

Mahmoud Farzin



Professor

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Education:

Ph.D. in Mechanical Eng., Applied Mechanics, Univ. of Manchester, Inst. of Science and Tech. (UMIST), U.K., 1990.

M.S. in Advanced Manufacturing Tech., Univ. of Manchester, Inst. of Science and Tech. (UMIST), U.K., 1986.

B.Sc. in Mechanical Engineering, Sharif Univ. of Tech., Tehran, Iran, 1980.

Academic Experience:

Associate Professor, Department of Mechanical Engineering, Isfahan University of Technology (I.U.T.), 1990 - 2001. From Jan. 2002 to Oct. 2005, The Ohio State University, IWSE department. From Oct. 2005 to present, Isfahan University of Technology (I.U.T.).

Awards Received:

- Distinguished student during undergraduate studies, Sharif University of Technology.
- Overseas Research Student (O.R.S.) grant awarded in 1986 for Ph.D. studies, Manchester, England.
- Distinguished lecturer in 1997-98, Isfahan University of Technology.
- Distinguished lecturer in 2009-10, Isfahan University of Technology.
- Distinguished researcher in 2010-11, Isfahan University of Technology.

Field of Research:

Sheet Metal Forming Processes, Deep Drawing, Hydroforming, Cold Roll Forming, Finite Element Analysis of Sheet Metal Forming and Bulk Forming of General Shapes, Cold Extrusion of Steel, Die Design, Fine Blanking, Tube Hydroforming, Micro-forming.

Master Dissertation:

“Blank-holderless deep drawing using Modified Tractrix dies”, Analyzed 2D deep drawing process, designed and made required dies to improve drawability of sheet metals, (1985-1986).

Ph.D. Thesis:

“An investigation into hydro-mechanical deep drawing”, Designed and made a hydro-mechanical deep drawing test apparatus, carried out experiments to verify the theoretical predictions of minimum required pressure during the process. Analyzed square cup drawing by the finite element method using ABAQUS software, (1986-1990).

Research interests and practical activities:

- **Deep drawing and stretch forming:**

- 1- I started my graduate research on theoretical and experimental analyses of nontraditional deep drawing process in 1985. Since then most of my research has been involved in this area in particular instability, wrinkling and effects of anisotropy in deep drawing and stretching processes. I have used FEM codes (such as NISA, ANSYS, ABAQUS and FORGE) for my process simulations and CAD courses.
- 2- I have also supervised one PhD student and one Master students who developed an FEM program for the 3D simulation of planar anisotropic sheet metals, which was also capable of the prediction of a general 3D instability mode. In this program a rigid nonlinear hardening material and large deformation theory has been used and rotation of principal directions of anisotropy were also taken into account.
- 3- I have also been involved in practical aspects of the deep drawing process in the design and manufacture of multistage circular and noncircular deep drawing dies for various precision parts. Examples include: stators of DC motors and large irregular deep drawn parts like automotive fuel tanks.

- **Cold roll forming (CRF):**

- 1- I have supervised three Masters and two PhD students in this field (one PhD student is currently active). We have been able to develop computer codes for the analyses of circular (tube) and noncircular sections.
- 2- I have also cooperated with industries in the CRF field. The main purpose of these activities was computer-aided design and manufacture of rolls at different stages of the CRF process required at more flexible manufacturing lines.
- 3- I have also cooperated in establishing an Iranian CRF scientific committee for arranging technical courses, scientific seminars and establishing a library for the CRF community in Iran.

- **Die design and manufacture:**

- 1- Supervision of a die-making workshop, for three years in I.U.T. specialized in making dies for difficult-to-form parts for three years. In this workshop I supervised more than ten engineers and skilled die makers. I was responsible for the management of the personnel and also financial and technical problems of the workshop. Analysis, design and manufacture of different dies mostly for deep drawn or fine blanked parts were performed. Based on more than ten years consultation with industry and supervision of this workshop, I can accept responsibility for detail die design for sheet metal parts including tool material selection, force calculations, determination of clearances, die tests, adjustment of working conditions on a press, trouble shooting of a die, etc.
 - 2- Design and manufacture of progressive dies. I have also had long-term consultation experience in die design activities with different factories. I have been able to help various companies, by consulting, correcting and improving their proposed designs, detecting and predicting unwanted problems, design errors, weak areas or ideas. A few examples are: cooler blower, burner of gas heaters, automotive door and hood locks and DC motor laminations.
 - 3- Design and manufacture of progressive and compound fine blanking dies. I am a specialist in the design of fine blanking dies. I have successfully made fine blanking dies and have taught fine blanking technology for more than eight years. I have also been able to equip mechanical presses with extra hydraulic cylinders and control circuits for the manufacture of fine blanked parts.
- **Machine design:**
 - 1- Design and manufacture of a hydraulic CNC sheet metal testing press (in cooperating with a team of professional engineers), capable of performing up to ten standard sheet metal tests such as Erichsen Cupping Test, Hole Expansion Test, Fukui Test, Forming Limit Diagram Test, Swift Deep Drawing Test, Engelhardt Test, Limiting Dome Height Test, Bulge Test, etc.
 - 2- Design and manufacture of rotary forging equipment. This machine was used for a precise and repeatable riveting process.
 - **Die casting and injection molding:**
 - 1- I have translated a Die Casting Handbook from English to Persian. Also I have supervised the design and manufacture of die-casting dies for aluminum and zinc alloy parts. An example is a die-casting die for an aluminum wiper base with a 3D parting surface and two cam operated slides. The part had a tolerance of 0.05 mm between power axes and a no-void limitation.
 - 2- Design and manufacture of injection molding dies. Besides designing injection-molding dies, I have also designed and made a continuous high-pressure injection machine for continuous injection of solid slabs and cylindrical polymer parts.
 - **Cold extrusion of steel:**

