

## Mohammad Reza Daneshvar Garmroodi

Cell: +1-438-929-1779

Email: Mohammadrezadaneshvar1994@gmail.com

### EDUCATION

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- **Concordia University, Montreal, Canada** Sep 2019 - May 2025  
*Ph.D. in Mechanical Engineering; GPA: 4.1/4.3*
- **Amirkabir University of Technology, Tehran, Iran** Sep 2017 - Aug 2019  
*MSc in Mechanical Engineering; GPA: 19.54/20 (Ranked 1st)*
- **University of Tabriz, Tabriz, Iran** Sep 2013 - Aug 2017  
*BSc in Mechanical Engineering; GPA: 17.54/20 (Last two years)*

### JOURNAL PUBLICATIONS

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1. M.M. Nasiri, **M.R. Daneshvar Garmroodi** and M. Tembely. Impact dynamics of a hollow viscoelastic droplet on surface *Under Preparation*.
2. **M.R. Daneshvar Garmroodi** and I. Karimfazli. Two-dimensional mixing stirred system, mixing regimes and transitions. *Under Preparation*.
3. **M.R. Daneshvar Garmroodi** and I. Karimfazli. Yield-Stress Fluid Mixing: Localization Mechanisms and Regime Transitions. *Under Review with positive feedback, Journal of Fluid Mechanics*.(Link).
4. **M.R. Daneshvar Garmroodi** and I. Karimfazli. Mixing in heterogeneous fluids: An examination of fluid property variations. *Journal of Non-Newtonian Fluid Mechanics*. (Link)
5. **M.R. Daneshvar Garmroodi** and A. Ahmadpour. Numerical simulation of stratified waxy crude oil and water flows across horizontal pipes in the presence of wall heating. *Journal of Petroleum Science and Engineering*, 193:107458, 2020 . (Article's Link)
6. **M.R. Daneshvar Garmroodi** and A. Ahmadpour. A numerical study on two-phase core-annular flows of waxy crude oil/water in inclined pipes. *Chemical Engineering Research and Design*, 159:362-376, 2020 . (Article's Link).
7. **M.R. Daneshvar Garmroodi**, A. Ahmadpour, and F. Talati. MHD mixed convection of nanofluids in the presence of multiple rotating cylinders in different configurations: a two-phase numerical study. *International Journal of Mechanical Sciences*, 150:247-264, 2019 . (Article's Link)

### HONORS & AWARDS

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- Graduate Fellowship for Ph.D. program in Mechanical Engineering, Concordia University. Fall 2019  
*three years, Monetary value: 37,915 CAD.*
- Graduate Fellowship for Ph.D. program in Marine Engineering, NTNU University. Fall 2019  
*three years, Monetary value 479,600 NOK (approximately 70,000 CAD per year), declined.*
- Graduate Fellowship for Ph.D. program in Mechanical Engineering, Ghent University. Fall 2019  
*three years, Monetary value 30,000 Euro per year, declined.*
- Ranked 1st Among 60 Mechanical Engineering Master students of Amirkabir University. Spring 2019  
*four years, Monetary value: 300,000,000 Rial (approximately 7,000 CAD per year), declined.*
- Accepted in the First Stage of the National Computer and Mathematical Olympiads. Fall 2010, 2011, 2012

## TEACHING EXPERIENCES

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• **Teaching assistant & marker, Concordia University, Montreal, Canada** 2019-2025  
*Applied Advanced Calculus, Partial Differential Equations, Ordinary Differential Equations, Fluid Mechanics I, Fluid Mechanics II, Heat Transfer I, Heat Transfer II*

• **Teaching assistant & marker, Amirkabir University of Technology, Tehran, Iran** 2017-2019  
*Fluid Mechanics, Heat Transfer I, Non-Newtonian Fluid Mechanics, Continuum mechanics*

## CONFERENCES

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1 **M.R. Daneshvar Garmroodi** and I. Karimfazli, Scalar mixing in viscoplastic fluids, August 2024, *26th International Conference of the Theoretical and Applied Mechanics (ICTAM 2024)*, Daegu, Republic of Korea.

2 **M.R. Daneshvar Garmroodi** and I. Karimfazli, May 2024, Understanding Mixing Dynamics in Yield Stress Fluids, *The Canadian Society for Mechanical Engineering International Congress*, Toronto, Canada.

3 **M.R. Daneshvar Garmroodi** and I. Karimfazli, Scalar mixing in viscoplastic fluids, April 2024, *The annual European rheology conference*, Leeds, United Kingdom.

4 **M.R. Daneshvar Garmroodi** and I. Karimfazli, Localization of stirring flows: the effect of the yield stress, May 2023, *8th PACIFIC RIM conference on rheology*, Vancouver, Canada.

5 **M.R. Daneshvar Garmroodi** and I. Karimfazli, May 2022, Chaotic mixing of complex fluids: on the effects of viscosity ratio, *The Canadian Society for Mechanical Engineering International Congress*, Edmonton, Canada.

6 **M.R. Daneshvar Garmroodi** and I. Karimfazli, Mixing of heterogeneous fluids: buoyancy effects, April 2022, *The annual European rheology conference*, Seville, Spain.

7 **M.R. Daneshvar Garmroodi** and I. Karimfazli, 2021. Mixing of complex fluids: on the effects of inhomogeneity. *The Canadian Society for Mechanical Engineering International Congress*, online.

## SELECTED SIDE PROJECTS

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• Numerical simulation of the impact of a hallow viscoelastic droplet on surface using Basilisk.  
*During PhD Program*

• Developing a CNN-LSTM Neural Network to Predict Flow Development  
*During PhD Program*

• Adding Dynamic Mesh and Ability to Track Passive Particles for the twoLiquidMixingFoam solver in OpenFOAM  
*During PhD Program*

• Developing PCM Solver in OpenFOAM Based on Phase Field or Enthalpy Methods.  
*During PhD Program*

• Coding Annular Flow of a Newtonian Fluid by Finite Volume Method (FVM)  
*Advanced Computational Fluid Dynamics Course*

• Coding Mixed Convection of Water Flows in a Lid-Driven Cavity by Finite Difference Method (FDM)  
*Advanced Computational Fluid Dynamics Course*

• A Priory and A Posteriori Tests Using Dynamic Smagorinsky, and Wong LES Models and Solving Filtered Burgers equation by Finite Difference Method (FDM)  
*Large Eddy Simulation Course*

• Coupling Level-Set method with VOF algorithm in OpenFOAM  
*Multiphase Flows Course*