

Subject: **Curriculum Vitae**

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Google Scholar:

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Education:

Ph.D. Mechanical Engineering, Amirkabir University of Technology, Tehran, Iran, 2013

M.Sc. Mechanical Engineering. Amirkabir University of technology, 2007

B.Sc. Mechanical Engineering, Amirkabir University of technology, 2005

Research Interests:

Additive manufacturing (Binder jetting, wire and arc, SLM), Advanced manufacturing methods (Ultrasonic, EDM, ECM, ECD), Design and manufacturing of internal combustion engine systems and components, machine vision, diesel and gaseous sprays modeling and experimental investigation.

Professional Experience

- Assistant Professor, Semnan university, mechanical engineering department, 2015-present
- Senior researcher, RKP (Ring Khodro Pars) (Iranian Piston ring manufacture), 2016-present
- Head of Iran society of engines (2018-2023)
- Advisor Mapna Group-2021-2023.
- Co-Founder and Board member Fanafarinan Elm Gostar-2019-Present (diesel engine components production factory)
- Co-Founder and Board member, Pars Tavan Parsam, 2021- 2023
- Research Asistant, Iran Khodro Powertrain Company (IPCO), Laboratory for Fuel and combustion development, 2013-2015.

- Iran Khodro Powertrain Company (IPCO), engine design department (head of fuel injection systems division), 2008-2017.
- Research Assistant, Fuel, Combustion, and Emission-FCE center, Sharif university of technology, 2014-2017.
- Iran Khodro Powertrain Company (IPCO), engine design department (head of Benchmarking department 2014-2017)
- Iran Khodro Powertrain Company (IPCO), EFD Engine design project (High speed 1.5l Turbocharged CR engine), Top End group team leader and Component Engineer of FIS Parts, 2014-2016
- Iran Khodro Powertrain Company (IPCO), IK312 Project (3Cylinder GDI engine), Benchmarking Team Leader, 2014-2016
- Kavosh Mechanize Fanavar, Design of a robot for monitoring of sewer pipes, May-Sep 2006
- CNC and Metrology Lab, Mechanical faculty of Amirkabir University of Technology, 2004-2007, operator of CMM machine
- Tina Sanat Mobadel Company, Engine radiator manufacturer, Jun-Sep 2005
- Society of manufacturing engineering of Iran, 2003-2004

Teaching Experiences

- Machining and machine tools, , for IranKhodro group (SAPCO), Dec. 2024.
- Systems and design of high speed common rail diesel engine, for IranKhodro group (SAPCO, ISACO,...), August 2015
- Advanced internal combustion engines course, (advanced optical methods and design of fuel injection system components, Amirkabir University of technology, 2014-2020.

- Workshop of Applications of optical diagnostics for flow visualization in IC engines, 8th International Conference on Internal Combustion Engines and Oil, 17-19 February 2014, Tehran, Iran
- Automotive Engineering course teaching (Engine top end parts design course), University of applied science (IranKhodro Branch), Tehran, Iran, 2013-present
- Mechanical engineering courses teaching, Azad University, Saveh branch, 2007-2011

Awards

- Best research project, Ministry of Industry, Mining and Trade, 2020.
- Best industry-university collaborator-Semnan university 2018.
- Best Bsc thesis of Amirkabir University of technology, 2005.
- Winner of the Best paper of 11th international conference of Iranian manufacturing engineering, 2004.

Professional Memberships

- Iranian Society of engines
- society of manufacturing engineering of Iran
- Iranian Society of Mechanical Engineers (ISME)
- Combustion institute

Short-Term Positions:

- Manager Training Program, GIZ Germany, Leipzig, April 2022-April 2023 (Virtual and physical)
- Ph.D visiting student, Laboratory for Turbulence Research in Aerospace and Combustion (LTRAC), Dept. Mechanical and Aerospace Engineering, Monash University, Australia, March-September 2012

Selected Publications

Peer Reviewed Journal Papers:

