



Javad khadem

Personal Identity

- **Academic Position:** Associate Professor
- **Department:** Mechanical Engineering
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- **Main Research Interests:**

- Internal Combustion Engine
- Combustion & Detonation.
- Deflagration to Detonation Transition (DDT)
- CFD

Education

- **B.Sc:** Mechanics - Design of solid, Ferdowsi Mashhad University, 1988-1992.
Title of Thesis : " Robot design of Remove and Mark"
- **M.sc:** Mechanics – Transformation of Energia, Ferdowsi Mashhad University, 1993-1996.
Title of Thesis : "The simulation of spark ignition engines by filling and emptying method"

- **PhD:** Fluid Mechanics – Combustion , MSU , Russia , 2001-2005.
Title of Thesis : " Ignition, combustion and detonation in polydispersed fuel-air mixtures"

Academic Positions

- **Academic Member (Lecturer)**, Lecturer, Mechanical Engineering, University of Birjand, from 1996 to 2000.
- **Assistant Professor**, Assistant Professor, Mechanical Engineering, University of Birjand, from 2005 to 2015.
- **Associate Professor**, Associate Professor, Mechanical Engineering, University of Birjand, from 2016 to Day.

Executive Positions

- Chairman of the Department of Mechanical, from 1997 to 1999
- Chairman of the Department of Mechanical, from 2005 to 2008
- Chairman of the Department of Mechanical, from 2012 to Day.

Papers

- **Journal Papers:**

1. M.SaadatTargh, **J. Khadem** and M .Farzaneh-Gord, " Thermodynamic analysis of a CNG refueling station considering the reciprocating compressor", *Journal of Natural Gas Science and Engineering* , 2016, Vol 29, pp. 176-184.
2. N.N.Smirnov,V.F. Nikitin,V.R. Dushin,Yu.G. Filippov, V.A. Nerchenko, **J. Khadem**, " Combustion Onset in Non-uniform Dispersed Mixtures ", *Acta Astronautica*, 2015, Vol 115, pp. 94-101.
3. **J. Khadem** , M.SaadatTargh, M .Farzaneh-Gord, " Mathematical modeling of fast filling process at CNG refueling stations considering connecting pipes ", *Journal of Natural Gas Science and Engineering* , 2015, Vol 26, pp. 176-184.
4. **J. Khadem**, A. Aboutalebi, S.S. Nourazar," Investigation of internal flow of binary gas in a rotating cylinder using direct simulation Monte-Carlo (DSMC)", *Journal of Solid and Fluid Mechanics*, 2015, Vol. 5, 2, pp. 261-270.
5. A. Asadi and **J. khadem**, "Numerical Study on Counterflow Diffusion Flames of Natural Gas with CO₂ Dilution", *Journal of*

Applied and Computational Sciences in Mechanics, 2013, Vol. 24, Number 2, pp.57-66.

6. **J. Khadem**, A. asadi, "Numerical Study on Counterflow Diffusion Flames of Natural Gas with CO₂ Dilution", *Fuel and Combustion Journal*, 2011, Vo. 4, Number 2, pp.17-28.
7. S.S. Nourazar, P. Jahangiri, A. Aboutalebi, A.A. Ganjaei, M. Nourazar, **J. Khadem**, "On a modified Monte-Carlo method and variable soft sphere model for rarefied binary gas mixture flow simulation", *International Journal of Computational Fluid Dynamics*, 25:5, 2011, 271-285.
8. N.N. Smirnov, V.F. Nikitin, **J. Khadem**, Sh. Alyari Shourekhdeli, "Onset of detonation in polydispersed fuel-air mixtures ", *Proceeding of the Combustion Institute*, 2007, Vol 31, No. 2, pp. 2195-2204.
9. N.N. Smirnov, V.F. Nikitin, **J. Khadem**, Sh. Alyari Shourekhdeli, "Transient combustion phenomena in polydispersed fuel-air mixtures", *Pulsed and Continuous Detonations*, Torus Press Ltd. 2006.
10. **Хадем Дж.**, Никитин В.Ф., "Моделирование тепломассобмена при взаимодействии капли жидкости с потоком газа", *Вестник Моск. Универ-та., серия 1, математика, Механика*, 2005, № 3, с. 33-43. (Moscow University Mechanics Bulletin, No.3, 2005, p. 33-43.1.
11. S.M. Modares-razavi, **J. Khadem**, M. Farzane "Comparision of predicted performance and Nox formation in Peykan 1600 cc engine with the available experimental results", *Journal of faculty of engineering, Tabriz university*, No. 19, 1998, p.45-57.