- 1- Design and manufacture of a cold backward extrusion die for manufacturing hollow cylindrical steel parts. My master student was elected as the best master student of the year, between mechanical engineering departments of Iran.
- 2- I had a Master student and currently have a PhD student who developed an FEM program for the simulation of bulk metal forming processes. In this code a flow formulation approach has been used. We have been able to improve prediction of hydrostatic stresses in bulk forming processes.
- 3- I have also designed and made cold forward and backward extrusion dies for manufacturing a steel starter gear and a housing part. This is one of the most difficult processes that I have been involved with. I have a patent on cold Forward extrusion of steel gears.

- **Tube hydro-forming (THF):**

At the Ohio State University, IWSE department, CEFT group, I have activated a new research area in the field of THF aiming at:

- 1- Development of next generation of tubes for tube hydro-forming processes. These activities can include FEM modeling and experimental study of tubes made of lightweight materials such as aluminum, titanium alloys, combination of different material types and thickness, dual wall ribbed tubes, effects of anisotropy on tube hydro-forming process and analysis of failure modes and instability.
- 2- Development of tools for tube hydro-forming process. These activities can include FEM modeling and experimental study of lubrication and surface coating, design of low weight and low cost tooling, design of tooling for warm tube hydro-forming, design and improvement of sealing systems, bending and preparation of preformed tubes, computer aided process control for better and improved formability, material selection for THF tools, secondary THF operations such as high pressure calibrating, hydro-piercing and improvement of fastening and/or joint methods. I have currently designed a tube hydro-forming apparatus to investigate experimentally different lubrication conditions and surface coatings, which is also extendable to warm THF.

- **Microforming:**

At the Ohio State University, IWSE department, CEFT group, I have been involved in micro-forming and particularly micro-piercing of sheet metal parts.

- 1- One objective of this investigation is feasibility study of micro-hydro-piercing process for the elimination of micro punches and other problems related to the punch such as its manufacture, assembly, and its guidance.
- 2- The second objective is feasibility study of micro-piercing with solid punches by investigating new methods for manufacture of punch, die and their appropriate alignment and assembly problems.

Courses taught since 1990:

Statics	Advanced Computer Aided Design
Die Design	Advanced Die Design
Theories of Plasticity	Introduction to Finite Element Method
Metal Forming Processes	Nonlinear Finite Element Analysis

Patents:

- 1- Cold Extrusion of Steel for Production of Starter Gear, Patent No. 2262, Iranian Research Organization for Science and Technology (I.R.O.S.T.), Nov. 1999, Mahmoud Farzin.
- 2- Forming 3D sheet metal parts from sculptural punches using CNC/CAD/CAM method, Iranian Patent and trade organization, Patent No: 33261, 20, Nov. 2005, M. Farzin, S. Mirian.
- 3- Manufacture of a 2D Servo Press Transfer System Using Linear Stepper Motors, Iranian Patent and trade organization, Patent No: 34324, 7 Jan. 2006M. Farzin, M. Ajodanian, M.H. Navidfar, H. Bakhshai
- 4- Mandrel assembly for tube bending, United States Patent 8,322,185, M. Farzin, M. Salem, December 4, 2012.

