

Curriculum Vitae

Personal Information

Babak Ahmadi

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🌐 [Google Scholar](#)

🌐 [Researchgate](#)



Education

Ph.D., Physics

(2025-Present)

Karlsruhe Institute of Technology, Baden-Württemberg, Germany

- Dissertation: Size-dependent turbulent dust transport in idealized and realistic high-resolution simulations

M.Sc., Mechanical Engineering, Energy Conversion

(2015-2018)

Iran University of Science and Technology, Tehran, Iran

- Total CGPA: **17.09/20** (in Iranian Scale)
- Thesis: Technical-economic and Environmental Comparison of Encapsulated Cold Storage Systems

B.Sc., Mechanical Engineering

(2011-2015)

Islamic Azad University-Shahr-e-Rey branch, Tehran, Iran

- Total CGPA: **17.61/20** (in Iranian Scale)
- Thesis: The Application of Thermal Storage Systems in HVAC Systems

Work Experience

Commercial Specialist

(2021-2023)

Iran Khodro Company, Tehran, Iran

- Collaborated closely with the engineering team
- Established fruitful relationships with corporations
- Achieved significant cost savings through commercial negotiations

Research Interests

- Particulate flows
- Computational Fluid Dynamics
- Ice storage systems
- Heat transfer enhancement

Publications

- [1] **Babak Ahmadi**, Amirhossein Mohammadkhani. "Numerical simulation of passive heat transfer enhancement using blunt bodies in an internal flow." (To-be-submitted) **(2025)**
- [2] Amirhossein Mohammadkhani, **Babak Ahmadi**, and Qingang Xiong. "A numerical study on pressure drop and separation efficiency of a new swirl tube cleaner." *Advanced Powder Technology* (2022). **(2022)**
- [3] Ehsan Aminian, **Babak Ahmadi**. Numerical investigation on heat transfer and performance number of nanofluid flow inside a heat exchanger filled with porous media. *ADMT Journal* (2018). **(2018)**

Certifications and Attended Courses

- Certificate of completion in **Introduction to Functions in Python**, DataCamp **(2025)**
- Certificate of completion in **Intermediate Python**, DataCamp **(2024)**
- Audited **Introduction to Programming with Python**, edX **(2023)**
- Certificate of **TOEFL iBT** (Overall Score: **103**), Educational Testing Service (ETS) **(2022)**
- Attended **OpenFOAM** course, University of Tehran **(2019)**
- Certificate of completion in **MATLAB**, Iran TVTO **(2016)**

Attended Seminars

- Numerical simulations of particle transport in environmental and biological flows **(2019)**

Selected Projects		
• Numerical simulation of indoor ventilation to reduce the risk of respiratory disease transmission		(2018)
• An investigation on heat transfer enhancement using the field synergy principle		(2016)
• Developing a program in Fortran to solve non-Newtonian turbulent flow		(2015)
Language Skills		
• English (TOEFL iBT Score: 103)	• German (A1 level)	• Persian (Native)
Computer Skills		
• Programing: MATLAB, Python, C++, Fortran	• Computer-Aided Engineering: ANSYS Fluent (DPM, UDF), OpenFoam, Carrier HAP	
• Computer-Aided Design: Solidworks, Spaceclaim	• Meshing Tools: ICEM CFD, ANSYS Meshing	
• CFD Post-processing Tools: ANSYS CFD-Post, Tecplot 360, Paraview	• Other: Minitab, Latex, MS Access, MS office, MS Project, MS Outlook	
Honors and Awards		
• Ranked 4/13 (according to CGPA) in the Graduate Program, Faculty of Mechanical Engineering, Iran University of Science and Technology, Tehran, Iran		(2018)
• Placed in the top 1.5% of students in the University Entrance Examination for Entering the Graduate Program		(2015)
• Ranked 1st (according to CGPA) in the Undergraduate Program, Faculty of Mechanical Engineering, Shahr-e-Rey Branch, Islamic Azad University, Tehran, Iran		(2015)