

## **1. Personal Information**

**Name:** Mohammad Javad Nategh

**Date of Birth:** Jan. 1953

**Birth Land:** Sari, Iran

**Residence:** Tehran, Iran

**Marital Status:** Married

## **2. Educational Qualifications**

**B.Sc.:** Mechanical Engineering, Solid Mechanics, Sharif University of Technology, Tehran, Iran, 1976/1355

**M.Sc.:** Mechanical Engineering, Solid Mechanics, Sharif University of Technology, Tehran, Iran, 1979/1358

**Ph.D.:** Mechanical Engineering, Manufacturing Engineering, Birmingham University, Birmingham, UK, 1988/1367

## **3. Lecture Subjects**

**Postgraduate Programs:**

**In Tarbiat Modares University:**

**Design of Structure and Elements of Machine Tools, Vibration of Machine Tools; Advanced Jigs and Fixtures Design, Finite Element Method**

**In Amirkabir University of Technology, Tehran University, Shahid Rajaee University, Training Centers of Arak Machine Building Co. and Iran Press Co:**

**Metal Forming, Manufacturing Processes, Design of Structure and Elements of Machine Tools, Vibration of Machine Tools, Finite Element Method**

**B.Sc. Program:**

**In Tabriz University, Amir Kabir University of Technology, Training Center of Tabriz Machine Tool Manufacturing Co.:**

**Design of Machine Elements, Design and Manufacture of Jigs and Fixtures, Design of Forging Dies, Metal Forming, Design of Machine Tools, Jigs and Fixtures Workshop, Forging Dies Workshop**

## 4. Publications

### Journal Papers

1. D. T. Pham and M. J. Nategh, A Knowledge-Based Jig-and-Fixture Designer's Assistant, *Int. J. Adv. Manuf. Technol.*, Vol. 4, pp 26-45, 1989
2. D. T. Pham and M. J. Nategh, CAD of Devices for Gripping Tapered Components, *ibid*, Vol. 4, pp 369-383, 1989
3. D. T. Pham and M. J. Nategh, Optimum Design of Gripper Jaws for Tapered Components, *Robotica*, Vol. 8, pp 223-230, 1989
4. M. J. Nategh and T. A. Dean, A Concept for a Flexible Forging-Machining System (FFMS), *Int. J. Mach. Tools Manufact.*, Vol. 30, No.1, pp 33-42, 1990
5. M. J. Nategh and M. Bakhshi, AXIFORGE: A PC-Based Forging Design Program for Computer-Integrated Engineering Environments, *Int. J. Computer Applications in Technology*, Vol. 11, Nos 1/2, 1998
6. M. J. Nategh, Badi'azzama'n Jazari, the Renowned Engineer of the Sixth/ Twelve Century, *Waqf, Mirath-e Javidan*, Vol. 4, Issues 3&4, pp 143-156, 1996 (in Persian)
7. M. J. Nategh, Provision of Low Cost Financing Facilities as an Effective State Means of Supporting Development of National Technology, *Industry and Development*, Vol. 3, Issue 16, pp 4-7, 1997 (in Persian)
8. M. J. Nategh, An investigation on two manuscripts of Jazari's al-Heial, *Nāmeḥ-ye Bahārestān*, Vol. IV, No. 1-2, pp 301-306, 2004 (in Persian)
9. M. J. Nategh and A. Kadkhodazadeh, Physical modeling of the structure of a vertical lathe and testing its stiffness, *Modares Technical and Engineering J.*, No. 28, pp 47-56, 2007 (in Persian)
10. M. M. Hoseini, M. J. Nategh and H. Farkhondehal, Statical analysis of force in the hexapod table of a CNC milling machine, *Amirkabir Int. J. of Science and Technology*, Vol. 18, No. 66-B, pp 1-7, 2007 (in Persian)
11. M. J. Nategh and B. Jafari, Analytical and experimental investigations on influential parameters of superplastic forming of titanium based workpieces, *J. Aerospace Science and Technology, JAST*, Vol. 4, No. 2, pp 43-51, 2007
12. S. Amini, H. Soleimanimehr, M. J. Nategh, A. Abdollah and M. H. Sadeghi, FEM analysis of ultrasonic-vibration-assisted turning and the vibratory tool, *J. Materials Processing Technology*, Vol. 201, pp 43-47, 2008
13. M. J. Nategh and S. E. Tabatabaie, An enhanced methodical approach to machine tool design procedure, *Proc. IMechE, Part B: J. Engineering Manufacture*, Vol. 222, pp 309-318, 2008
14. M. J. Nategh and B. Jafari, Experiments with a low-cost hot isothermal pressing machine developed for superplastic forming, *J Materials Engineering and Performance*, Vol. 17, pp 682-687, 2008
15. M. Mahboubkhah, M. J. Nategh and S. Esmaeilzadeh Khadem, Vibration analysis of machine tool's hexapod table, *Int. J. Advanced Manufacturing Technology*, Vol. 38, pp 1236-1243, 2008
16. Mahboubkhah, M. J. Nategh and S. Esmaeilzadeh Khadem, A comprehensive study on the free vibration of machine tool's hexapod table, *Int. J. Advanced Manufacturing Technology*, Vol. 40, pp 1239-1251, 2009
17. Mahboubkhah, M. J. Nategh and S. Esmaeilzadeh Khadem, Inverse dynamic analysis of hexapod machine tooltable and comparative analysis of influential forces, *Modares Technical and Engineering J.*, No. 37, pp 29-38, 2010 (in Persian)
18. M. J. Nategh, Concurrent engineering planning on the basis of forward and backward effects of manufacturing processes, *International journal of Production Research*, Vol. 47, No. 18, pp 5161-5147, 2009