- Kamyab M, **Hajjalimohammadi A**, Sglavo VM, Sajjadi M, Development of new sand casting mold composition for binder jetting 3D printing process based on inorganic binder by adding dimensional accuracy modifiers: a comprehensive analysis of DOE parameters, 2025, Progress in Additive Manufacturing.
- Musavi Rad SM, **HajjaliMohammadi A**, Abedini V, Manufacturing of copper-chromium composite using electrochemical additive manufacturing method: a screening study, 2025, Progress in Additive Manufacturing , 10:1435–1446
- Bagheri A, Abedini V, **Hajjalimohamadi A**, Impact of machining parameters on surface roughness and machining forces in Al7075 turning with minimum quantity lubrication and cold fluid, 2025, Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering.
- Khademitab M, Abedini V, **Hajjalimohammadi A**, Effects of Cooling Conditions and Machining Parameters on Thrust Force, Surface Roughness, and Hole Quality in Machining of Fiber Metal Laminates, 2025, Mechanics of Advanced Composite Structures 12 (3), 671-683
- Aboujafari M, Valipour MS, **Hajjalimohammadi A**, Parivar AH, Experimental study of simultaneous effects of porous medium and biodiesel application on spray and combustion characteristics of gasoline–biodiesel blends, 2024, Journal of Thermal Analysis and Calorimetry 149 (14), 7565-7578.
- KianiMajd M, **Hajjalimohammadi A**, Development of an electrochemical deburring process using ultrasonic waves for combustion engine oil spring ring, 2024, The Journal of Engine Research 71 (2), 55-68.
- Karbasforoosh S, **Hajjalimohammadi A**, Experimental study of the ultrasonic additive manufacturing using the aluminum and CFRP composite, 2024, Iranian Journal of Manufacturing Engineering 11 (6), 54-65.
- Kamyab M, **Hajjalimohammadi A**, Rahimi Asiabarakhi H, Sharokhi E, Investigation on dimensional and geometrical accuracy of the 3D printed intake sand core of TU5+ new engine cylinder head, 2024, Iranian Journal of Manufacturing Engineering 11 (5), 1-12.
- **Hajjalimohammadi A**, Motalebi S, Kamyab M, Mirzaei M, Experimental investigation on the effect of pre-coating porous surface cast iron cylinder in ALFIN process to create bonding with aluminum cylinder block, 2024, Iranian Journal of Manufacturing Engineering, 11(5), 24-31.

- Almansoori AQ, **Hajialimohammadi A**, Mirsalim SM, Mehrabivaghar M, An experimental and analytical investigation of the evaporation characteristics of engine oil film, 2023, Journal of Thermal Analysis and Calorimetry 148 (21), 12037-12048.
- KianiMajd M, **Hajialimohammadi A**, Raiat Roknabadi A, Golbaz S, Experimental study of the effect of ultrasonic waves on the parameters of the electrochemical deburring process, 2023, Iranian Journal of Manufacturing Engineering 10 (2), 1-6
- Hosseini H, **Hajialimohammadi A**, Jafari Gavzan I, Hajimousa MA, Numerical and experimental investigation on the effect of using blended gasoline-ethanol fuel on the performance and the emissions of the bi-fuel Iranian national engine, 2023, Fuel, 337, 127252.
- Baratian A, Mirsane SA, Jadidi AM, **Hajialimohammadi A**, Investigating the effect of bioethanol fuel concentration with different percentages on power and torque in EF7 engine, 2023, The Journal of Engine Research 70 (3), 18-29.
- Kamyab M, **Hajialimohammadi A**, Motalebi S, Jadali A, Investigating the effect of the coating process on improving the quality of mechanical bonding in the casting of aluminum cylinder block with cast-in iron liner, 2023, The Journal of Engine Research 70 (2), 80-98.
- Allocca L, De Vita A, Duronio F, Montanaro A, Ranieri S, **Hajialimohammadi A**, Direct injection of methane in advanced propulsion systems: effects of thermodynamic conditions, 2023, The Journal of Engine Research, 69, 30-38.
- **Hajialimohammadi A**, Musavi Rad SM, Ghare Bagheri H, Experimental Investigation on the Effect of Using CrN and DLC Coatings on the Wear Properties of The Internal Combustion Engine Piston Ring, 2023, Karafan Journal 20 (1), 263-278
- Karimpour H, Abedini V, **Hajialimohammadi A**, Effects of process parameters on machining forces and surface roughness during turning 304L steel using SiO₂ nanofluid, 2022, Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 236 (6), pp 2336-2348.
- Oskueyan S, Abedini V, **Hajialimohammadi A**, Effects of hybrid Al₂O₃- SiO₂ nanoparticles in deionized water on the removal rate and surface roughness during electrical discharge machining of Ti-6Al-4V, 2022, Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 236 (3) 1-6.