Publications:

Journal Papers:

1. M. Farzin, M. Shariati, "Analysis of axisymmetric and non-axisymmetric stretching of sheet metal by the FEM", *Esteghlal Journal*, Vol. 14, No. 1, Sep. 1995 (In Persian).
2. M. Farzin, "Prediction of geometry and strain distribution during cold roll forming of symmetrical channel sections", *Iranian Journal of Mechanical Engineering*, Vol. 9, No. 3, Fall 1998.
3. M. Farzin, M. Tajdari, "Stress analysis and energy estimation in cold roll forming process", *Esteghlal Journal*, Vol. 18, No. 1, Sep. 1999, pp. 143-160 (In Persian).
4. H. Hashemolhosseini, M. Foroutan, M. Farzin, "Prediction of instability in planar anisotropic sheet metal forming processes", *International Journal of Engineering*, Feb. 2001, Vol .14, No.1, PP. 69-80.
5. M. Foroutan, M. Farzin, H. Hashemolhosseini, "Analysis of planar anisotropic sheet metal forming processes by the F.E.M. ", *Journal of Science and Tech. (Scientia Iranica)*, Vol. 8, No. 2, pp 138-144, April 2001.
6. H. Hashemolhosseini, N. Sadati, M. Farzin, "A new class of Cn interpolations and its applications to F.E.M." *International Journal for Numerical Method in Engineering* , 2002, 53:1781-1800 (DOI: 10.1002/nme.358).
7. H. Hashemolhosseini, H. Dalayeli, M. Farzin, "Correction of hydrostatic pressure obtained by the finite element flow formulation using moving least square method", *Journal of Materials Processing Technology*, 125-126 (2002), 588-593.

8. M. Farzin, M. Salmani Tehrani, E. Shamel, "Determination of bucking limit of strain in cold roll forming by the finite element analysis", *Journal of Materials Processing Technology*, 5971, Vol. 125-126 (2002) , pp 626-633.
9. M. Tajdari, M. Farzin, Numerical analysis of cold roll forming of symmetrical open sections, *Journal of Materials Processing Technology*, 125-126 (2002) 633-637.
10. H. Dalayeli, H. Hashemolhosseini, M. Farzin, B. Soltani, "Improvement of flow formulation by recovery of hydrostatic pressure using the finite point method", *International Journal for Numerical Methods in Engineering*, (2006), 65: 1403-1418.
11. M. Farzin, H. Javani, M. Mashayekhi, R. Hambli "Analysis of blanking process using various damage criteria", *Journal of Materials Processing Technology*, Vol. 177 (2006) , 287-290.
12. M. Sohankar, M. Farzin, Analysis of pressure distribution and optimization of working conditions during push bending of circular tubes, JAST, Iranian Aerospace Society, Vol. 4, No.3, pp45-51, Sept 2007.
13. Simulation of four-rolls thin plate bending process, *Modarres Technical & Engineering*, Vol 1, No. 28, 2007.
14. M. Farzin, H. Montazerolghaem, "Manufacture of thin miniature parts using electro hydraulic forming and viscous pressure forming methods", Accepted by *Journal of Archives of Metallurgy and Materials*, to be published in volume 54, issue 3/2009.
15. M. Farzin, F. Ahmadi, "Finite element simulation of induction bending of large diameter pipes with a small bending radius", *Journal of Steel research international*, 79, (2008), Vol. 1, pp. 179-185.
16. M. Farzin, F. Haji Aboutalebi, H. Khademyzadeh, "Comparison of rupture modes in deep drawing and hydro-mechanical deep drawing processes using ductile damage model", *Journal of Steel research international*, 79, (2008), Vol. 1, pp. 340-347.
17. F. Ahmadi, M. Farzin, "Investigating geometric and friction conditions causing chevron cracks creation in wire drawing process using FEM", *Journal of Steel research international*, 79, (2008), Vol. 2, pp. 382-388.
18. F. Ahmadi, M. Farzin, "Prediction of spring-back of tube induction bending process by FE method and comparison with analytical results", *Journal of Steel research international*, 79, (2008), Vol. 1, pp. 201-208.
19. M. Loh-Mousavi, M. Bakhshi, K. Mori, T. Maeno, M. Farzin, S.J. Hossinipour, 3-D Finite element simulation of pulsating free bulge hydro-forming of tubes, *Iranian J. of Science & Technology, Transaction B, Engineering*, Vol. 32, No, B6, pp611-618.
20. A. Ghassemi, A. Shahidi and M. Farzin, A new method for analyzing large elasto-plastic deformation of a thin Cosserat shell, *Proc. IMechE Vol. 224 Part C: J. Mechanical Engineering Science*, *The manuscript was received on 26 August 2009 and was accepted after revision for publication on 15 January 2010.*
21. A. Ghassemi, A. Shahidi and M. Farzin A New Element For Analyzing Large Deformation Of Thin Naghdi Shell Model: part1 : elastic, accepted by the *Applied Mathematical Modelling*, Ref. No.: amm 7728R1.
22. M. Loh-Mousavi, M. Bakhshi, K. Mori, T. Maeno, M. Farzin, S.J. Hossinipour Mechanism of Improvement of Die Corner Filling in Pulsating Hydroforming of Tube in Box-Shape Die, *Modarres Technical & Engineering*, Vol 1, No. 37, Fall 2010.