19. S. Amini, M. J. Nategh and H. Soleimanimehr, Application of design of experiments for modelling surface roughness in ultrasonic vibration turning, Proc. IMechE Vol. 223 Part B: J. Engineering Manufacture, pp 652-641, 2009
20. M. J. Nategh and M. M. Agheli, A total solution to kinematic calibration of hexapod machine tools with a minimum number of measurement configurations and superior accuracies, International Journal of Machine Tools & Manufacture, Vol. 49, pp 1155-1164, 2009
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24. M. M. Agheli, M. J. Nategh, Identifying the Kinematic Parameters of Hexapod Machine Tool, International Journal of Aerospace and Mechanical Engineering, Vol. 4, No. 3, pp. 149-154, 2010
25. H. Soleimanimehr, M. J. Nategh, S. Amini, Modeling of Surface Roughness in Vibration Cutting by Artificial Neural Network, International Journal of Aerospace and Mechanical Engineering, Vol. 4, No. 3, pp. 160-155, 2010
26. M. J. Nategh, S. Amini and H. Soleimanimehr, Modeling the Force, Surface Roughness and Cutting Temperature in Ultrasonic Vibration-Assisted Turning of Al7075, Advanced Materials Research, Vols. 83-86, pp 315-325, 2010
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28. M. Shankayi, M. J. Nategh, H. Soleimanimehr, Machining Jigs and Fixtures Planning with the Aid of Expert Systems, Manufacturing Technology, No. 3, pp 13-18, 2010 (in Persian)
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32. H. Razavi, M. J. Nategh, A. Abdollah, H. Soleimanimehr, Analytical and Experimental Analysis of the Kinematics of Relative Motion between the Cutting Tool and Workpiece in Ultrasonic-Vibration Assisted Turning, Modares Mechanical Engineering, Vol. 11, No. 1, pp 89-101, 2011 (in Persian)
33. H. Soleimanimehr<sup>1,a</sup>, M.J. Nategh<sup>2,b</sup>, S. Amini, Analysis of Diametrical Error of Machined Workpieces in Ultrasonic Vibration Assisted Turning, Advanced Materials Research, Vols. 264-265, pp 1079-1084, 2011
34. Davoud Karimi and Mohammad Javad Nategh, "A Statistical Approach to the Forward Kinematics Nonlinearity Analysis of Gough-Stewart Mechanism," *Journal of Applied Mathematics*, vol. 2011, Article ID 393072, 17 pages, 2011. doi:10.1155/2011/393072
35. H. Soleimanimehr, M. J. Nategh, Machining Error due to Spring-back of Work-piece in Conventional and Ultrasonic-Vibration Assisted Turning, Modares Mechanical Engineering, Vol. 11, No. 3, pp 27-42, 2011 (in Persian)
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- 50 M. J. Nategh, Natijato-Doulah or Three treatises in Industrial Inventions, *Scientific Heritage of Islam& Iran*, Vol. 1, No. 2, pp 100-107, 2013 (in Persian)
- 51 H. Parvaz, M. J. Nategh, A pilot framework developed as a common platform integrating diverse elements of computer aided fixture design, *International Journal of Production Research*, Vol. 51, No. 22, pp. 6720-6732, 2013
- 52 Davoud Karimi, Mohammad J Nategh, Development of a novel adaptive nonuniform rational basis spline interpolator with limited kinematic error for hexapod machine tools, *Proc IMechE Part B: J Engineering Manufacture*, Vol. 228, No. 3, pp. 319–327, 2014
- 53 Mohammad Reza Chalak Qazani, Siamak Pedrammehr, Mohammad Javad Nategh, A study on motion of machine tools' hexapod table on freeform surfaces with circular interpolation, *International Journal of Advanced Manufacturing Technology*, Vol. 75, pp. 1763–1771, 2014
- 54 E. Rouhani Esfahani, M. J. Nategh, Instantaneous Center of Rotation of Flexure Joints and Velocity Kinematic Analysis of Microhexapod Using Screw Theory, *Modares Mechanical Engineering*, Vol. 15, No. 3, pp 173-180, 2015 (in Persian)