- Aboujafari M, Valipour MS, **Hajialimohammadi A** , Honnery D, Porous medium applications in internal combustion engines: a review, 2022, Transport in Porous Media, 141 (3), pp 799-824.
- Jadidi T, **Hajialimohammadi A**, Azadi M, Abdullah A, Ultrasonic Assisted Drilling of Carbon Fiber Reinforced Plastic Composites with Non-Rotating Vibratory Tool, 2022, Mechanics of Advanced Composite Structures, 9(1), pp 147-154.
- Almansoori A, **Hajialimohammadi A**, Mirsalim S, Mehrabivaghar M, Multi-objective optimization and sensitivity analysis of the parameters affecting sealing performance of the piston rings face through the validated model for the four-stroke bi-fuel engine, 2022, Journal of Applied Fluid Mechanics, 15 (5), pp 1345-1360.
- Kamyab M, Mohebbi MS, **Hajialimohamad A**, Investigating of Process Design Parameters in 4043 alloy Additive Manufactured specimens, to create external features of cylinder head, The Journal of Engine Research, 2020, 60 (60), 3-17.
- Sheykhvazayefi M, Gorji M, **Hajialimohammadi A**, Mirsalim SM, Experimental study of the coking phenomenon effects on spray characteristics of the high pressure diesel injector, Journal of applied fluid mechanics, 2020, 13(4), pp 1117-1129
- Oskueyan S, Abedini V, **Hajialimohammadi A**, Statistical Modeling of the Effective Parameters in Electrical Discharge Machining Process of Ti-6Al-4V Alloy Using the Mixtures of Aluminum Oxide and Silicon Oxide in Dielectric, 2020, Modares Mechanical Engineering 20 (6), 1449-1462.
- Azadi M, Azadi M, **Hajialimohammadi A**, Effects of Ageing and Forging on Short-term Creep Behaviors of Inconel-713C Superalloy at 850 C, 2020, International Journal of Engineering 33 (4), 639-646.
- Hematian R, Hassan-beygi SR, **Hajialimohammadi A**, Numerical and experimental investigation of common rail fuel injection system and evaluating influence of fuel pressure on injection characteristics and pressure fluctuations, 2020, The Journal of Engine Research 59 (59), 63-72.
- Hematian R, Massah J, Hassan-beygi SR, **Hajialimohammadi A**, Numerical evaluation the effect of characteristics of fuel spray on emissions of a diesel engine, 2020, Journal of Researches in Mechanics of Agricultural Machinery 9 (1).

- Sheykhvazayefi M, Gorji M, **Hajialimohammadi A**, Mirsalim SM, Experimental study of the diesel injector nozzle sediment effect on fuel spray behavior, The Journal of Engine Research 2019, 54.
- Mahmoudzadeh Andwari A, Pesyridis A, Esfahanian V, Salavati-Zadeh A, **Hajialimohammadi A**, Modelling and Evaluation of Waste Heat Recovery Systems in the Case of a Heavy-Duty Diesel Engine, Energies 2019; 12 (7), 1397.
- Almansoori AQ, **Hajialimohammadi A**, Mirsalim SM, Alizadehnia A, A novel experimental test rig for simulating of the fuel injection system components behavior under cold conditions, The Journal of Engine Research 2018; 47: 31-38.
- Rahmani S, **Hajialimohammadi A**, fathollahy H, Mirsalim SM, Experimental Investigation of air fuel distribution of the spray of multi hole gasoline direct injector, The Journal of Engine Research 2018; 51: 35-42.
- Nazari Chekoveri M, **Hajialimohammadi A**, Mirsalim SM, Fajri H, Experimental investigation on the effect of injection pressure and injector installation angle on the penetration of the gasoline port fuel injector using high speed imaging method, The Journal of Engine Research 2018; 52: 29-41.
- Hajialimohammadi A, Loghman F, Simulation of the metal injection production method using Mold Flow software, Journal of Iran society of mechanical engineering 2018; 121: 43-49.
- Sohrabiasl I, Gorji-Bandpy M, **Hajialimohammadi A**, Mirsalim MA. Effect of open cell metal porous media on evolution of high pressure diesel fuel spray, Fuel 2017; 206; 133-134.
- Erfan I, **Hajialimohammadi A**, Chitsaz I, Ziabasharhagh M, Martinuzzi RJ. Influence of chamber pressure on CNG jet characteristics of a multi-hole high pressure injector, Fuel 2017; 197: 186-193.
- Nassiri Toosi A, **HajiAliMohammadi A**, Heidary A, Numerical Study of a Wall-Impinging Gaseous Jet on a Flat Plate, Amirkabir Journal of Mechanical Engineering, 2017; 49(1): 13-16.
- Asadi Taheri M, **Hajialimohammadi A**, Alizadeh Nia S, EF7 engine flywheel bolted joint design improvement by theoretical and experimental investigations, The Journal of Engine Research, 2017; 48: 27-39.
- **Hajialimohammadi A**, D.A. Mitchel, Honnery D, Abdullah A, Agha Mirsalim M. Ultra High speed investigation of gaseous jet injected by a single-hole injector and proposing of an analytical method for pressure loss prediction during transient injection, Fuel 2016; 184 : 100–109