23. F. Haji Aboutalebi, M. Farzin, M. Porsina, Numerical Simulation and Experimental Validation of a Ductile Damage Model for DIN 1623 St14 Steel, Accepted by the International Journal of Advanced Manufacturing Tech., Manuscript #IJAMT4301R5, 2010, (2011) 53:157–165, DOI 10.1007/s00170-010-2831-z
24. H. Montazerolghaem, M. Farzin, A. Fadaei Tehrani, Manufacture of Miniature Bulge Test Apparatus Suitable for Micro-Sheet Metal Forming, Journal of Steel research international, 81, (2010), No. 9, pp. 1213-1216
25. S. Mirian¹, M. Safavi¹, A. Fadaei, M. Salimi, M. Farzin, Improving the Quality of Surface in Polishing Process with the Magnetic Abrasive Powder Polishing (MAPP) by Use of Ultrasonic Oscillation of Work-piece on a CNC Table, International Journal of Precision Engineering, Vol. 12, No. 2, pp. 275-284, April 2011,
26. Reza Jafari Nedoushan Mahmoud Farzin, Effect of Hydrostatic Pressure on Nano Crystalline Materials Behavior, Journal of Nano Research Vols. 18-19 (2012) pp 27-42, Online available since 2012/Jul/26 at www.scientific.net, © (2012) Trans Tech Publications, Switzerland, doi:10.4028/www.scientific.net/JNanoR.18-19.27, 26331
27. R. Jafari Nedoushan and M. Farzin, Effects of Unbalanced Forces on Product Thickness Accuracy in Multi-rollers Flow-Forming, Mechanics of Aerospace, Vol. 7, No2, pp 33-44, Accepted: 21 May, Published: 2011 21 June 2011, 26336, صفحات ۳۳ الی ۴۴ و ۱۳۹۰، مجله مکانیک هوافضا (ساخت و تولید)، جلد ۷، شماره ۲
28. A. R. Fallahi Arezoodar, H. Ebrahimi Haratmeh¹, M. Farzin, Numerical and Experimental Investigation of Inward Tube Electromagnetic forming- Electromagnetic Study, Advanced Materials Research Vols. 383-390 (2012) pp 6710-6716, Online available since 2011/Nov/22 at www.scientific.net (2012) Trans Tech Publications, Switzerland, doi:10.4028/www.scientific.net/AMR.383-390.6710
29. Mehdi Safari, M. Farzin, Experimental and numerical investigation of laser bending of tailor machined blanks, Optics & Laser Technology, Accepted 25 November 2012, 48 (2013) pp 513–522, 26345.
30. Behnaz Ebadian, M. Farzin, Saeid Talebi, Niloufar Khodaeian, Evaluation of stress distribution of implant retained mandibular overdenture with different vertical restorative spaces: A finite element analysis, Dental Research Journal / November 2012 / Vol 9 / Issue 6, pp 741-747- 26352
31. P. Daryabor, M. Farzin, F. Homnarvar, Calculating the Lamb wave modes in an aluminum sheet bonded to a composite layer with FEM, Modares Mechanical Engineering, April 2013, Vol 13, No 1, pp 95-106, 26353
32. M.A. Rasoli, A. Abdullahb, M. Farzin, A. Fadaei Tehrani, A. Taherizadeh Influence of ultrasonic vibrations on tube spinning process, Journal of Materials Processing Technology, 212 (2012) pp 1443– 1452, 23321
33. R. Jafari Nedoushan and M. Farzin, M. Mashayekhi, A micro-structural model for prediction of void initiation in superplastic forming, International Journal of Damage Mechanics, 26 March 2013, pp 1-15,
34. M Mashayekhi, A Taghipour, A Askari and M Farzin, Continuum damage mechanics application in low-cycle thermal fatigue, International Journal of Damage Mechanics, 22 (2), 2012, pp 285-300, 23616.

35. F. Haji Aboutalebi, M. Farzin, M. Mashayekhi, Numerical Simulation and Experimental Validation of a Ductile Damage Evolution In Sheet Metal Forming Processes, *Acta Mechanica Solida Sinica*, Vol. 25, No. 6, December, 2012, ISSN 0894-9166,
36. پژمان دربابر، محمود فرزین و سعیده کوهستانی - شبیه سازی تست غیر مخرب اولتراسونیک با پروب موج عمودی در اتصال بین ورق کامپوزیت و آلومینیوم توسط اجزای محدود- مجله مدل سازی در مهندسی - سال نهم، شماره ۲۶، پاییز ۱۳۹۰. ۲۶۵۸۸
37. M. Gandomkar*, S. H. Dibajian, M. Farzin, S. H. Hashemolhoseini, An integration procedure for meshless methods using Kriging interpolations, *Indian Journal of Science and Technology*, Vol: 6 Issue: 1 January 2013 ISSN:0974-6846

