

SEYED VAHID HOSSEINI

Area of Interest:

Nano-Manufacturing and tribology,
Mechanics of Material,
Engine Structural Validation,
FEM and Atomistic Simulation,
Root Cause Analysis.

Contact Address:

Faculty of Mechanical Engineering
Shahrood University of Technology
P.O Box: 3619995161
Shahrood, Iran.
Tel: (+98) 2332300240 – 3364
Email: V_hosseini@shahroodut.ac.ir
Mscmechanic@hotmail.com



Experience

Assistant Professor, Mechanical Engineering

Shahrood University of Technology

2013 - Present

Courses Taught:

- 1-Advanced Machining Technology (MSc)
- 2-Design of Experiment (DOE) and Optimization (MSc)
- 3-Advanced Mathematics (MSc)
- 4-Instrumentation Engineering (MSc)
- 5- Static (BSc)
- 6-Strength of Materials (BSc)
- 7-Machine Design (BSc)
- 8-Manufacturing Science & Technology (BSc)
- 9-Measurement Systems (BSc)

Working in two laboratories:

1. Fatigue and Dynamic Load Laboratory.
Working with two fatigue test machine:
Instron 8802-250kN uniaxial fatigue test machine servo-hydraulic testing system.
Dynamic Modular 50kN Servo-hydraulic Universal Testing Jack up to 100Hz.
2. Metrology & Measurement System Laboratory.

Some Industrial Projects:

1. Fatigue Life Prediction of Peugeot 206 Engine Cradle under Anti-Couple Loading and Determination of Fatigue Strength in Welded Joint.
2. Life Time Prediction and Validation of Peugeot 2008 Aluminum Engine Mounting Using Numerical Simulation and PSA Standard.
3. Effect of phase variation in bi-directional cyclic loading of gearbox mounting using finite element method and estimation of real fatigue strength with one-directional tests.

Chief Technology Officer

2011 - 2014

Dinamotors Laboratory, Tehran, Tehran (Iran)

Dinamotors Company Laboratory have 3 engine test rooms (up to 190 kW) and also many kind of component testing facilities:

- ✓ Experience on environmental testing, thermal testing, fatigue and vibrational testing.
- ✓ Experience on design and manufacturing test facilities.
- ✓ Root cause analysis of more than 100 project about power train component failure.
- ✓ Getting an ISO/IEC 17025 accreditation for this laboratory.
- ✓ Working with many kind of Measurement technology like strain gauge, temperature, pressure, laser displacement, Hall Effect rpm sensor and wireless measurement technology.
- ✓ Working with some electronic and mechanical actuator and infrastructures.
- ✓ Experience on testing marine diesel engines up to 1500 kW in outsource engine laboratory.
- ✓ More than 25,000 hrs experience on engine durability test.
- ✓ Benchmarking of 4 marine outboard engine and 3 diesel marine engine.

Some Industrial Projects:

1. Design and manufacturing pressure cycle machine.
2. Design and manufacturing thermal fatigue machine with an elevator mechanism.
3. Vibrational durability test of vehicle dashboard, vehicle radiator and vehicle light.
4. Design and manufacturing a setup to measure pressure loss of exhaust system based on PSA standard.
5. Root cause analysis of water-cooled exhaust manifold cracking.
6. Root cause analysis of con rod snapping of marine diesel engine.

Validation Development Manager

2007 - 2011

Irankhodro Power train Company, Tehran, Tehran (Iran)

Validation responsible of EF7-Turbo charged bi-fuel engine.

More than 10,000 hrs experience on engine durability test.

Some of validation development project:

1. Thermal Analysis of Exhaust Manifold of a Natural Gas Turbo-charged Engine.
2. Improvement of Chain Tensioner Wear Characteristic Using Combined Numerical and Experimental Method.
3. Failure Analysis and Improvement of Cracked Exhaust Manifold.
4. Design and Manufacturing of Piston Cooling Jet Test Rig and Thermal Analysis of Piston.
5. Design and Manufacturing a Test Rig to Evaluate Erosion of Spark Electrode in Bi-Fuel.
6. Spark Plug Validation Standard for Irankhodro Company.

Khajeh Nasir Toosi University, Tehran, Tehran (Iran)

Working in explosion laboratory as a simulation engineer. Two project were done as following:

- 1-Experimental and Numerical Analysis of Concrete structure under Detonation Loading.
- 2- Numerical and Experimental Investigation of Folding Process of Thin-walled Square Tube under Out of Plane Loading.