- Mohebbi M, Aziz A A, Hamidi A, **Hajjalimohammadi A**, Hosseini V, Modeling of pressure line behavior of a common rail diesel engine due to injection and fuel variation, Journal of the Brazilian Society of Mechanical Sciences and engineering, 2016: 1-9
- **Hajjalimohammadi A**, Fallahi D, Mirsalim M, Numerical investigation of using micro-hole nozzle on characteristics of diesel fuel spray of high speed diesel engine, Fuel and Combustion journal, 2016; 8(2), in Persian.
- Erfan I, Chitsaz I, Ziabasharhagh M, **Hajjalimohammadi A**, Fleck B, Injection characteristics of gaseous jet injected by a single-hole nozzle direct injector, Fuel 2015; 160: 24-34.
- Mirafzal M. M, **Hajjalimohammadi A**, Mousavi Mashhadi S.M, Mohammadi A, Design and manufacturing process simulation of sheet metal exhaust manifold for turbocharged bi fuel engine, The Journal of Engine Research, Vol. 34 (winter 2015)
- **Hajjalimohammadi A**, Honnery D, Abdullah A, Mirsalim M. Sensitivity analysis on the parameters affecting image processed results of high pressure gaseous jet images, The Journal of Engine Research, Vol. 33 (winter 2014), pp. 43-52.
- **Hajjalimohammadi A**, Abdullah A, Agha Mirsalim M, Chitsaz I. Experimental and Numerical Investigation on the macroscopic characteristics of the jet discharging from gaseous direct injector. Journal of Mechanical Science and Technology 2014; 28(2): 773-81.
- **Hajjalimohammadi A**, Honnery D, Abdullah A , Agha Mirsalim M. Time resolved characteristics of gaseous jet injected by a group-hole nozzle. Fuel 2013;113: 497–505
- Chitsaz I , Saidi MH, Mozafari AA, **Hajjalimohammadi A**. Experimental and numerical investigation on the jet characteristics of spark ignition direct injection gaseous injector. Applied Energy 2013 ;105: 8–16
- Erfan I, Ziabasharhagh M, **Hajjalimohammadi A**, Chitsaz I. A new technique for determination of geometry characteristics, mass flow rate and discharge coefficient of a direct gas injection nozzle. The Journal of Engine Research. 2013; 29 (29) :57-66 (in Persian)
- **Hajjalimohammadi A**, AhmadiSoleymani S, Abdullah A, Asgari O, Rezai F. Design and Manufacturing of a Constant Volume Test Combustion Chamber for Jet and

Flame Visualization of CNG Direct Injection. Applied Mechanics and Materials 2012; 217 – 219: 2539-2545

- **Hajjalimohammadi A**, Honnery D, Abdullah A, Mirsalim M. Experimental investigation of the effect of pressure and density ratios on the gaseous spray of the group-hole nozzle. The Journal of Engine Research. 2012; 28 (28) :11-19 (in Persian)
- **Hajjalimohammadi A**, Abdullah A, Mirsalim SM, Chitsaz I, Khalili M, Soltani M. Experimental investigation of the transient jet emanating from the prototype direct gaseous injector, Journal of Modeling in Engineering 2011, 9(25): 21-31 (in Persian).
- Abdullah A, Fartashvand V , **Hajjalimohammadi A**, Abedini R. Ultrasonic Cleaning Parameters, IJAEA, Volume 1, Issue 4, pp.41-46 (2008)