International Conference Papers:

1. **J. Khadem**, "Mathematical models of spark-ignition engines", First international conference in aerospace eng. (AERO 2000), "The simulation of spark-ignition engines by filling and emptying method", Sharif University, Jan. 2000.
2. Никитин В.Ф. , **Хадем Дж.**, "Модели взаимодействия капли жидкости с потоком газа", *Ломоносовские чтения*, Апрель 2003, с.107.

3. **J. Khadem**, "Modeling of interaction between liquid droplet and gas flow", 11th Iranian Researchers Seminars in Europe (IRSE), 2003, Glasgow, UK.
4. **J. Khadem**, "Interaction of the shock wave with the aerosol", 12th Iranian Researchers Conference in Europe (IRCE), 2004, Manchester, UK.
5. **Хадем Дж.**, Никитин В.Ф. , "Взаимодействие ударной волны с аэрозолем", Ломоносовские чтения, Апрель 2004, с. 165.
6. Н.Н. Смирнов, В.Ф. Никитин, **Дж. Хадем**, В.М. Шевцова, Ж.К. Легро, "Инициирование Детонации В Распыленных Топливо-Воздушных Смесях", XIII Симпозиум по горению взрыву, Черноголовка, Фев. 2005, с. 109.
7. N.N. Smirnov, V.F. Nikitin, **J. Khadem**, V.M. Shevtsova, J.C. Legros, "Detonation initiation in dispersed fuel-air mixtures", 20th International Colloquium on the Dynamics of Explosions and Reactive Systems (ICDERS), July 31- August 5, McGill University, Montreal, Canada, 2005.
8. N.N. Smirnov, V.F. Nikitin, **J. Khadem**, Sh. Alyari Shourekhdeli, "Deflagration to detonation transition in meta-stable media", Minsk International Colloquium on Physics of Shock Wave, Combustion, Detonation and Non-Equilibrium Processes, MIC 2005, Minsk, 12-17 Nov., 2005.
9. N.N. Smirnov, V.F. Nikitin, **J. Khadem**, Sh. Alyari Shourekhdeli, "Transient combustion phenomena in polydispersed fuel-air mixtures ", fifth international colloquium on pulsed and continuous detonations, Moscow, Russia, July 3-7, 2006.
10. N.N. Smirnov, V.F. Nikitin, **J. Khadem**, Sh. Alyari Shourekhdeli, " Onset of detonation in polydispersed fuel-air mixtures ", 31st International Symposium on Combustion, University of Heidelberg, Germany, August 6-11, 2006.

Iranian Conference Papers:

1. S.M. Modares-razavi, **J. Khadem**, "The simulation of spark-ignition engines by filling and emptying method", at the annual ISME conference, Tabriz University, may 3-5, 1997.
2. S.M. Modares-razavi, **J. Khadem**, M. Farzane "Comparision of predicted performance and Nox formation in Peykan 1600 cc engine

with the available experimental results", Journal of faculty of engineering, Tabriz University, No. 19, 1998.

3. **J. Khadem**, "Prediction of mole fraction of combustion products in spark-ignition engines", at the annual ISME conference, Gilan University, may 27-29, 2001.
4. **J. Khadem**, "Modeling of interaction between fuel droplet and hot air in combustion chamber", the first Combustion Conference of Iran, Tarbiyat modarres University, 14-15 Feb. 2005.
5. **J. Khadem**, "Detonation Initiation in Polydispersed fuel-air mixture by a shock wave", 14th Annual (International) Conference of Mechanical Engineering (ISME), Isfahan University of Technology, may 16-18 May 2006.

Books

1. Pulsed and continuous detonations, Torus Press, 2007.
2. Deflagrative and Detonative Combustion, Torus Press, 2010.

Graduate Thesis Supervision

- **B.Sc:** Over 150 Students.
- **M.Sc:** Over 15 Students.
- **PhD :** 5 Students.

Courses Taught

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| <ul style="list-style-type: none"> • Thermodynamic 1, 2 • Internal Combust. Eng. • Fuel & Combustion • Material of Science | <ul style="list-style-type: none"> • Heat Transfer • Advanced. Eng. Mathematics | <ul style="list-style-type: none"> • Turbine & Compressor • Eng. Mathematics |
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Other Experiences (Academic& Industrial)

- Member of Iranian Combustion Institute (ICI)
- Member of Iranian Society of Mechanical Engineers (ISME)
- Member of Iranian Organization for Engineering order of building.