Publications

Journal Papers:

1. S. V. Hosseini, M. Vahdati, "Modeling the effect of tool edge radius on contact zone in nanomachining", *Computational Materials Science*, Vol. 65, p. 29–36, 2012, DOI: 10.1016/j.commatsci.2012.06.037.
2. S. Javan, S. Sh. Alaviyoun, S. V. Hosseini, F. Ommi, "Experimental Study of Fine Center Electrode Spark Plug in Bi-fuel Engines", *Journal of Mechanical Science and Technology*, Vol. 28 (3), 2014, pp.1089-1097, DOI: 10.1007/s12206-013-1185-5.
3. M. Izadi, M. Mirsalim, V. Hosseini, Sh. Alaviyoun, "Experimental and Numerical Study of Piston Thermal Management using Piston Cooling Jet", *Journal of Mechanical Science and Technology*, Vol. 28 (3), 2014, pp.1079~1087, DOI: 10.1007/s12206-013-1183-7.
4. S. V. Hosseini, M. Vahdati, A. Shokuhfar, "Investigation of Interatomic Potential on Chip Formation Mechanism in Nanometric Cutting Using MD Simulation", *Journal of Defect and Diffusion Forum (DDF)*, Vols. 312-315, pp. 983-988, 2011.
5. S. V. Hosseini, M. Vahdati, A. Shokuhfar, "Effect of Tool Nose Radius on Nano-Machining Process by Molecular Dynamics Simulation", *Journal of Defect and Diffusion Forum (DDF)*, Vols. 312-315, pp. 977-982, 2011.
6. S. V. Hosseini, M. Vahdati, Effect of Nano Void Size on Cutting Parameters in Nano-Machining Process Using MD Simulation, *International Journal of Advance Manufacturing Technology*, Under Revision Process.
7. S.V. Hosseini, J. Zamani, A. Darvize and M. Soleimani, "Experimental and Numerical Analysis of the Effects of Geometrical and Mechanical Parameters on the Folding Force of Extruded Square Energy Absorbers, Under Out of Plane Loading", *Journal of Mechanical & Aerospace*, Vol. 2, p.27-40, 2005, Farsi.
8. S. Javan, S. V. Hosseini, S. Sh. Alaviyoun, "Investigation the effect of copper in center electrode on temperature and electrode erosion", *Journal of modeling in Engineering*, Vol. 25, No.1, 2012, Farsi.
9. S. Javan, F. Ommi, S. V. Hosseini, "An Experimental Investigation of Spark Plug Temperature in Bi-fuel Engine and Its Effect on Electrode Erosion", *International Journal of Automotive Engineering*, Vol. 2, Number1, 2012, Farsi.
10. S. Javan, F. Ommi, S. V. Hosseini, "Investigation of Effects of Spark Plug 's Electrodes Erosion on yhe Required Ignition Voltage and Performance of Natural Gas Engine", *The Journal of Engine Research*, Vol. 21, 2010, Farsi.
11. M.A. Ehteram, M. Ahmadi, H. Basirat, S. V. Hosseini, S. M. Mirsalim, "Effect of Oil Jet Impingement with Piston in Oil Pull-over of Blow-by using Engine Motoring Method", *The Journal of Engine Research*, Vol. 19, 2010, Farsi.

12. S. Moradi, S. V. Hosseini, "Investigation the Effect of Clamping Stress on Ultrasonic Velocity in Cylinder Head Bolt of Diesel Engine", *The Journal of Engine Research*, Vol. 50 (Spring 2018), pp. 29-40, Farsi.
13. S. Moradi, S. V. Hosseini, "Effective of Main Bearing Bolt Manufacturing Parameters on Functional Performance in High Speed Diesel Engine using Torque-Angle Method", *The Journal of Engine Research*, Vol. 52 (Autumn 2018), pp. 55-62, Farsi.
14. E. Qasemi, S. V. Hosseini, S. K. Yazdanparast, "Oil Quality Monitoring in Gasoline Spark Ignition Engine Using Oil Dielectric Measurement", *The Journal of Engine Research*, Vol. 53 (Winter 2019), pp. 45-54, Farsi.
15. A. Talebi, S. V. Hosseini, "Optimization of Online Induction Sensor for Ferrous Metals Particles Identification in Engine Oil", *Journal of Engine Research*, Vol. 53 (Winter 2019), pp. 03-11, Farsi.
16. S. Salamati, S. H. Ghaderi, S. V. Hosseini, "Experimental Determination of the Modified Drucker- Prager Cap Constitutive Model for 92 Percent Alumina Powder", *Amirkabir Journal of Mechanical Engineering*, DOI: 10.22060/MEJ.2019.16354.6340, Farsi.
17. S. V. Hosseini, A. Mosayebi, "Improvement the Life Time of Marine Outboard Engine Using Computerized Maintenance Management System", *Journal of Management System*, Vol. 68 (Spring 2019), pp. 57-71, Farsi.
18. S. V. Hosseini, M. Vahdati, "Effect of Tool Geometry and Cutting Speed on Heat Generation in Nanometric Cutting of Copper Single Crystal, *Journal of materials science researches*", Vol. 2, N.8, p. 45-36, 2012, Farsi.
19. S. V. Hosseini, M. Vahdati, "effect of Nano-Void Position on Nanomachining characteristics using MD simulation", *Journal of Manufacturing Technology*, 2012, Farsi.