Selected Conference Proceedings

1. Ranjbar A, **Hajjalimohammadi A**, Moosavian A, Barin Z, Rahmani MR, Defect Detection in Piston Rings Using Deep Learning-Based Computer Vision, 21th National and 10th International Conference of Manufacturing Engineering, February 25-27, 2025, Supplying Automotive Parts Company (SAPCO), Tehran, Iran (in Persian).
2. Mirtorabi H, **Hajjalimohammadi A**, Hosseini SM, Experimental investigation and optimization of parameters in a selective laser sintering 3D printer for fabricating sand-casting cores, 21th National and 10th International Conference of Manufacturing Engineering, February 25-27, 2025, Supplying Automotive Parts Company (SAPCO), Tehran, Iran (in Persian).
3. Jafari Varjoshani S, **Hajjalimohammadi A**, Mechanical Alloying and Spark Plasma Sintering of CoCrFeNiMn High Entropy Alloy, 21th National and 10th International Conference of Manufacturing Engineering, February 25-27, 2025, Supplying Automotive Parts Company (SAPCO), Tehran, Iran (in Persian).
4. Aboujafari M, Valipour MS, **Hajjalimohammadi A**, Numerical study of the effects of ammonia injection timing on the emissions of an ammonia-hydrogen dual fuel engine, 13th International Conference on Internal Combustion Engines & Oil February 13-15, 2024, Supplying Automotive Parts Company (SAPCO), Tehran, Iran.
5. Oskueyan S, **Hajjalimohammadi A**, Abedini V, Montaseri F, Tiyaqi R, Investigation of the wear behavior of VCN150 material coated by the electro discharge coating approach with copper chromium electrode, 19th National and 8th

International Conference of Manufacturing Engineering, March 9-10, 2023, Ferdowsi University of Mashhad, Mashhad, Iran (in Persian).

6. Khadivar A, Mahmoudi M, **Hajjalimohammadi A**, investigation of the mechanical properties and microstructure of Titanium Iron samples produced by wire and arc additive manufacturing method based on arc welding with shield gas, 19th National and 8th International Conference of Manufacturing Engineering, March 9-10, 2023, Ferdowsi University of Mashhad, Mashhad, Iran (in Persian).
7. Ameri E, **Hajjalimohammadi A**, Manufacturing of $Al_{0.1}CrCoNiFe$ high entropy alloy and investigation of hardness and microstructure, 12th international conference on materials and metallurgical engineering. 28-29 Nov. 2023, K. N. Toosi University of Technology, Tehran, Iran (in Persian).
8. Rahmati M, Ostad Shabani M, **Hajjalimohammadi A**, Ebrahimi MH, Investigate the Mechanical Properties of 319 Aluminum Alloy Casting with Lost Foam Method, 11th International Conference on Internal Combustion Engines & Oil Feb. 22-23, 2022, Supplying Automotive Parts Company (SAPCO), Tehran, Iran (in Persian).
9. Sabouri S, **Hajjalimohammadi A**, Rayat Roknabadi A, Mozafari A, Designing and manufacturing a semi-industrial multi-spindle micron drilling machine of oil rings, 12th International Conference on Internal Combustion Engines & Oil Feb. 22-23, 2022, Supplying Automotive Parts Company (SAPCO), Tehran, Iran (in Persian).
10. Bagheri A, Abedini V, **Hajjalimohammadi A**, Experimental investigation of effective parameters of cryogenic and MQL machining of Al7075 T6 on the surface roughness, 17th National and 6th International Conference of Manufacturing Engineering, March 2-4, 2021, Tehran, Iran (in Persian).
11. Rasolzadeh J, **Hajjalimohammadi A**, Abadini V, Experimental study on the effect of ultrasonic waves on long reaming process of engine valve guide, 11th International Conference on Internal Combustion Engines & Oil Feb. 18-20, 2020, Supplying Automotive Parts Company (SAPCO), Tehran, Iran (in Persian).
12. Sadeghi Niaraki S, **Hajjalimohammadi A**, Riazi HR, Hadilou EA, Failure analysis of the casting defects of piston ring using surface analysis method, 8th international conference on materials and metallurgical engineering. 7-8 Oct. 2019, Tehran, Iran (in Persian).