Conference Papers:

1. M. Farzin, "Blank Holder-less Deep Drawing", *International Conference on Engineering Application of Mechanics*, pp. 507-513, Jun. 9-12, 1992, Sharif University of Tech., Tehran, Iran.
2. M. Farzin, "Sheet Metal Forming by a Pressure Medium", *International Conference on Engineering Application of Mechanics*, pp. 507-513, Jun. 9-12, 1992, Sharif University of Technology, Tehran, Iran.
3. B. Soltani, M. Farzin, "Analysis of Ring Compression Test by the FEM", *International Congress on Computational Methods in Engineering*, May 2-6, 1993, Shiraz University, Shiraz, Iran.
4. M. Farzin, "Fine Blanking Dies", *Production and Manufacturing Engineering Conference (PMEC)*, Oct. 13-14, 1993, Amirkabir Univ. (Tehran Polytechnic), Tehran, Iran.
5. H. Moslemi, H. Sadeghi, M. Farzin, "Automatic Roll Design for Cold Roll Forming of Tube Sections by Down Hill Method", *Engineering Application of Mechanics*, May 2-6, 1994, Sharif University of Tech., Tehran, Iran.
6. M. Shariati, M. Farzin, "Analysis of 3D Sheet Metal Stretching by the FEM", *3rd Annual ASME Conference*, May 14-16, 1995, Amirkabir Univ. (Tehran Polytechnic), Tehran, Iran.
7. M. Farzin, M. R. Ashraf, "Effects of Anisotropy and Work Hardening on Wrinkling of Deep Drawn Parts", *3rd Annual ASME Conference*, May 14-16, 1995, Amirkabir Univ. (Tehran Polytechnic), Tehran, Iran.
8. H. Moslemi, H. Sadeghi, M. Farzin, "Simulation of Cold Roll Forming of Tube Sections", *3rd Annual ASME Conference*, May 14-16, 1995, Amirkabir Univ. (Tehran Polytechnic), Tehran, Iran.
9. M. Foroutan, M. Farzin, "Strain Measurement of Deformed Sheet Metal Parts by Image Processing", *3rd Annual ASME Conference*, May 14-16, 1995, Amirkabir Univ. (Tehran Polytechnic), Tehran, Iran.
10. M. Tajdari, M. Farzin, "Simulation of Cold Roll Forming of Channel Sections", *International Symposium of Manufacturing*, Sep. 1997, Auckland, Newzeland.
11. M. Farzin, "Comparison of Die Making Industry of Iran with Industrial Countries", *Tehran Research Organization*, Dec. 7, 1999.
12. M. Farzin, M. Foroutan, "Analysis of Planner Anisotropic Sheet Metal Stretching by the FEM", *6th Proceeding of ICTP*, Vol. 11, Sep. 9-24, 1999.

13. M. Tajdari, M. Farzin, "CAD of Rolls for Production of Symmetrical Open Sections by Cold Roll Forming", *ICSC*, Sep. 1999.
14. H. Hashemolhosseini, H. Dalayeli, M. Farzin, "Correction of hydrostatic pressure obtained by the finite element flow formulation using moving least square method", 9th *International Conference on Metal forming*, The University of Birmingham, UK, September 9 – 11, 2002.
15. M. Farzin, M. Salmani Tehrani, E. Shameli, "Determination of bucking limit of strain in cold roll forming by the finite element analysis", 9th *International Conference on Metal forming*, The University of Birmingham, UK September 9 – 11, 2002.
16. R. Shivpuri, M. Farzin, "Challenges in Tooling & Process Designs for Next Generation Automotive Parts", *Automotive Tube Hydroforming Conference*, May 15-16, 2002, Westin Southfield, Detroit, Michigan, USA.
17. M. Farzin, R. Shivpuri, " *Joining fasteners in the calibration stage of Tube Hydroforming (THF) processes*", 8th *International Conference on Technology of Plasticity (ICTP)*, Verona, October 9-13, 2005.
18. H. Dalayeli, M. Farzin, H. Hashemolhosseini, " *Metal Forming Analysis by a Rigid Plastic Meshless Collocation Method*", 8th *International Conference on Technology of Plasticity (ICTP)*, Verona, October 9-13, 2005.
19. M. Ajoodanian, M. Farzin, M.H. Navidfar, H. Bakhshaei, " *Design of a 2-D Servo Press Transfer System Using Linear Stepper Actuators*", Tehran International Congress on Manufacturing Technologies (TICME2005), December 12-15, 2005.
20. M. Farzin, H. Javani, M. Mashayekhi, " *Investigating the blanking/punching parameters using Gurson and shear criteria*", Tehran International Congress on Manufacturing Technologies (TICME2005), December 12-15, 2005.
21. E. Shahabi, M. Farzin, " *Warm Gas-Pressure (WGP) forming of aluminum sheet materials with non-uniform temperature distribution for automotive industry*", Tehran International Congress on Manufacturing Technologies (TICME2005), December 12-15, 2005.
22. M. Bahreini, M. Farzin, " *Study of friction effects on tube hydro-forming with outer pressure*", 14th annual (International) Conference on Mechanical Engineering, (ISME2006), May16-18, 2006 Isfahan, Iran.
23. M. Farzin, M. Bahreini, " *A new method for the evaluation and ranking of lubricants used in tube hydro-forming processes*", 14th annual (International) Conference on Mechanical Engineering, (ISME2006), May16-18, 2006 Isfahan, Iran.
24. M. Farzin, S. J. Mir Fattah, H. Nemti, S. Miriyan, " *Evaluation of Temperature and Stress Distributions in a Ladle of Molten Copper*", 14th annual (International) Conference on Mechanical Engineering, (ISME2006), May16-18, 2006 Isfahan, Iran.
25. M. Farzin, S. Miriyan, " *Sheet Metal shear forming by CNC Milling Machine and CAD/CAM*", 14th annual (International) Conference on Mechanical Engineering, (ISME2006), May16-18, 2006 Isfahan, Iran.
26. M. Salmani Tehrani, P. Hartley, H. Moslemi Naeini, M. Farzin, " *Localised bending Defects in Circular Tube Roll Forming*", Proceedings of the 8th

