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14

Citations (Scopus):

586

Research Interests

#	Title	Start date
1	https://sites.google.com/view/dramani	

Supervised MSc Theses

#	Thesis title	By	Date
1	Numerical study of the manipulation of droplets touching a solid wall in electrowetting process	Saeed Esmaeili & Ehsan Amani	May 2022
2	Direct numerical simulation of droplet-moving-wall impact	Saeid Abdi Sij & Ehsan Amani	May 2022
3	Development of a new seeding model for flow boiling heat transfer inside a micro evaporator under the effect of a DC electric field	Mehran Soleimani & Ehsan Amani	March 2022
4	Numerical study of blood flow in an asymmetric bifurcation under the effect of an external magnetic field	Seyed Reza Nodeh Farahani & Ehsan Amani	June 2021
5	An investigation of computational cost reduction using multiscale CFD methods	Hassan Imani Parashkooch & Ehsan Amani	April 2021
6	Investigation of hybrid Eulerian-Lagrangian methods for the simulation of electro spray	Amirhossein Taran & Ehsan Amani	April 2021

7	Numerical simulation of urea-water solution spray in SCR systems	Abbas Doagooroozbahani & Ehsan Amani	April 2021
8	An investigation of the effect of wall modelling in large-eddy simulation	Mohammad Taghvaei & Ehsan Amani	March 2021
9	Numerical investigation of magnetic drug targeting in lymphatic vessels considering lymph-leaflet interaction	Amir Poorghani & Ehsan Amani	March 2021
10	A numerical simulation of incompressible flow in a partially porous curved pipe	Mohammadsadegh Rezazadeh & Ehsan Amani	December 2020
11	A numerical simulation of pumping by gill-plates at moderate Reynolds numbers	Ali Semati & Ehsan Amani	July 2020
12	Numerical Simulation of Non-Newtonian Turbulent Flows Using LES method	Mohammadjavad Aghajari & Ehsan Amani	July 2020
13	A numerical simulation of pulmonary drug delivery process and its enhancement	Hamid Yousefi & Ehsan Amani	February 2020
14	A numerical simulation of turbulent two-phase slug flow of a gas and non-newtonian liquid	Fateme Darlik & Ehsan Amani	February 2019
15	Study of two-phase slug flows using front tracking method	Pedram Yousefi & Ehsan Amani	September 2018
16	A numerical investigation of evaporating liquid spray-wall interactions using an Eulerian-Lagrangian approach	Behrad Asgari & Ehsan Amani	September 2018
17	A numerical investigation of gas-solid flow and erosion in cyclone separator using an Eulerian-Lagrangian approach	Hesam Tofighian & Ehsan Amani	February 2018
18	A Numerical investigation of injection algorithm effect on the distribution of fuel in a combustion chamber	Sana Ramezani & Ehsan Amani	February 2018
19	Eulerian-Lagrangian gas-solid flow simulation incorporating a modified two-way coupling numerical algorithm	Hamed Eshraghy & Ehsan Amani	February 2018
20	Improvement of combustion operating conditions in partially pre-mixed gas turbines	Mohammad Sahebamei & Ehsan Amani	February 2018
21	An experimental and numerical investigation of combustion in RCCI engines	Sajjad Mohammadnejad Daryani & Ehsan Amani	February 2018
22	Numerical optimization of combustion parameters in internal combustion engine operating at LTC mode	Kaveh Yazdani Motlagh & Ehsan Amani	January 2018
23	Numerical study of electrokinetic flow of non-newtonian fluids in nanochannels	Saeed Jahromi & Ehsan Amani	July 2017
24	Thermal analysis of electrokinetic effects in nano channel	Morteza Mehrabian & Ehsan Amani	July 2017
25	Numerical study of combustion performance in internal combustion diesel engines under different intake air conditions	Mohamadreza Chalak Sirat & Ehsan Amani	April 2017
26	Study of heat transfer enhancement of nano-fluid using four equation models	Ali Safari & Ehsan Amani	February 2017
27	Numerical study of incompressible flow inside a curved pipe with a longitudinal obstacle	Amin Ghaemian & Ehsan Amani	February 2017
28	Numerical study of electrokinetic motion of nanoparticle in nanochannels	Mehdi Rahimi Ghiasi & Ehsan Amani	February 2017

29	A numerical study of optimum performance in a combustion chamber with a fuel gas	Mohsen Omidi & Ehsan Amani	February 2017
30	Eperimental and numerical study of thermal comfort in central amphitheatre of AUT using undr-floor air distribution system	Rahman Rahmaninia & Ehsan Amani	February 2017
31	A numerical investigation of a liquid fuel combustion in a cylindrical enclosure	Seyed Amir Hossein Emami & Ehsan Amani	January 2017
32	Experimental and numerical study of forced convection over a rotating disc under different airflow direction	Mohammad Tohidi Sardasht & Ehsan Amani	October 2016