13. Shahmorad A, **Hajialimohammadi A**, Fathollahy H, Taherinasab A, Salehi Baraghani A, Experimental investigation on the effects of tool wedge angle on the wear and life of piston ring splitting tool, 10th International Conference on Internal Combustion Engines & Oil Feb. 13-15, 2018, Research Institute of Petroleum Industry, Tehran, Iran (in Persian).
14. **Hajialimohammadi A**, Rizi H, Marbut A, Azadi M, Azadi M, Development of the experimental procedure for validation of simulation of closed die forging of Inconel 713 super alloy, 4th conference on application of modern technologies in Science and Engineering, Feb. 23, 2017, University of Torbat Heydarieh, Torbat Heydarieh, Iran (in Persian).
15. **Hajialimohammadi A**, Abdullah A, Experimental investigation of the effectiveness of ultrasonic cleaning system with solid matching part, 13th National Conference of Manufacturing Engineering, Nov. 8-10, 2016, University of Hormozgan, Bandar Abbas, Iran (in Persian).
16. Mohebbi M, Reyhanian M, Hosseini V, **Hajialimohammadi A**, Experimental investigation of effect of SOI and Lambda on RCCI engine combustion, 9th International Conference on Internal Combustion Engines and Oil, 16-18 February 2016, Tehran, Iran
17. Fallahi D, **Hajialimohammadi A**, Mirsalim M, Experimental investigation of passenger car diesel (EFD) engine spray, 9th International Conference on Internal Combustion Engines and Oil, 16-18 February 2016, Tehran, Iran (in Persian).
18. **Hajialimohammadi A**, Honnery D, Abdullah A, Mirsalim M. Sensitivity analysis on the parameters affecting image processed results of high pressure gaseous jet images, 8th International Conference on Internal Combustion Engines and Oil, 17-19 February 2014, Tehran, Iran (in Persian)
19. Erfan I, Ziabasharhagh M, Chitsaz I, Jazayeri SA, **Hajialimohammadi A**. An Experimental Investigation of Gaseous Fuel Direct Injection in a Constant Volume Chamber, 8th International Conference on Internal Combustion Engines and Oil, 17-19 February 2014, Tehran, Iran
20. **Hajialimohammadi A**, Chitsaz I, Mirsalim M, Khalili M. Schlieren imaging of the jet of gaseous direct injector, 1th National Conference on Internal Combustion Engines, 15-16 November 2012, Semnan, Iran (in Persian)

21. **Hajialimohammadi A**, Soltani M. Design, manufacturing and testing of a prototype gaseous fueled injector, 1th National Conference on Internal Combustion Engines, 15-16 November 2012, Semnan, Iran (in Persian)
22. Mirsalim M, **Hajialimohammadi A**. Numerical and Experimental Investigation of Influence of Various Parameters on Formation of Direct Injection Gaseous Fuel Jet in a Constant Volume Chamber . 7th International Conference on Internal Combustion Engines, 19-21 November 2011, Tehran, Iran
23. Mirsalim SM, **Hajialimohammadi A**, Ehteram M, Fakhari V. Exergy Analysis of a compressed natural gas turbocharged spark ignited engine. ASME 2010, 10th Biennial Conference on Engineering Systems Design and Analysis, 12-14 July 2010, Istanbul, Turkey
24. Abdullah A, Foroughi S, Pak A, **Hajialimohammadi A**. Finite element optimization of transducers arrangements in ultrasonic cleaning, 11th international conference of Iranian manufacturing engineering, 19-21 October 2009, Tabriz, Iran (in Persian)
25. Abdullah A, **Hajialimohammadi A**, , Pak A, Foroughi S. Design and manufacturing of Solid-Matching Piezoelectric Ultrasonic Transducer, 11th international conference of Iranian manufacturing engineering, 19-21 October 2009, Tabriz, Iran (in Persian)
26. Abdullah A, **Hajialimohammadi A**, Pak A. design and manufacturing of ultrasonic cleaning unit for cleaning of engine parts, The 6th International Conference on Internal Combustion Engines, 17-19 November 2009, Tehran, Iran (in Persian)

Books:

1. **Hajialimohammadi A**, Tyagi R, Effect of Surface Texturing on Tribological Behavior of Additively Manufactured Parts, 2024, **Book Chapter**, Tribological Aspects of Additive Manufacturing, 149-155, CRC Press.
2. **Hajialimohammadi A**, Fatemi Mehr I, Rahmati M, Analysis of machining and machine tools (translation to persian), 2019, Semnan University Press,

Supervised Academic Projects

■ Graduated Msc and PhD Students

1. Mirtorabi H, Design, manufacturing and characterization of Selective Laser Sintering 3D printer for production of resin coated casting cores, M.Sc Thesis, 2024, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
2. Karbasforoosh S, Experimental study of the ultrasonic additive manufacturing using the aluminum and CFRP composite, M.Sc Thesis, 2024, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
3. Shahriyar M, Experimental study of the effect of ultrasonic shot peening on the strength and mechanical properties of Al-Si alloy employed in compressor vane of internal combustion engine turbocharger, M.Sc Thesis, 2024, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
4. Bidkhori A, Effect of ultrasonic on the mechanical and microstructural properties of a sample processed by friction stir spot welding (FSSW), M.Sc Thesis, 2024, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
5. Aboujafari M, Experimental Study of the Gasoline Biodiesel Blend Fuel Combustion in a CVCC Partially Filled with the Porous Medium, PhD Thesis, 2024, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
6. Musavi Rad SM, Manufacturing and characterization of Copper and Chromium Composite material Using an Electrochemical 3D Printer, M.Sc Thesis, 2023, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
7. KianiMajd M, Experimental study of the effect of ultrasonic waves on the parameters of the electrochemical deburring process, M.Sc Thesis, 2023, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
8. Khadivar A, Investigating the effect of the ultrasonic process on the mechanical properties and microstructural of steel samples produced from Wire and Arc Additive Manufacturing using Gas Metal Arc Welding, M.Sc Thesis, 2023, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
9. Almansuri A, Optimization of the engine oil consumption through sensitivity analysis by investigating the most effective parameters: experimental and numerical study , PhD Thesis, 2023, Mechanical Engineering Department, Amirkabir University of Technology, Iran (as an advisor).