- ESAFORM Conference on Metal Forming (ESAFORM 2005), 27th -29th April 2005, Cluj-Napoca, Romania.
27. M. Farzin, H. Javani, M. Mashayekhi, "*Analysis of Ductile fracture using Gurson and Shear criteria in blanking processes*", 11th International Conference on metal forming, Birmingham, UK, Sept. 11-13 2006.
 28. M. Farzin, e. Shahabi, "Warm gas-forming of aluminum and copper sheets ", TUBEHYDRO 2007 International conference on tube hydroforming, Jun 4- 5, 2007 Harbin, CHINA.
 29. A. Saboktakin , M. Farzin, "Simulation of Cold Forging of Bevel Gear under Various Friction Conditions", International Center for Numerical Methods in Engineering. Barcelona, Spain., COMPLAS 2007, 5-7 September, 2007-10-27.
 30. M. Khalilian, M. Farzin and M. Bakhshi-Jooybari, "Calculation of Upsetting Limit using Lemaitre Coupled Damage Model", Tehran International Congress on Manufacturing Technologies (TICME2007), December 10-13, 2007.
 31. F. Ahmadi , M. Farzin, "Analytical and FEM Investigation to Control pipe Bending Process using Local Induction Heating", Tehran International Congress on Manufacturing Technologies (TICME2007), December 10-13, 2007.
 32. F. Ahmadi , M. Farzin, "Investigation of Pipe Bending with Small Bending Radius using Local Induction Heating by FEM Method", Tehran International Congress on Manufacturing Technologies (TICME2007), December 10-13, 2007.
 33. A.R. Mahdieh najafabadi, B. Mollaei Dariani, M. Farzin, M. Sohankar, "Manufacturing of exhaust manifold by sheet metal forming process", Tehran International Congress on Manufacturing Technologies (TICME2007), December 10-13, 2007.
 34. M. Farzin, A.R. Majed, F. Ahmadi, "Laser Forming of Sheet Metals: Mechanisms, Experiment and simulation", Tehran International Congress on Manufacturing Technologies (TICME2007), December 10-13, 2007.
 35. N. Fathianpour, S.H. HashemAlhousainy, M. Farzin, S.H. Dibajian, Modification of weight function in moving least square approximation and its application in meshless local Petrov-Galerkin method, *The International Conference of Computational Methods April 4-6, 2007, Hiroshima*
 36. F. Haji Aboutalebi, M. Farzin, M. Loh-Mousavi, Prediction of rupture in tube hydro-forming process using ductile damage, Proceedings of the 9th international conference on advanced technology of plasticity, Sept. 7-11, 2008/ Gyeongju, Korea, pp 94-98.
 37. F. Haji Aboutalebi, M. Farzin, H. Khademyzadeh, "Damage evolution and Crack propagation in axial and biaxial tensile tests", 16th annual (International) Conference on Mechanical Engineering, (ISME2008), May13-15, 2008, Shahid Bahonar University of Kerman, Iran.
 38. M. Jandaghian, M. Farzin, بررسی اثر هندسه بیلت بر تست اکستروژن دوفنانه‌ای در محاسبه ضریب اصطکاک بین سطوح 16th annual (International) Conference on Mechanical Engineering, (ISME2008), May13-15, 2008, Shahid Bahonar University of Kerman, Iran.
 39. M. Sohankar, M. Farzin , H. Abbasi, بهینه سازی شرایط اصطکاک در فرآیند شکلدهی لوله های جدار نازک به روش خم فشاری 16th annual (International) Conference on Mechanical Engineering, (ISME2008), May13-15, 2008, Shahid Bahonar University of Kerman, Iran.