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- 57 E. Rouhani, M. J. Nategh, Workspace, Dexterity and Dimensional Optimization of Microhexapod, *Assembly Automation*, Vol. 35, No. 4, pp. 341-347, 2015
- 58 Ahadi, A. Rabbani, M. J. Nategh, Investigating of Machining Parameters Effect on Surface Roughness in Milling with Hexapod Machine Tool, *Modares Mechanical Engineering, Proceedings of the Advanced Machining and Machine Tools Conference*, Vol. 15, No. 13, pp. 90-94, 2015 (in Persian )
- 59 H. Parvaz, M.J. Nategh, Analysis of jamming in locating systems of fixtures using minimum norm principle, *Modares Mechanical Engineering, Proceedings of the Advanced Machining and Machine Tools Conference*, Vol. 15, No. 13, pp. -, 2015 (in Persian )
- 60 D. Manafi, M. J. Nategh, Mathematical modeling for effect of machine tools in setup planning method based on permutation for prismatic parts, *Modares Mechanical Engineering, Proceedings of the Advanced Machining and Machine Tools Conference*, Vol. 15, No. 13, pp. -, 2015 (in Persian )
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- 65 M. Shankayi, M. J. Nategh, Analytical and experimental analysis of response of the cutting tool and the workpiece by the chatter phenomenon in turning, *Modares Mechanical Engineering, Proceedings of the Advanced Machining and Machine Tools Conference*, Vol. 15, No. 13, pp.218-222, 2015 (in Persian)
- 66 S. V. Hoseini, M. J. Nategh, Optimum design of rotary forging machine, *Modares Mechanical Engineering, Proceedings of the Advanced Machining and Machine Tools Conference*, Vol. 15, No. 13, pp. 486-490, 2015 (in Persian)
- 67 E. Rouhani, M.J. Nategh, Instantaneous Center of Rotation of Flexure Joints and Velocity Kinematic Analysis of Microhexapod Using Screw Theory, *Modares Mechanical Engineering*, Vol.15, No.3, pp.173-180, 2015 (In Persian)
- 68 E. Rouhani, M. J. Nategh, An elastokinematic solution to the inverse kinematics of microhexapod manipulator with flexure joints of varying rotation center, *Mechanism and Machine Theory*, Vol. 97, pp. 127-140, 2016
- 69 D. Karimi, M. J. Nategh, Contour maps for developing optimal toolpath and workpiece setup in hexapod machine tools by considering the kinematics nonlinearity, *Proc. IMechE, Part B: J. Engineering Manufacture*, DOI: 10.1177/0954405415592123, pp 1-12, 2015
- 70 D. Manafi, M. J. Nategh, A procedure for planning acyclic setups on the basis of simultaneous sequencing of setups and features, *Int. J. Advanced Manufacturing Technology*, DOI 10.1007/s00170-015-7740-8, pp 1-12, 2015
- 71 D. Manafi, M. J. Nategh, H. Parvaz, Extracting the manufacturing information of machining features for computer-aided process planning system, *Proc IMechE Part B: J Engineering Manufacture*, pp 1-12, 2016
- 72 Hadi Parvaz, Mohammad Javad Nategh, Development of an efficient method of jamming prediction for

designing locating systems in computer-aided fixture design, *International Journal of Advanced Manufacturing Technology*, Published Online: 27 Jan 2016, DOI 10.1007/s00170-016-8401-2