Conference Papers:

1. S. V. Hosseini, M. Vahdati, "Investigation of Frictional Resistance in Nanometric Cutting by Molecular Dynamics Simulation", *Proc. ASME Conf., ESDA2010, Istanbul-Turkey, 2010.*
2. S. V. Hosseini, M. Vahdati, "Investigation of Interatomic Potential on Chip Formation Mechanism in Nanometric Cutting Using MD Simulation", *6th Int. Conf. on Diffusion in Solids and Liquids-DSL2010, Paris-France, 2010.*
3. S. V. Hosseini, M. Vahdati, "Effect of Tool Nose Radius on Nano-Machining Process by Molecular Dynamics Simulation", *6th Int. Conf. on Diffusion in Solids and Liquids-DSL2010, Paris-France, 2010.*
4. S. V. Hosseini, M. Vahdati, "Molecular Dynamics Simulation of Nano-Machining of Single Crystal of Copper with a Void", *4th Int. Conf. on Advanced Computational Engineering and Experimenting-ACE-X2010, Paris-France, 2010.*
5. M. Izadi, S. V. Hosseini, S. Sh. Alaviyoun, S. M. Agha Mirsalim, "Effect of Oil Jet Impingement on Piston Heat Transfer in SI Engine", *7th International Conference on Computational Heat and Mass Transfer, Istanbul, Turkey, July 18-22, 2011.*
6. M. Izadi, S. V. Hosseini, S. Sh. Alaviyoun, S. M. Agha Mirsalim, "Experimental and Numerical Analysis of the Piston Cooling Jet's Performance", *Proc. ASME Conf., ESDA2010, Istanbul-Turkey, 2010.*
7. S.V. Hosseini, J. Zamani, "Investigation of Energy Absorption in Thin-Walled Extruded Square Tubes by Experimental and Numerical Methods", *3th Int. Conf. on Diffusion in Solids and Liquids (DSL2007), Algarve-Portugal, 2007.*