40. H. Dalayeli, M. Farzin, H. Hashemolhosseini, ارزیابی مشتقات متغیرهای میدان با استفاده از 16th annual (International) Conference on Mechanical Engineering, (ISME2008), May13-15, 2008, Shahid Bahonar University of Kerman, Iran.
41. H. Asadi, M. Farzin, بررسی شرایط شکل دهی فرآیند اسپینینگ لوله جدار ضخیم و بهینه سازی فرآیند اسپینینگ لوله 16th annual (International) Conference on Mechanical Engineering, (ISME2008), May13-15, 2008, Shahid Bahonar University of Kerman, Iran.
42. M. Khalilian, M. Bakhshi-Jooybari, M. Farzin, تعیین زاویه بهینه در فرآیند اکستروژن میلگرد به مقطع مربعی در قالب با پروفیل مخروطی 16th annual (International) Conference on Mechanical Engineering, (ISME2008), May13-15, 2008, Shahid Bahonar University of Kerman, Iran.
43. F. Ahmadi, M. Farzin, بررسی میزان برگشت فنری در لوله های خم شده به روش خمش القایی و مقایسه نتایج تنوری 16th annual (International) Conference on Mechanical Engineering, (ISME2008), May13-15, 2008, Shahid Bahonar University of Kerman, Iran.
44. F. Ahmadi, M. Farzin, بررسی تاثیر پارامترهای هندسی و اصطکاک در بوجود آمدن ترکهای جناغی در فرآیند کشش سیم 16th annual (International) Conference on Mechanical Engineering, (ISME2008), May13-15, 2008, Shahid Bahonar University of Kerman, Iran.
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61. طراحی یک سیستم جدید انتقال دو بعدی قطعات فلزی سبک وزن - 17807-وحید اشرفی- محمود فرزین. 16th annual (International) Conference on Mechanical Engineering, (ISME2008), May13-15, 2008, Shahid Bahonar University of Kerman, Iran.
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66. R. Jafari Nedoushan and M. Farzin, Strain rate and grain size dependency of Nano Crystalline Materials Behavior, International Congress on nonoscience and nanotechnology (ICNN2012), 8-10 September, Kashan, Iran. 26580
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68. R. Shahrokh, M. Farzin, H. Ebrahimi, A. Fallahi Arezoodar and A. Fadaii Tehrani, Numerical Solution of the Governing Equations for Electromagnetic Inward Tube Forming, 20th Annual International Conference on Mechanical Engineering- ISME2012, 16-18 May, 2012, School of Mechanical Eng., Shiraz University, Shiraz, Iran, 26586

Ph.D. and M.S. Students:

Ph.D. Students:

1. M. Tajdari, Computer Aided Simulation of Cold Roll Forming of Symmetrical Noncircular Open Sections, Isfahan Univ. of Tech., 1999.
2. M. Foroutan, Three Dimensional Analysis of Planar Anisotropic Sheet Metal Stretching by the F.E.M., Isfahan Univ. of Tech, 2000.
3. H. Dalayeli, Prediction of Stresses during Bulk Metal Forming by the Finite Element Method based on Flow Formulation, Isfahan Univ. of Tech., 2004.
4. M. Salmani Tehrani, Analysis of Cold Roll Forming of General Shapes by the Finite Element Method, Isfahan Univ. of Tech., 2005.
5. A. Ghasemi, Elasto-plastic numerical solution of Kirichhoff theory on the basis of thin Cosserat surface, Isfahan Univ. of Tech. (April 2010).
6. M. Ghandom-kaar, Analyses of metal forming processes by the explicit meshless methods, Isfahan Univ. of Tech. (Jan. 2013).

7. H. Dibajian, A of probabilistic view on meshless methods, Isfahan Univ. of Tech. (In Progress).
8. M. Safari, Laser assisted incremental sheet metal forming, Isfahan Univ. of Tech. (In Progress).
9. M. Rasuli, Improvement of forming conditions in spinning process by the application of ultrasonic vibrations, Isfahan Univ. of Tech. (Feb. 2013).
10. F. Ahmadi, Effect of ultrasonic vibrations on Nano-structured metals obtained by ECAP process, Isfahan Univ. of Tech. (In Progress).
11. R. Jafari, Development of Micro-Structural Constitutive Models for various metal crystals, Isfahan Univ. of Tech. (Nov. 2012).