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### Conference Papers

1. M. J. Nategh and M. Bakhshi, A Forging Design Program Featuring the Essentials of a Computer Integrated System for Forging Industries, *Advanced Technology of Plasticity*, Proc. 4<sup>th</sup> Int. Conf. Technology of Plasticity, Sept. 5-9, pp 1287-1292, 1993
2. M. J. Nategh, An Expert Design Procedure for Modular Fixturing Systems, Proc. Of the Int. Conf. on Machining Technology in Asian & Pacific Regions, Nov. 30-Dec. 2, Guangzhou, China, pp 402-407, 1993
3. M. J. Nategh and M. M. Mehdi Nejjhad, An Investigation into the Rotary Forging Process Capabilities and Load Estimation, Proc. 9<sup>th</sup> Int. Cold Forging Conf., 22-26 May, Solihull, ENGLAND, PP 417-424, 1995
4. M. J. Nategh, Numerical Procedures for Expert CAD of Fixturing Systems, Proc. The 6<sup>th</sup> Int. Conf. Manufacturing Engineering, 29 Nov.-1 Dec., Melbourne, Australia, pp 529-540, 1995
5. M. J. Nategh, 'Backward Effect Approach' to Concurrency Planning, World Congress, Manufacturing Technology towards 2000, Cairns, Australia, pp 91-100, Sept. 1997
6. M. J. Nategh, Growth and Development of Technology in Developing Countries and Iran, Winner of the Prize for Distinguished Paper, Proc. the 1<sup>st</sup> Seminar on Economical Reconstruction of I. R. Iran, Tarbiat Modares University, Economy Group, Tehran, Sept. 1989, pp 143-165, 1992(in Persian)
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8. F. F. Saniee, M. J. Nategh, CAD of Fuller and Roller Dies, *ibid*, pp47-55 (in Persian)
9. M. M. Rajabi, M. J. Nategh, Simulation of Deep Drawing Process, *ibid*, pp 194-204 (in Persian)
10. F. F. Saniee, M. J. Nategh, A Review on Analytical and Experimental Procedures for Estimation of Forging Load and Energy, *ibid*, pp 233-240 (in Persian)
11. M. J. Nategh, The Effects of Temporal and Regional Parameters on the Quality of Technology Development, Proc. Seminar on Azerbaijan and Development, Tabriz, pp 967-980, 1993 (in Persian)
12. M. J. Nategh, H. R. Nafisi, S. Rafatjah, M. T. Khojasteh, E. Ebrahimi and J. Mahmoodi, Jazari's Innovations, Abstract Proc. International Congress on Development of Science and Technology in Islamic World, Tehran University, May 17-19, p 270, 1993 (in Persian)
13. H. Fadaee'an and M. J. Nategh, AXISLAB Software for Estimation of Flow Model in Hot Forging of Axisymmetric Components with Closed Dies, Proc. 3<sup>rd</sup> Annual Conf. of Mechanical Engineering, May 15-17, Amir Kabir University of Technology, pp 1017-1024, 1995 (in Persian)
14. D. Karimzadegan Moghaddam, R. G. Heidari and M. J. Nategh, Manufacturing of Copper Electrodes for Die-Making by Forging Method (in Persian), *ibid*, pp1047-1053
15. M. Ghatie and M. J. Nategh, Material Flow during the Forging of Axisymmetric Components with Closed Die, Proc. 4<sup>th</sup> Conf. Manufacturing Engineering, Tehran, Feb. 15-16, Amir Kabir University of Technology, pp 165-175, 1999 (in Persian)
16. G. Kherad, M. J. Nategh and M. R. Ghazawi, Investigation of Motion Profiles of Forming Tool in Orbital Forging Process, *ibid*, pp 176-184 (in Persian)

