

Meisam Farzaneh Kaloorazi

CONTACT INFORMATION

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RESEARCH INTERESTS

Multiphase Flows, Reacting Flows, Fluid Mechanics, Computational Fluid Dynamics (CFD), Heat and Mass Transfer

EDUCATION

Chalmers University of Technology, Gothenburg, Sweden

Ph.D. Candidate, Multiphase Flows, 2008 (expected graduation date: 2013)

- Dissertation Topic: “Numerical Simulation of Multiphase Flows in Fluidized beds”

My research project is on multiphase flow simulation with applications in fluidization and energy conversion systems. As for the first part of the project, we have developed a novel Discrete Particle Method (DPM) for simulation of fuel mixing in fluidized beds. At the moment, I am working on the other common approach used in multiphase modeling (Eulerian-Eulerian using Kinetic Theory of Granular Flows). All the simulations have been carried out using MFIIX (Multiphase Flow with Interphase eXchanges), which is an open source computer code developed at the National Energy Technology Laboratory (NETL) for describing the hydrodynamics, heat transfer and chemical reactions in fluid-solids systems.

- Advisor: Srdjan Sasic

K. N. Toosi University of Technology, Tehran, Iran

M.S., Mechanical Engineering, Energy Conversion, 2007

- Dissertation Topic: “Numerical and Experimental Study of Combustion in Porous Media”

During my M.S. I worked on a project on combustion in porous media. I mainly focused on numerical modeling of fluid flow, heat transfer and chemical reaction in a porous burner. Furthermore, during the project I had a very close collaboration with my colleague who was mainly responsible for the experimental section of the project. Eventually, we manufactured, tested and simulated the porous burner as the first research group in Iran.

University of Guilan, Rasht, Iran

B.S., Mechanical Engineering, 2004

HONORS AND AWARDS

Kharazmi Young Researcher prize for Designing and Manufacturing of a Porous Burner, 2010. (*The Kharazmi awards are given to the researchers who have developed or come up with new inventions and technological methods or medicinal systems.*)

ACADEMIC
EXPERIENCE

Instructor

2007 - 2008

- Fluid Mechanics II, Azad University, Takestan branch, Iran
- Heat Transfer I, Azad University, Takestan branch, Iran
- Principles of Refrigeration, Azad University, Takestan branch, Iran
- Technical Language, Azad University, Takestan branch, Iran
- Physics and Lab, Azad University, Roudbar branch, Iran
- FLUENT Commercial Code and GAMBIT Mesh Generation Software, R & D center of Advanced Materials, Tehran, Iran

Teaching Assistant

2008 - present

- Multiphase Flow course, Chalmers University of Technology
- Mechanics of Solids and Fluids, Chalmers University of Technology

JOURNAL
PUBLICATIONS

M. Farzaneh; S. Sasic, A. E. Almstedt; F. Johnsson; D. Pallares: A study of fuel particle movement in fluidized beds, *Industrial & Engineering Chemistry Research*, 52 (16), 2013, pp. 5791-5805.

M. Farzaneh; S. Sasic, A. E. Almstedt; F. Johnsson; D. Pallares: A novel multigrid technique for lagrangian modeling of fuel mixing in fluidized beds. *Chemical Engineering Science*, 66 (22), 2011, pp. 5628-5637

M. Farzaneh, R. Ebrahimi, M. Shams, and M. Shafiey, Numerical investigation of premixed combustion in a porous burner with integrated heat exchanger, *Heat and Mass Transfer*, Springer, 48 (7), 2012, pp. 1273-1283

M. Farzaneh, R. Ebrahimi, M. Shams, and M. Shafiey, Numerical Simulation of Thermal Performance of a Porous Burner, *Chemical Engineering and Processing: Process Intensification*, 48 (2), 2009, pp. 623-632

A. Raufi, M. Shams, **M. Farzaneh**, and R. Ebrahimi, Numerical Simulation and Optimization of Fluid Flow in Cyclone Vortex Finder, *Journal of Chemical Engineering and Processing*, 47 (1), 2008, pp. 128-137

M. Farzaneh, R. Ebrahimi, M. Shams and M. Shafiey, Two-dimensional Numerical Simulation of Combustion and Heat Transfer in Porous Burners, *Engineering Letters*, International Association of Engineering, IAENG, Vol. 15, issue2, 2007, pp. 370-375

CONFERENCE
PRESENTATIONS

M. Farzaneh; A. E. Almstedt; F. Johnsson; D. Pallares; S. Sasic: Eulerian-Eulerian-Lagrangian Simulation of Fuel Mixing in Fluidized beds. 8th International Conference on Multiphase Flow ICMF 2013, Jeju, Korea, May 26 - 31, 2013 (accepted)

M. Farzaneh; A. E. Almstedt; F. Johnsson; D. Pallares; S. Sasic: Simulation of Fuel Mixing in Fluidized Beds using a Combined Tracking Technique. *Fluidization XIV*, 2013, Noordwijkerhout, The Netherlands (accepted)

M. Shafiey, **M. Farzaneh**, R. Ebrahimi, and M. Shams, Experimental Study of Combustion in a Porous Medium Burner, 2nd Combustion Conference of Iran, Islamic Azad University of Mashhad, February 2008

M. Farzaneh, M. Shams and R. Ebrahimi, A Sensitivity Analysis of Flow Characteristics in Fluidized Beds to Drag Models, *International Conference on Multiphase Flow*, ICMF 2007, Leipzig,

Germany.

A. Hajiloo and N. Amanifard, **M. Farzaneh**, Numerical Flow Simulation in a Centrifugal Pump using Sliding Mesh Technique, 14th Annual (International) Conference on Mechanical Engineering-ISME2006, Isfahan University of Technology, Iran.

PATENT

Mohammad Shafiey, Reza Ebrahimi, Meisam Farzaneh and Mehrzad Shams, Designing and Manufacturing of a Porous Burner and its Test Equipment, No. 45907, Iranian Organization for the Registration of Deeds and Landed Properties.

WORK EXPERIENCE

Numerical Simulation and Optimization of Fluid Flow in an Oxidation Furnace, R & D center of Advanced Materials, Tehran, Iran, Jan. 2008- Apr. 2008

A member of the project control team, Pars Khodro Company, Logan(L90) production project, February 2006-September 2007

The Steam and Gas Power Plant, Loshan, Iran, Summer 2004

COMPUTER SKILLS

- Operating Systems: Windows, Unix/Linux
- Programming Languages: FORTRAN, C++,
- Scientific Applications: Gambit, Fluent, ANSYS, MATLAB, tecplot, paraview, OpenFoam
- Technical Drawing: AutoCAD, Solid Works, Mechanical Desktop, AutoPlant

LANGUAGES

- Farsi: mother tongue
- English: Fluent
- Swedish: Good
- German: beginner

REFERENCES

Srdjan Sasic

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