

# Mojtaba Pakbaz

## Research Interest

- Designing, manufacturing, and experimenting piston combustion engines of Jets and Ram jet
- High tech power transmission systems designing in Vehicle industry, Oil industry, and Mining industry
- Designing and performing Industrial Automation
- Designing and manufacturing various industrial gearboxes

## Education

- 2013–2016 **Master of Science in Automotive Propulsion (Mechanical engineering)**, [Shahid Rajaei Teacher Training University, Tehran, Iran](#).  
Advisor: Dr. gh paygane, Dr. M-tehrani  
Thesis: Design and construction of a continuously variable transmission (Invention)
- 2011–2013 **Bachelor's degree in Automotive Technology Engineering (Mechanical engineering)**, [Shahid Rajaei Teacher Training University, Tehran, Iran](#).  
Advisor: Dr. Sha'ban Ali-Yari  
Thesis: Designing and Manufacturing 'CIP' Diesel High Tension Injector Pump with a low level of Power Consumption (Invention)
- 2009–2011 **Associate's degree in Auto Mechanic (Mechanical engineering)**, *Saamen-ol-Hojaj vocational university, Mashhad, Iran*

## Professional History

- 2022-Persent **Chief scientific officer**, *Automobile manufacturing company of ABRI*
- 2015-2022 **CEO**, *A.S.A.K Knowledge Enterprise*
- 2014 **Co-Founder and Board Member**, *A.S.A.K Knowledge Enterprise*
- 2013 **Senior researcher on inventory project of CVT**, *Shahid Rajaei University*
- 2013 **Automotive Technology Researcher**, *Shahid Rajaei University*
- 2012 **Corporator of research team**, *National Olympiad of proficiency*
- 2012 **Head of Electrical motorcycle group**, *Shahid Rajaei University*
- 2012 **Supervisor of Tehran top team**, *13th Proficiency National Olympiad*
- 2008 **Manager of the Mechanic Center**, *Iranian Inventors Association*

## Performed Inventive Projects

2010-2015 High-Tension fueling system of diesel motors with **lower level of power consumption** in comparison to updated pumps, *Shahid Rajaei University, and Industrial and Scientific Researches Institution*

Advisor:

2013-2015

- simulate the dynamic behaviors of CIP
- analyzing the combustion of Diesel engine with CIP and comparing the result with injector pump of BUSH CO.
- Proposing mathematical proof for CIP
- Manufacturing the steel cylinder
- Industrial testing of our novel method with Hatz diesel engine and EddyCurrent dynamometer

Advisor: *Dr.Savad-Kouhi, Mostafa Mir-Salim*

2010-2012

- Designing and manufacturing first aluminum prototype
- Measuring and analyzing fuel pressure and consumption
- Measuring Fuel injection flow rate

- Designing and manufacturing **5KW CVT magnetic** gearbox, *Shahid Rajaei University (SRTTU)*  
Advisor: *Dr. Sabouri*
- **Energy absorbing system** for the impact of spaceship landing and emergency airplane landing, icebreakers, and bumper of different automobiles  
Partnership: *Dr. Molaii, and Dr.Navid Anvari-Pour*
- Medical slipsole with fluid layer
- Automatic mower machine

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## Awards

2016 **Special Award**, *Award of DRZARIN CHANG for the project of CVT*

2016 **First Ranked (CVT)**, *the 9th international conference on internal combustion engines & Oil*

2016 **Special Award**, *Award of DRZARIN CHANG for the project of CIP*

2016 **First Ranked (CIP)**, *the 9th international conference on internal combustion engines & Oil*

- 2014 **Bronze Medal**, *International Invention competition in Germany*
- 2012 **first-grade team of Tehran**, *thirteenth National Olympiad of proficiency*
- 2012 **1th place of invention**, *Fourteenth National festival of "Javan-e-Kharazmi"*
- 2011 **Rank 1<sup>st</sup>** , *Scientific Competition among Associate's student*
- 2012 **Top Researcher Award**, *Shahid Rajaei university of Tehran*
- 2009 **Best project** , *Khorasan province in Kharazmi festival*
- 2009 **Silver Medal** , *Poland International Invention competition*
- 2008 **Gold Medal** , *China International Invention competition*
- 2007 **Bronze Medal** , *Malaysia International Invention competition*
- 2007 **First place** , *Entrepreneurial Competitions among Manufacturing Cooperative Companies*
- 2005 **3th place of invention** , *the seventh festival of "Javan-e-Kharazmi", National Phase*
- 2005 **Top student**, *Kharazmi conservatory , Qouchan*

## Patent

***The US-Patent and WIPO(PCT) of Novel Power Split gearbox with a distinct idea***

***Diesel High-Tension Injector pump with low level of power consumption (CIP)***

***Diesel Rotary Internal-Combustion Motor with high level of power and efficiency***

***The patent of four-stroke motor with four-cylinders into two-cylinders***

***The patent of automatic mower machine***

***The patent of full-hydraulic, anti-reversal and gradient-traversal tractor***

***The patent of anti-friction magnetic ABS system***

***The patent of hydraulic power transmission system***

***The patent of magnetic spring and snubber***

***The patent of security and safety system of the cars and passengers***

*The patent of **energy absorbing system for the impact of spaceship landing** and emergency airplane landing, and icebreakers*

*The patent of **Continual Variable power Transmission (CVT)** system with a distinct and novel idea*

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## Other Working Experience

- 2013 *Reverse Engineering and manufacturing **chassis and power transmission system** of Argo vehicle*
- 2011 ***Manufacturing smart chopper device for pat dishes** with an inventive idea of rotary punch*
- 2007-2011 *Designer and executer in inventive team of **electromagnetic breaking system***
- 2009-present *Designer and executer in inventive team of Diesel High-Tension Injector pump*
- 2011 *Cooperation in **hybrid-bus** team at Tehran University*
- 2010 *Cooperation in **bus Simulator team** at Khajeh-Nasir-Tousi University*
- 2009 *Designing and performing **Injector Electro mechanic Fuel controlling system** without using ECU, on V16 TOYOTA engine, in vocational university of Samen-ol-Hojaj in Mashhad*
- Maintenance and **Repairing of the light and heavy, diesel and gasoline engines***
- Designing **Jig and Fixture***

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## Honor

- 2011-2014 Contracting research projects with Shahid Rajaei University:
- *inventory project of **CVT Gearboxes***
  - *inventory project of **Diesel High-Tension Injector pump** with low level of power consumption*
- 2011 **Getting approval from :**
- *Iran Khodro Powertrain Company (IPCO)*
  - *Sharif University of Technology*
  - *AmirKabir University of Technology*
  - *Enqlab Eslami Technical University of Tehran*
- in line with designing and manufacturing Diesel High-Tension Injector pump*
- 2012 **Getting recommendation** from Mechanics research center, Association of industrial and scientific researches
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## Membership

- *Iran Inventors Community*
- *National foundation of elites*
- *Iran Inventors Club*
- *Young Researchers Club*

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## Technical Skills

### **Expert of CATIA Software, environments as:**

*Generative Shape Design, Part Design, Assembly Design, DMU kinematics, Sketch tracer Analysis, Lathe Machining, Prismatic Machining, Advanced Machining*

**Be Familiar to :** *Automation Studio software, Designing various hydraulic circuits , Solidworks software, Part environment, ABAQUS software, , Solid Analysis, FLUENT software, Geartrax software*

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## Conference Paper

**Injecting High Tension Diesel Pumping using Engine Compression,**  
*First Conference of Iranian Internal Combustion Engines – Semnan university*