M.S. Students:

1. B. Soltani, Analysis the ring compression test by the Finite Element Method, Oct. 1991, (I.U.T).
2. G. Reza Zadeh, An Investigation into Extrusion of Plastics and Polymers, May 1992, (I.U.T).
3. H.Moslemi Naiini, CAD of Rolls for Cold Roll Forming of circular sections, July 1993, (Tarbiat Modarres Tehran).
4. J. Imaani, Prediction of Instability encountered in Sheet Metal Forming, July 1993, (I.U.T).
5. A. R. Madineh, Computer Aided Design of Rolls for Cold Roll Forming of Simple Noncircular Sections, Dec. 1993, (I.U.T).
6. M. Foroutan, Limiting Factors Encountered in Sheet Metal Stamping Processes, July 1994, (I.U.T).
7. M.R. Shariati, Analysis Sheet Metal Forming Processes by the F.E.M., July 1994, (I.U.T).
8. M. R. Ashraf, Prediction of Wrinkling during Deep Drawing Process, July 1994, (I.U.T).
9. M.Sharif Ahmadian, Analysis Deep Drawing process over Tractrix Dies, July 1995, (I.U.T).
10. M. Raampanahi, Design and Manufacturing Method of a High-Pressure Thick Toroidal Tube, July 1995, (I.U.T).
11. M. Azari, Analysis of Different Standard Tests for Evaluating Formability of Sheet Metals, July 1995, (I.U.T).
12. A. Shirvani, Diagnostics of Defects Encountered in Bulk Hot Metal Forming, July 1995, (I.U.T).
13. M. Bardosamay, Comparison of Different Manufacturing Methods for Production of Thick Walled Cylindrical Vessels, July 1996, (I.U.T).
14. M. Ali Akbarian, Fundamentals of Cold Roll Forming of Channel Sections, July 1996, (I.U.T).
15. S. Hekmatian, Evaluation of Punch Force during Plane Strain Bending of Sections with Multibends, Dec. 1997, (I.U.T).
16. K. Mahdioun, Fundamentals of Fine Blanking Tools Design and Manufacture, Dec.1998, (I.U.T).

17. A. Azarhoosh, An Introduction to technology of Cold Extrusion of steel, May 1998, (I.U.T).
18. F. H. Abotalebi, Finite Element Analysis of Backward Cold Extrusion of Steel, Dec. 1998, (I.U.T).
19. M. Kamaali, An Investigation into Fluid Assisted Deep Drawing Processes, Jan. 1999, (I.U.T).
20. M. Salmani, Prediction of Buckling Limit Encountered in CRF of Open Sections by the FEM, Dec. 1999, (I.U.T).
21. A. R. Shamshiri, Rapid Prototyping Methods and Equipment, July 1999, (I.U.T).
22. M. J. Tabatabaian, Analysis of a compound complex elastic structure by the F.E.M., Jan. 2000, (I.U.T).
23. M. Navarchian, An Investigation into spinning and flow turning of sheet metal parts, Dec. 2001, (I.U.T).
24. M. R. Vaziri, Determination of bending effects during sheet metal forming by the F.E.M., Dec. 2001, (I.U.T).
25. M. Ajoodanian, Design and manufacture of a 2D transfer system. 2005, (I.U.T).
26. E. Shahaabi, Warm Gas-Pressure (WGP) forming of aluminum sheet materials with non-uniform temperature distribution for automotive industry, (I.U.T), in progress.
27. M. Sohaan-kaar, Analysis of push bending process of circular tubes, (I.U.T), in progress.
28. S. H. Dibaajiyaan, Analysis of solid mechanics problems by combining MLPG and Kreiging methods, (I.U.T), in progress.
29. M. Mahdiyeh, Weight reduction of exhaust manifolds by the tube hydro-forming method, (I.U.T), in progress.
30. H. Javaani, Analysis of Fine Blanking process using Gurson and shear criteria, (I.U.T), in progress.
31. E. Ahmadi, Analysis of spring back in creep-age forming process, (I.U.T), in progress.
32. H. Montazer, Micro sheet metal forming using high pressure exploded gas, (I.U.T), in progress.
33. FR. Ahmadi, Analysis of induction bending of large diameter tubes, (I.U.T), in progress.

Workshops:

"Fundamentals of sheet and tube hydro-forming", M. Farzin, M. Bahreyni, Isfahan University of Technology, ISME2005, May, 17th- 30th 2005.

"Fundamentals of sheet and tube hydro-forming", M. Farzin, December 12-15, 2005. TICME2005