17. M. Bakhshi, S. Azizi, M. J. Nategh, A. Mohammadyoon, A. Marasi and K. Adibi, Design and Manufacture of a Prototype of Machining Center, *ibid*, pp 255-264 (in Persian)
18. Collaboration between National and International Agents, Essential to Development of Technology (in Persian), Seminar on Technology and Renovation of Industries (Proc. Not Published), 1999 (in Persian)
19. B. Jafari and M. J. Nategh, Analytical and experimental investigation on superplastic forming of titanium alloys, Proc. 6<sup>th</sup> Conf. Manufacturing Engineering, Tehran, Dec. 22-25, Amir Kabir University of Technology, pp 1-10, 2004 (in Persian)
20. M. Mahboubkhah, M. J. Nategh and S. Esmaeilzadeh Khadem, The inverse dynamic analysis of hexapod table of machine tools, 1<sup>st</sup> Int. and 7<sup>th</sup> National Conf. Manufacturing Engineering, Tehran, Dec. 12-15, Tarbiat Modares University, pp 1-11, 2005 (in Persian)
21. M. J. Nategh, D. Sharyari and M. Kazemi, Vibrational Analysis of the structure of 3-axis FP4MB CNC milling machine by FEM, 1<sup>st</sup> Int. and 7<sup>th</sup> National Conf. Manufacturing Engineering, Tehran, Dec. 12-15, Tarbiat Modares University, pp 1-11, 2005 (in Persian)
22. M. J. Nategh and V. Sanjabi, Modeling and simulation of routing and guiding system of AGVs, Proc. 14<sup>th</sup> Annual Int. Conf. of Mechanical Engineering, May, Isfahan University of Technology, pp 1-8, 2006 (in Persian)
23. M. J. Nategh and B. Jafari, HIP deep drawing of titanium-alloy components, 14<sup>th</sup> Annual Int. Conf. of Mechanical Engineering, May, Isfahan University of Technology, pp 1-8, 2006 (in Persian)
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25. D. Shariari, M. H. Sadeghi and M. J. Nategh, Modeling of parting line in blade forging dies, Proc. 4<sup>th</sup> Int. Conference and Exhibition on Design and Production of Machines and Dies/Molds, 21-23 July, Cesme, Turkey, pp 331-337, 2007
26. B. Sadeghi-Ghomi and M. J. Nategh, Design and manufacture of modular forging dies for axisymmetric workpieces, Proc. 4<sup>th</sup> Int. Conference and Exhibition on Design and Production of Machines and Dies/Molds, 21-23 July, Cesme, Turkey, pp 299-304, 2007
27. D. Karimi, M. J. Nategh and A. Mofidi, A study on the volume of hexapod machine tools' workspace, Proc. 4<sup>th</sup> Int. Conference and Exhibition on Design and Production of Machines and Dies/Molds, 21-23 July, Cesme, Turkey, pp 241-246, 2007
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29. S. Amini, M. J. Nategh and H. Soleimanimehr, Finite Element Analysis of Ultrasonic Cutting in One and Two Directions, 36<sup>th</sup> Annual UIA Symposium, 19-21 March, Teddington, Middlesex, England, 2007
30. M. A. Hoseini, H. R. M. Daniali and M. J. Nategh, Workspace analysis of Stewart\_Gough parallel robot free of buckling in the legs, 2<sup>nd</sup> Int. and 8<sup>th</sup> National Conf. Manufacturing Engineering, Tehran, 11-13 Dec., University of Science and Technology, Tehran, Iran, pp 1-10, 2008 (in Persian)
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  36. M. M. Agheli and M. J. Nategh, Observability of kinematics parameter errors for calibration of parallel robots as Stewart platform, 9<sup>th</sup> National Conf. Manufacturing Engineering, March 3-5, The University of Birjand, Birjand, Iran, pp 1-9, 2009
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2. M. J. Nategh, Machine Tools' Jigs and Fixtures Design, Tarbiat Modares University Press, Tehran, Iran, 2007 (in Persian)

### **5. Patents**

1. Orbital Forging Machine, Patent No. 25106, Tehran, Iran, 1994
2. Ultrasonic-Vibration Assisted Turning, Patent No. 43684, Tehran, Iran, 2007
3. Six-Axis Hexapod Milling Machine

## **6. Industrial Career (From 1976 to 2005)**

### **Part of Industrial Career**

Chairman and Managing Director of Tabriz Machine Tool Manufacturing Co. (with about 2500 employees);

Chief Executive Officer for Technology Development in Heavy Industries;

Managing Director of Diesel Engine Manufacturing Co.;

Member of Directing Board of Tractor Manufacturing Co. (with about 5000 employees);

General Manager for Feasibility Studies in Heavy Industries;

Vice Deputy Minister of Heavy Industries in Plan and Program Department;

Vice Deputy Minister of Industries in Research and Training Department;

Chief executive Officer for Development of Research Centers in IDRO;

Manager of Azerbaijan Industrial Zone;

President of Azerbaijan Council for Production Planning;

Design and Process Planning Engineer in Tabriz Machine Tool Manufacturing Co..