Journal Papers

Portal Records

- 1 Ehsan Amani, Ali Ahmadpour, Mohammadjavad Aghajari, "Dynamic subgrid-scale LES model for turbulent non-Newtonian flows: A priori and a posteriori analyses of Burgers turbulence", *JOURNAL OF NON-NEWTONIAN FLUID MECHANICS*, September 2021 Vol. 295, Num. 104615, Page 1-11, September 2021,
- 2 Ali Ahmadpour, Ehsan Amani, Alireza Mashayekhi, Mehran Soleimani, "Newtonian and Shear-thinning Taylor flow heat transfer in wavy micro-tubes: a numerical study", *MECCANICA*, July 2021 Vol. 0, Num. 0, Page 1-22, July 2021,
- 3 Sana Ramezani, Ehsan Amani, Majid Saffar-Avval, "A combined rate-shaping-splitting injection strategy for regulating stratification characteristics of fuel sprays", *APPLIED THERMAL ENGINEERING*, January 2021 Vol. 187, Num. 0, Page 1-15, January 2021,
- 4 Behrad Asgari, Ehsan Amani, "An improved spray-wall interaction model for Eulerian-Lagrangian simulation of liquid sprays", *INTERNATIONAL JOURNAL OF MULTIPHASE FLOW*, October 2020 Vol. 134, Num. 0, Page 1-16, October 2020,
- 5 Ali Semati, Ehsan Amani, Farhad Saffaraval, Majid Saffar-Avval, "Numerical simulation of oscillating plates at the visco-inertial regime for bio-inspired pumping and mixing applications", *PHYSICS OF FLUIDS*, October 2020 Vol. 32, Num. 0, Page 1-17, October 2020,
- 6 Hesam Tofighian, Ehsan Amani, Majid Saffar-Avval, "A large eddy simulation study of cyclones: The effect of sub-models on efficiency and erosion prediction", *POWDER TECHNOLOGY*, November 2019 Vol. 360, Num. 0, Page 1237-1252, November 2019,
- 7 Rahman Rahmaninia, Ehsan Amani, Abbas Abbassi, "Computational optimization of a UFAD system using large eddy simulation", *SCIENTIA IRANICA TRANSACTION B-MECHANICAL ENGINEERING*, July 2019 Vol. 27, Num. 6, Page 2871-2888, July 2019,
- 8 Mehran Dadsetan, Iman Chitsaz, Ehsan Amani, "A study of swirl ratio effects on the NO_x formation and mixture stratification in an RCCI engine", *ENERGY*, June 2019 Vol. 182, Num. 0, Page 1100-1114, June 2019,
- 9 Hamed Nasrfard Jahromi, Hassan Rahimzadeh, Ali Ahmadpour, Ehsan Amani, "Simulation of Intermittent Flow Development in a Horizontal Pipe", *JOURNAL OF FLUIDS ENGINEERING-TRANSACTIONS OF THE ASME*, June 2019 Vol. 141, Num. 12, Page 1-33, June 2019,
- 10 Ehsan Amani, Amin Daneshgar, Amirreza Hemmatzade, "A novel combined baffle-cavity micro-combustor configuration for micro-thermo-photo-voltaic applications", *CHINESE JOURNAL OF CHEMICAL ENGINEERING*, May 2019 Vol. 28, Num. 0, Page 403-413, May 2019,
- 11 Sajjad Mohammadnejad Daryani, Ehsan Amani, Reza Hosseini Abardeh, Iman Chitsaz, Ali Kamalie Iglie, "Effects of the swirl ratio and spray angle on the mixture stratification in a diesel-NG RCCI engine", *JOURNAL OF THE BRAZILIAN SOCIETY OF MECHANICAL SCIENCES AND ENGINEERING*, April 2019 Vol. 41, Num. 5, Page 1-17, April 2019,
- 12 Saeed Jahromi, Ehsan Amani, Saeed Movahed, "An improved hybrid continuum-atomistic four-way coupled model for electrokinetics in nanofluidics", *ELECTROPHORESIS*, March 2019 Vol. 0, Num. 0, Page 1-13, March 2019,