8. S. Salamati, S. H. Ghaderi, S. V. Hosseini, "Determination of Modified Drucker- Prager Parameters Model for KMS-92 Alumina Powder", 27th Annual Conference on Mechanical Engineering (ISME2019), Tehran-Iran, 2019, Farsi.
9. A. Ziaei, S. V. Hosseini, S. H. Ghaderi, "Thermomechanical Simulation of Online Oil Quality Monitoring Sensor Under Engine Service Conditions", 2nd Conf. on National Combustion Engine-NICICE2019, Babol-Iran, 2019, Farsi.
10. M. Bahadori, S. V. Hosseini, Sh. Moradi, A. R. Sadeghi, "Fatigue Life Determination of Welded Joint in Engine Cradle using Cumulative Fatigue Test and Numerical Modeling", 2nd Conf. on National Combustion Engine-NICICE2019, Babol-Iran, 2019, Farsi.
11. A. Sadeghi, S. V. Hosseini, P. Sharghi, A. R. Sadeghi, "Effect of Engine Oil Oxidation in Hot Condition on Viscosity and Oil Deposits", 2nd Conf. on National Combustion Engine-NICICE2019, Babol-Iran, 2019, Farsi.
12. A. Talebi, S. V. Hosseini, T. Nami Saei, "Design and Manufacture of Prototype Online Sensor for Identification of Ferrous Metals Particles in Engine Oil", 10th Conf. on Internal Combustion Engine-ICICE2018, Tehran-Iran, 2018, Farsi.
13. A. sadeghi, S. V.Hosseini, A. Kazemi, "Detection of the Causes and Type of Failure of Outboard Engines by Using Offline Oil Condition Monitoring", 10th Conf. on Internal Combustion Engine-ICICE2018, Tehran-Iran, 2018, Farsi.
14. Sh. Moradi, S. V. Hosseini, M. B. Nazari, "Effect of Manufacturing Process on Fatigue Life of Main Bearing Bolt in Marine Diesel Engine", 10th Conf. on Internal Combustion Engine-ICICE2018, Tehran-Iran, 2018, Farsi.
15. M. R. Jamshidi, S. V. Hosseini, R. Sadeghi, M. Abedi, "Simulation of Timing Belt's Flapping in Spark-Ignition Engine Using AVL-Excite" , 10th Conf. on Internal Combustion Engine-ICICE2018, Tehran-Iran, 2018, Farsi.
16. S. V. Hosseini, A. Sadeghi, "Investigation of Type and Severity of Marine Diesel Engine Failure Using Oil Condition Monitoring", 2nd National Conf. of Marine Propulsion, Tehran-Iran, 2017, Farsi.
17. M. S. Akbarian, M. Gerdoei, S. V. Hosseini, "Investigation of the Effective Factors on T-Shape Manufacturing Process Using Two-Way Pressure with Flexible Tool", 4th National and 2nd Int. Conf. in Applied Research on Electrical, Mechanical and Mechatronics Engineering, Tehran, Iran, 2017, Farsi.
18. E. Qasemi, S. V. Hosseini, "Detection of Water, Oxidation and Fuel Contamination in SI Engine Oil Using Online Capacitive Oil Monitoring Sensor", 4th National and 2nd Int. Conf. in Applied Research on Electrical, Mechanical and Mechatronics Engineering, Tehran, Iran, 2017, Farsi.
19. Sh. Moradi, S. V. Hosseini, "Investigation the Effect of Using Aged Blots on Friction Coefficient and Coupling Force in Marine Diesel Engine", 4th National and 2nd Int. Conf. in Applied Research on Electrical, Mechanical and Mechatronics Engineering, Tehran, Iran, 2017, Farsi.
20. H. Atashzar, S. H.Ghaderi, S. V. Hosseini, "Comparison Characteristic Curve Metal Cylinder Head Gasket from Localize Loading Device with Finite Element Simulation", 9th Conf. on Internal Combustion Engine-ICICE2016, Tehran-Iran, 2016, Farsi.
21. H. Atashzar, S. H.Ghaderi, S. V. Hosseini, "Loading - Unloading Curve Characterization of Metal Cylinder Head Gasket in Diesel Engine", 3rd National and 1st Int. Conf. in Applied Research on Electrical, Mechanical and Mechatronics Engineering, Tehran, Iran, 2016, Farsi.

