

Atefeh Zarei

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EDUCATION

Bachelor of Science, Mechanical Engineering

2016 - 2021

Isfahan University of Technology (IUT), Isfahan, Iran

(Among top five universities in Iran according to *Times* and *QS* world university ranking)

Overall Average: **17.38/20 (GPA: 3.62/4)**

Average (last two years): **18.78/20 (GPA: 4/4)**

B.Sc. THESIS SUBJECT

Vehicle emission simulation implementing GT-Suite software during cold start in New European Driving Cycle (NEDC)

(Under Supervision of Dr. Iman Chitsaz, Associate Professor, i.chitsaz@iut.ac.ir)

AREAS OF INTEREST

- | | |
|-------------------------------|------------------------------|
| • Environmental issues | • Engine emissions |
| • Renewable & clean energies | • Carbon Capture And Storage |
| • Three-way catalyst modeling | • Machine learning |

PUBLICATIONS

Journal

- Teymoori. M.M., Chitsaz. I., **Zarei. A.**, Ajami Kashani. N., Davazdah Emami. M., “Experimental and numerical simulation for the cold-start emission reduction of the gasoline-powered vehicle” **Transportation Research Part D: Transport and Environment**, Oct 2022.
<https://doi.org/10.1016/j.trd.2022.103444>
- Teymoori. M.M., Chitsaz. I., **Zarei. A.**, “Three-way catalyst modeling of the bi-fuel (CNG/gasoline) powered vehicle under NEDC driving cycle” **Journal of Fuel**, (under review).

Conference

- **Zarei. A.**, Teymoori. M.M., Chitsaz. I., Ajami Kashani. N., “Vehicle emission simulation implementing GT-suite software.” **The 9th Fuel and Combustion International Conference of Iran**, University of Shiraz, Department of Mechanical Engineering, Iran, Feb2022.
<https://civilica.com/doc/1452499/>

AWARDS AND HONORS

- Member of Iranian National Foundation of Scientific Elites (2020-2021)
- Ranked 1st last-two-year GPA in the bachelor degree among more than 140 students of graduating class, Isfahan University of Technology, Iran (2018-2020)
- Ranked within 10 % of top students in bachelor degree among more than 140 students of graduating class, Isfahan University of Technology, Iran (2016-2020)
- Ranked within the top 0.7 % among approximately 170,000 participants in the National Entrance Examination from Iranian universities, Iran (2016)

SKILLS

- **Language Skills**
 - English: Fluent
 - TOEFL: **104**/120 (Reading: **29** /30, Listening: **28** /30, Speaking: **23**/30 , Writing: **24**/30)
 - Persian: Native
- **Computer Skills**
 - GT-Suite
 - Matlab
 - CAD (Catia, Solid works, AutoCAD)
 - Python
 - Machine Learning
 - Ansys

SELECTED ACADEMIC PROJECTS

- **Determining parameters of Wiebe function for EF7 engine**
 - Computing released heat and plotting its figure
 - Determining parameters by MATLAB from cumulative figure(Course: Internal Combustion Engines)
- **Determination of gasoline heating value and using it in a power plant**
 - Determination of gasoline heating value by experimenting in the lab
 - Computing power plant equations by EES
 - Calculating the price of electricity generated(Course: Fuel and Combustion)
- **Design of heating and cooling system of a building**
 - Calculating the heating and cooling system by Carrier
 - Selecting appropriate equipment according to the calculation(Course: Air Conditioning System Design)
- **Design of industrial refrigeration**
 - Calculating the Refrigeration loads by Carrier
 - Selecting the refrigeration equipment (Compressor, Condenser, Evaporator) and locating by AutoCAD(Course: Freezing & Cooling System Design)
- **Design of Jacuzzi and pool**
 - Determination of the required equipment (Pumps, Filters, Boiler, Heat exchanger, Skimmers)
 - Locating the equipment of pool and powerhouse by AutoCAD(Course: Water distribution system)

WORK EXPERIENCE

- **Designing Engineer in [EMP](#)** (Aug2021-Feb2022)
modeling the company's products by CAD software.

Electro Mohareke Parsian Company is a Designer and manufacturer of all kinds of tube bundle and re-tubing equipment used by power plant such as tube bundle extractors.

SELECTED COURSES

- | | | | |
|-------------------------------|----------------------|------------------------------------|----------------------|
| • Internal Combustion Engines | Grade A ⁺ | • Automatic Control | Grade A ⁺ |
| • Fluid Mechanics II | Grade A ⁺ | • Water distribution system | Grade A ⁺ |
| • Fuel and Combustion | Grade A ⁺ | • Heat Transfer I | Grade A ⁺ |
| • Thermal Power Plant | Grade A ⁺ | • Freezing & Cooling System Design | Grade A ⁺ |

WORKSHOPS

- **HVAC (Design of Heating Ventilation and Air Conditioning)** Summer 2020
360 Hours of Vocational Training in Iran Technical and Vocational Training Organization, Isfahan, Iran.
- **MATLAB** Summer 2019
100 Hours of the Isfahan University of Technology, Isfahan, Iran.
- **CATIA** Summer 2018
330 Hours of Vocational Training in Iran Technical and Vocational Training Organization, Isfahan, Iran.
- **AUTOCAD** Summer 2017
115 Hours of Vocational Training in Iran Technical and Vocational Training Organization, Isfahan, Iran.

REFERENCES

- **Dr. Iman Chitsaz (B.Sc. Thesis Supervisor)**
Associate Professor of Mechanical Engineering, Isfahan University of Technology, Isfahan, Iran
E-mail : i.chitsaz@iut.ac.ir [Google Scholar](#)
- **Dr. Mohammad Reza Salimpour**
Professor of Mechanical Engineering, Isfahan University of Technology, Isfahan, Iran
E-mail: salimpour@iut.ac.ir [Google Scholar](#)