- 13 Hesam Tofighian, Ehsan Amani, Majid Saffar-Avval, "Parcel-number-density control algorithms for the efficient simulation of particle-laden two-phase flows", *JOURNAL OF COMPUTATIONAL PHYSICS*, March 2019 Vol. 387, Num. 0, Page 569-588, March 2019,
- 14 Mehran Ansary, Mohammad Reza Heirani Nobari, Ehsan Amani, "Determination of pitch angles and wind speeds ranges to improve wind turbine performance when using blade tip plates", *RENEWABLE ENERGY*, March 2019 Vol. 140, Num. 0, Page 957-969, March 2019,
- 15 Mohammad Sahebamei, Ehsan Amani, Mohammad Reza Heirani Nobari, "Numerical analysis of radial and angular stratification in turbulent swirling flames", *ENERGY*, February 2019 Vol. 173, Num. 0, Page 523-539, February 2019,
- 16 Ali Ahmadpour, Ehsan Amani, Mohammad Esmaili, "Numerical simulation of shear thinning slug flows: the effect of viscosity variation on the shape of Taylor bubbles and wall shear stress", *JOURNAL OF THE BRAZILIAN SOCIETY OF MECHANICAL SCIENCES AND ENGINEERING*, January 2019 Vol. 41, Num. 48, Page 1-18, January 2019,
- 17 Ehsan Amani, Ali Ahmadpour, Mohammad Tohidi Moghaddam, "A numerical study of the rise of a Taylor bubble through a sudden/gradual expansion in Newtonian and shear-thinning liquids", *INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES*, January 2019 Vol. 152, Num. 0, Page 236-246, January 2019,
- 18 Ehsan Amani, Parisa Rahdan, Shaghayegh Pourvosoughi Sarcheshmeh, "Multi-objective optimizations of air partitioning in a gas turbine combustor", *APPLIED THERMAL ENGINEERING*, December 2018 Vol. 148, Num. 0, Page 1292-1302, December 2018,
- 19 Negar Alvandifar, Majid Saffar-Avval, Ehsan Amani, "An Investigation of Flow Across Porous Layer Wrapped Flat Tube Banks", *TRANSPORT IN POROUS MEDIA*, November 2018 Vol. 0, Num. 0, Page 1-24, November 2018,
- 20 Mohammad Safavi, Ehsan Amani, "A comparative study of turbulence models for non-premixed swirl-stabilized flames", *JOURNAL OF TURBULENCE*, September 2018 Vol. 0, Num. 0, Page 1-34, September 2018,
- 21 Morteza Kolahdoozan, Ehsan Amani, Saeb Faraji Gargari, "Mapped Moving Least Squares approximation used in Mixed Discrete Least Squares Meshfree method", , August 2018 Vol. 51, Num. 4, Page 805-816, August 2018,
- 22 Kaveh Yazdani Motlagh, Ehsan Amani, Hamid Naderan Tahan, "Multi-objective optimizations of the boot injection strategy for reactivity controlled compression ignition engines", *INTERNATIONAL JOURNAL OF ENGINE RESEARCH*, August 2018 Vol. 0, Num. 0, Page 1-22, August 2018,
- 23 Ehsan Amani, Morteza Mehrabian, Saeed Movahed, "A discrete phase hybrid continuum-atomistic model for electrokinetics in nanofluidics", *PHYSICS OF FLUIDS*, July 2018 Vol. 30, Num. 7, Page 1-11, July 2018,
- 24 Mohammad Shojayian, Ashkan Irannezhad, Ehsan Amani, Robert Riehn, Saeed Movahed, "Manipulation and control of the electrokinetic motion of a non-conductive micro-particle in microchannel by generating lateral temperature gradient", *INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER*, May 2018 Vol. 126, Num. 0, Page 861-870, May 2018,
- 25 Ehsan Amani, Mohammadreza Akbari, Saeid Shahpouri, "Multi-objective CFD optimizations of water spray injection in gas-turbine combustors", *FUEL*, April 2018 Vol. 227, Num. 0, Page 267-278, April 2018,
- 26 Ehsan Amani, Poorya Alizadeh, Rozhan Siavashmoghaddam, "Micro-combustor performance enhancement by hydrogen addition in a combined baffle-bluff configuration", *INTERNATIONAL JOURNAL OF HYDROGEN ENERGY*, March 2018 Vol. 43, Num. 16, Page 8127-8138, March 2018,
- 27 Ali Safari, Majid Saffar-Avval, Ehsan Amani, "Numerical investigation of turbulent forced convection flow of nano fluid in curved and helical pipe using four-equation model", *POWDER TECHNOLOGY*, February 2018 Vol. 328, Num. 0, Page 47-53, February 2018,
- 28 Vahid Rajabi Kondlaji, Ehsan Amani, "A Computational Study of Swirl Number Effects on Entropy Generation in Gas Turbine Combustors", *HEAT TRANSFER ENGINEERING*, February 2018 Vol. 0, Num. 0, Page 1-16, February 2018,
- 29 Sina Kazemi, Mohammad Adib, Ehsan Amani, "Numerical study of advanced dispersion models in particle-laden swirling flows", *INTERNATIONAL JOURNAL OF MULTIPHASE FLOW*, January 2018 Vol. 101, Num. 0, Page 167-185, January 2018,
- 30 Hadi Niknam Shirvan, Iman Chitsaz, Ehsan Amani, Saeed Abdolmaleki, Amir Hossein Parivar, "Energy balance on a three-cylinder engine with turbocharger", , December 2017 Vol. 49, Num. 0, Page 29-37, December 2017,