10. Rayat Roknabadi, Study of effective parameters on ultrasonic welding of aluminum sheet to CFRP composite, M.Sc Thesis, 2022, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
11. Hosseini H, Numerical and Experimental investigation on the performance of EF7 engine with blended fuel, M.Sc Thesis, 2021, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
12. Bagheri A, Experimental Investigation of the Effective Parameters in Machining Process by Using Minimum Quantity Lubrication (MQL) and Cold Fluid, M.Sc Thesis, 2021, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
13. Khademitab M, Experimental investigation of the effective parameters in drilling process of FRP/AL stacks using minimum quantity lubrication (MQL), M.Sc Thesis, 2020, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
14. Shahmorad A, Experimental investigation of process parameters on saw blade tool wear in splitting process, M.Sc Thesis, 2019, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
15. Rasoulzadeh J, Experimental study of the long reaming operation process using ultrasonic waves,), M.Sc Thesis, 2019, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
16. Oskueyan S, Experimental study of the use of the aluminum oxide and the silicon oxide nanoparticles in the electrical discharge machining of Ti6Al4V alloy, M.Sc Thesis, 2019, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
17. Karimpour H, Experimental investigation on the effect of using SiO₂ nano powder on the machinability of St304L in the semi dry lubrication condition, M.Sc Thesis, 2018, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
18. Saligheh AA, Experimental investigation of the effect of machining parameters on tool wear of bimetallic parts using image processing method, M.Sc Thesis, 2018, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.
19. Jadidi T, Experimental investigation of ultrasonic assisted drilling for reinforced plastics, M.Sc Thesis, 2017, Faculty of Mechanical Engineering, Semnan University, Semnan, Iran.

20. Sohrabi I, Experimental investigation of diesel Spray at porous media condition, PhD Thesis, 2016, Mechanical Engineering Department, Babol University, Mazandaran, Iran (as an industry advisor)
21. Heydari A, Theoretical and numerical study of wall-impinging jets, M.Sc Thesis, 2016, School of Automotive Engineering, Iran University of Science and Technology, Tehran, Iran, (as an Academic and industry advisor)
22. Abiarkashani M, Design and optimization of high pressure injection tubes of high speed diesel engine, M.Sc Thesis, 2015, Mechanical Engineering Department, Tehran University, Tehran, Iran (as an industry advisor)
23. Fallahi D, numerical and Experimental investigation on the diesel fuel spray of high speed diesel engine, M.Sc Thesis, 2014, Mechanical Engineering Department, Tehran University, Tehran, Iran (as an industry advisor)
24. Mirafzal MM, Design of sheet type exhaust manifold for turbocharged CNG fueled engine, M.Sc Thesis, 2013, Mechanical Engineering Department, Tehran University, Tehran, Iran (as an industry advisor)
25. Zarei MH, Design of a test bench for high speed imaging of engine valve spring, B.Sc Thesis, 2013, Mechanical Engineering Department, Amirkabir University of Technology, Tehran, Iran (as an Academic supervisor)
26. Ahmadisoleymani S, Design and Manufacturing of a Constant Volume Test Combustion Chamber for Jet and Flame Visualization of CNG Direct Injection, B.Sc Thesis, 2012, Mechanical Engineering Department, Amirkabir University of Technology, Tehran, Iran (as an industry advisor)
27. Soltani M, Design, manufacturing and testing of a prototype gaseous fueled injector, B.Sc Thesis, 2011, Mechanical Engineering Department, Amirkabir University of Technology, Tehran, Iran (as an industry advisor)
28. Rahmani S, Spray characteristics of gasoline multi hole injector, M.Sc Thesis, Mechanical Engineering Department, Amirkabir University of Technology, Iran (as an industry advisor)
29. Almansuri A, Spray characteristics of diesel engine under cold engine working condition , M.Sc Thesis, Mechanical Engineering Department, Amirkabir University of Technology, Iran (as an industry advisor)
30. Fatollahi H, Modeling and design of fuel injection system for 3 cylinder GDI engine, B.Sc Thesis, Mechanical Engineering Department, Amirkabir University of Technology, Iran (as an industry advisor)