22. M. Rezaei, S.V. Hosseini, M. Kazemi, "Engine Heat Shield Modification via Vibrational Analysis", 8th Conf. on Internal Combustion Engine-ICICE2014, Tehran-Iran, 2014, Farsi.
23. S.V. Hosseini, J. Zamani, A. Refahi, A. Alavinia, "Numerical and Experimental Analysis of Concrete Behavior under Detonation Loading", 4th Int. Conf. on Mechanical Engineering, Isfahan-Iran, 2005, Farsi.
24. S.V. Hosseini, J. Zamani, "Numerical and Experimental Analysis of Effect of Trigger on Behavior of Thin-Walled Cellular Structures with Square Cross Section under Semi-Static Load", 4th Int. Conf. on Mechanical Engineering, Isfahan-Iran, 2005, Farsi.
25. S.V. Hosseini, J. Zamani, "Numerical and Experimental Analysis of Thin-walled Tubes Under Semi-Static Out of Plane Loading", 4th Int. Conf. on Mechanical Engineering, Isfahan-Iran, 2005, Farsi.
26. J. Zamani, A. Alavinia, S.V. Hosseini, "Numerical Analysis of Concrete Behavior under Detonation Loading", 1st Int. Conf. on Seismic Retrofitting, Tehran, Iran Mechanical Engineering, Isfahan-Iran, 2006, Farsi.
27. J. Fathi Sola, S. V. Hosseini, S. A. Jazayeri, M. Shariat, "Analysis of Piston Fatigue under Mechanical and Thermal Loading", Int. Conf. on Internal Combustion Engine-ICICE2009, Tehran-Iran, 2009, Farsi.
28. F. Omi, S. Javan, S.V. Hosseini, S. S. Alaviyoun,, "Experimental Investigation on Spark Plug In SI Engines", The 9th Conference of Iranian Aerospace Society, Tehran, Iran, 2011, Farsi.
29. F. Omi, S. Javan, S.V. Hosseini, S. S. Alaviyoun, "Experimental Investigation on Spark Plug In a Bi-Fuel Engine", The 19th Annual Conference on Mechanical Engineering (ISME2011), Birjand-Iran, 2011, Farsi.
30. S. Sh. Alaviyoun, P. Sharghi, S. V. Hosseini, "An experimental investigation of the Effects of Turbocharger on the Amount of Blow-by in Bi-Fuel Spark Ignition Engine", International Conference of Internal Combustion Engine (ICICE 2011), Tehran, Iran, 2011, Farsi.
31. M. Azadi, A. Mafi, S. V. Hosseini, P. Sharghi, "Root Cause Analysis of Cracked Cylinder Head and its Finite Element Simulation", International Conference of Internal Combustion Engine (ICICE 2011), Tehran, Iran, 2011, Farsi.
32. M. Rezaie, S. V. Hosseini, A. Shaddel, "Dynamic Tension Measurement in Timing Drive Belt to Investigate Sensitive Parameters", International Conference of Internal Combustion Engine (ICICE 2011), Tehran, Iran, 2011, Farsi.
33. S. Javan, S. V. Hosseini , S. Sh. Alaviyoun, F. Ommi, "Effect of Spark Plug Erosion on Required Voltage in a Natural Gas Engine" , International Conference of Internal Combustion Engine (ICICE 2011), Tehran, Iran, 2011, Farsi.
34. S. Javan, S. V. Hosseini , S. Sh. Alaviyoun, F. Ommi, "Effect of Spark Plug Electrode Geometry on Performance and Emission in a Bi-Fuel Spark Ignition Engine" , International Conference of Internal Combustion Engine (ICICE 2011), Tehran, Iran, 2011, Farsi.
35. S. V. Hosseini, M. Vahdati, "Effect of Nano-Machining Parameters on Specimen Temperature Increasing", 3rd International Conference of Manufacturing Engineering (ICME), Tehran, Iran, 2011, Farsi.

Books:

- 1) Author of "An Introduction of Machine Design", MAHAN Publication, Tehran, Iran, in publishing progress.
- 2) Author of a monograph chapter in "MATERIALS WITH COMPLEX BEHAVIOUR II", Springer Germany Publication, will be published in 2011.

Education

K.N. Toosi University of Technology

2008 - 2013

PHD, Mechanical Engineering

Tehran, Tehran (Iran)

Title of thesis: Simulation of Nano-Machining Process and Investigation of Crystal Defects Using Molecular Dynamics

Amir Kabir University of Technology

2006 - 2008

MASTERS, Mechanical Engineering

Tehran, Tehran (Iran)

Title of thesis: Conversion of Conventional Spark Ignition Engine to CNG Direct Injection Using Spark Plug Injector

Ferdowsi University

2001 - 2005

BACHELORS, Mechanical Engineering

Mashhad, Khorasan (Iran)

Title of thesis: Strengthening of Concrete Structure with FRP material using Finite Element Method

Licenses & Certifications

1. Best MSc Thesis Award, Int. Conf. on Internal Combustion Engine, ICICE2007.
2. Financial & Accounting Skills for Managers, 2018, Industrial Management Institute, Iran.
3. General Requirements for the Competence of Testing and Calibration Laboratories According to ISO17025:2005, 2017, TUV Saira Cooperation, Iran.
4. Failure Mode and Effects Analysis (FMEA), 2011, Irankhodro Powertrain Company, Iran.
5. Customer relation management, 2010, Irankhodro Powertrain Company, Iran.
6. Fracture Analysis of Industrial Components, 2009, Iran University of Science and Technology, Iran.
7. Creative Problem Solving, 2008, Satim International, Sweden.
8. Geometric Dimensioning and Tolerancing (GD&T), 2008, Irankhodro Powertrain Company, Iran.

Background Courses Include:

Molecular Dynamic Simulation	Material Science	Nanotechnology
Finite Element Method	Strength of Materials	Manufacturing Processes
Computer Programming	Continuum Mechanics	Advanced Engine Design
Advanced Numerical Analysis	Elasticity	GD&T
Methods of Optimization	Theory of Plasticity	Problem Solving
Design of Experiment (DOE I, II)	Fracture Mechanics	Practical Failure Analysis

Websites

<http://shahroodut.ac.ir/en/as/?id=S735>