bending radius", steel research international journal, 2008. 1: p. 179-185.

31) Ahmadi, F., Farzin, M., "Prediction of springback of tube induction bending process by the FE method and comparison with analytical results", steel research international journal, 2008. 1: p. 201-208.

32) Ahmadi, F., Farzin, M., "Investigating geometric and friction conditions causing chevron cracks in wire drawing process using FEM", steel research international journal, 2008. 2: p. 382-388.

Selected Conference Papers:

1. Majed A.R, Ahmadi F., Farzin M., "Laser Forming of Sheet

Metals:Mechanisms, Experiment and Simulation", the 2nd Tehran International Congress on Manufacturing Engineering(TICME),Tehran, Iran , 2007.

2. Ahmadi F., Farzin M., "Analytical and FEM Investigation to Control pipe Bending Process using Local Induction Heating", the 2nd Tehran, International Congress on Manufacturing engineering(TICME),Tehran, Iran ,2007.

3. Fadae A., Ahmadi F., Azimifar F., " FEM Simulation and Experimental Validation of Machining Process", The 16th Annual (International) Conference of Mechanical Engineering, Kerman, Iran, 2008. (In Persian)

4. Ahmadi F., Majed A. Farzin M. "Experiment and Finite Element Simulation of Laser Bending of Tubes", Iranian Conference on Manufacturing Engineering (ICME2009), Birjand, 2009.

5. Ahmadi F., Rahmati S., "Modelling of the foot from MRI files and Nonlinear FEM Analysis of a foot under body weight", The 16th Iranian conference on biomedical engineering, Tehran, Iran, 2010. (In Persian)

6. Behbahani S., Abedinzadeh R., Ahmadi F., "Dynamic model reduction of a three-axis milling machine", The 11th Iranian Conference on Manufacturing Engineering(ICME2010), Babol, Iran, 2010. (In Persian)

7. Mokhtari R., Fadae A., Ahmadi F., "Study on wear mechanisms in drilling of Inconel 718 super alloy using lubricant contained nano particles", The 11th Iranian Conference on Manufacturing Engineering (ICME2011), Tabriz, Iran, 2010. (In Persian)

8. Beiramlou H., Ahmadi F, "Improving the surface properties of biomaterials used in orthopedic implants using magnetic abrasive finishing, The 27th Annual (International) Conference of Mechanical Engineering, ISME 2019, Tehran, Iran, 2019. (In Persian)

9. Ahmadi F., Rabiei, D., "The effect of overweight during meniscus rupture of the knee on the spread of osteoarthritis by the finite element method, The 27th Annual (International) Conference of Mechanical Engineering, ISME 2019,

Tehran, Iran, 2019. (In Persian)

10. Estekei H, Ahmadi F., "Investigating the effect of strain rate and initial billet temperature on the force required for tube extrusion of austenitic stainless steels 316L using Abacus software", 5th International conference on Applied Research in Electrical, Mechanical and Mechatronics Engineering, Tehran, Iran, 2019. (In Persian)
11.

Books

1. How to use superforge software(2006)
2. Hand book of Advanced machining (to be published)
3. Biomechanics of Foot: CT Based Three-Dimensional CAD Model, CreateSpace Independent Publishing Platform (September 24, 2014).

Awards and Honors

1. Listed in Who'sWho in the Iranian Elite Academics
2. Outstanding Student Award, IUT, 2007
3. 3th person among 7850 people in Mechanical Engineering Master degree entering Exam award, 2005