Training and Special Courses

1. Principles of export and import, international trade center (ITC), 2024.
2. Manager Training Program, GIZ Germany, Leipzig, April 2022-April 2023 (Virtual and physical)
3. Advanced FMEA, Iran Society of engines (Bosch Company training), 2017.
4. Project management based on PMBOK standard, IPCO, 2015.
5. Introduction to Problem Solving, IPCO, 2015.
6. New product development Process, IPCO, 2015.
7. Introduction to Aerosols, theory and measurements methods, 2st national conference on Air Quality Control, Tehran, Iran, 2014.
8. New technologies of injection molding for production of automotive parts, ENGEL Austria GmbH, Tehran, Iran (10 hours Technology Seminar), 2014.
9. Faculty of Engineering Demonstrator Teaching Development Program, Monash University, Melbourne, Australia, 2012
10. Experimental safety induction, Monash University, Melbourne, Australia, 2012
11. Hybrid Vehicles, 7th International Conference on Internal Combustion Engines, Tehran, Iran, 2011
12. Principles of science and technology of Nano materials, Azad University, Saveh Branch, Saveh, Iran, 2010
13. Principles of CMM machine operating and software training (CAPPS 6), Trimek Metrologia Industrial, Metrology Lab., industrial engineering department, Amirkabir University of technology, Tehran, Iran (64 hours), 2005

Software (Skills in Analytical and Application Programs)

1. PTC Creo3
2. PDM link
3. AMESim (For modeling of fuel injection system)
4. MATLAB (Image Processing Module)
5. AVL Fire (Spray and engine simulation)
6. Fluent
7. SolidWorks
8. Visual Fortran
9. SPSS

Executive and scientific experiences:

1. Conference manager of Scientific section, 21th National and 10th International Conference of Manufacturing Engineering, 2025, Tehran, Iran.
2. Conference Scientific chair, 13th conference on internal combustion engines and oil ICICE13, 2024, Tehran, Iran.
3. Conference chair, 12th conference on internal combustion engines and oil ICICE12, 2022, Tehran, Iran.
4. Conference chair, 11th conference on internal combustion engines and oil ICICE11, 2020, Tehran, Iran.
5. Exhibition manager, 26th Annual International Conference of Iranian Society of Mechanical Engineers-ISME2018, 2018, School of Mechanical Engineering, Semnan University, Semnan, Iran.
6. Technical Forums head, 9th conference on internal combustion engines and oil ICICE9, 2016, Tehran, Iran.
7. Head of technical Festival, 8th conference on internal combustion engines and oil ICICE8, 2014, Tehran, Iran.

Research and development Projects:

- Development of Aluminum cylinder block for engine cast-in liner, government funding- Iranian national elite foundation- research project, 2023.
- Process design and manufacturing of bridge piece for diesel engine, Iran Heavy Diesel Engine Mfg Co. (DESA), 2023.
- CAE simulation and optimization of piston ring design parameters for EF7 engine, RKP, 2023.
- Design and manufacturing of multi spindle machine for piston ring drilling, RKP, 2021.

- Design and manufacturing of ultrasonic cleaning system for piston ring surface preparation before chrome plating, RKP, 2021.
- Design and development of piston ring for EF7 plus engine, RKP, 2019.
- Modifying of fuel injection system of 3 cylinder engine for engine friction testing, IPCO, 2016.
- Designing of fuel injection system for converting of mechanical fuel injection system of single cylinder diesel engine to common rail system, Sharif university of technology, 2014-2015.
- Design and assembling of fuel injection system for imaging of diesel fuel spray, Ipco, 2013-2014 .
- Design of validation process for multi-hole diesel injector nozzles and spray imaging, Dinamotors Company, 2013.
- Design and establishment of Schlieren imaging system for visualization of gaseous jet, IPCO, 2010-2012 .
- Design and Manufacturing the optical access constant volume combustion chamber for injection and combustion visualization of direct injection of natural gas, IPCO, 2011 -2013.
- Velocity measurement of water in open raceway of microalgae for production of biodiesel with PIV (particle image velocimetry), Iranian Research Organization for Science and Technology (IROST), June-Aug 2011