- 31 Mehran Ansary, Ehsan Amani, "Micro-combustor performance enhancement using a novel combined baffle-bluff configuration", CHEMICAL ENGINEERING SCIENCE, October 2017 Vol. 175, Num. 0, Page 243-256, October 2017,
- 32 Ali Farokhipour, Ehsan Hamidpour Zarea, Ehsan Amani, "A numerical study of NOx reduction by water spray injection in gas turbine combustion chambers", FUEL, October 2017 Vol. 212, Num. 0, Page 173-186, October 2017,
- 33 Negar Alvandifar, Majid Saffar-Avval, Ehsan Amani, "Partially metal foam wrapped tube bundle as a novel generation of air cooled heat exchangers", INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER, October 2017 Vol. 118, Num. 0, Page 171-181, October 2017,
- 34 Behrad Asgari, Ehsan Amani, "A multi-objective CFD optimization of liquid fuel spray injection in Dry-Low-Emission gas-turbine combustors", APPLIED ENERGY, July 2017 Vol. 203, Num. 0, Page 696-710, July 2017,
- 35 Mohammad Tohidi Sardasht, Reza Hosseini Abardeh, Ehsan Amani, "An analysis of turbulence models for prediction of forced convection of air stream impingement on rotating disks at different angles", INTERNATIONAL JOURNAL OF THERMAL SCIENCES, April 2017 Vol. 118, Num. 0, Page 139-151, April 2017,
- 36 Mohammadmehdi Torkzadeh, Farshad Bolourchifard, Ehsan Amani, "An investigation of air-swirl design criteria for gas turbine combustors through a multi-objective CFD optimization", FUEL, September 2016 Vol. 186, Num. 0, Page 734-749, September 2016,
- 37 Mahdi Jafari, Mohammadjavad Parhizkar, Ehsan Amani, Hamid Naderan Tahan, "Inclusion of entropy generation minimization in multi-objective CFD optimization of diesel engines", ENERGY, August 2016 Vol. 114, Num. 0, Page 526-541, August 2016,
- 38 Ehsan Amani, Saeed Movahed, "Hybrid continuum-atomistic approach to model electrokinetics in nanofluidics", ANALYTICA CHIMICA ACTA, June 2016 Vol. 923, Num. 1, Page 33-44, June 2016,
- 39 Hamid Reza Arjmandi Marvast, Ehsan Amani, "A numerical investigation of the entropy generation in and thermodynamic optimization of a combustion chamber", ENERGY, March 2015 Vol. 81, Num. 0, Page 706-718, March 2015,

Conference Papers

Portal Records

- 1 Hadi Niknam Shirvan, Iman Chitsaz, Ehsan Amani, Saeed Abdolmaleki, Amir Hossein Parivar, "Energy balance on a three-cylinder engine with turbocharger ", 10th international conference on internal combustion engines and oil, February 2018
- 2 Sajjad Mohammadnejad Daryani, Saeed Movahed, Ehsan Amani, "Optimization of Ohmic Heating Sterilization by Applying AC Electrical Field ", The 25th Annual International Conference on Mechanical Engineering, May 2017
- 3 Sajjad Mohammadnejad Daryani, Ehsan Amani, Reza Hosseini Abardeh, S. Mostafa Agha Mirsalim, Iman Chitsaz, Ali Kamalie Iglie, "Simulation of the dual-fuel diesel-CNG RCCI engine ", 25th Annual International Mechanical Engineering Conference, May 2017
- 4 Fateme Darlik, Ehsan Amani, Ali Ahmadpour, "Simulation of slug flow of liquid-gas two-phase flow in vertical tubes ", The 8th national conference on CFD applications in chemical & petroleum industries, May 2017
- 5 Saeid Shahpouri, Mohammadreza Akbari, Ehsan Amani, "A numerical study of the effects of water spray injection on the performance of gas turbine combustion chambers ", The national gas turbine conference, November 2016
- 6 Nima Momeni Kebria, Behrad Asgari, Ehsan Amani, "An investigation of the effects of fuelspray injection parameters on the performance of modern gas turbine premixers ", The national gas turbine conference, November 2016

Taught Courses

#	Course title	Description	Headlines	Date
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1	Fluid Mechanics (I)	A systematic study of fluid mechanics with the focus on the relation between physical phenomena and mathematical modeling tools. Learning approaches to solve engineering problems		Spring 2022
2	Numerical Simulation of Turbulent Flows	A review on turbulence theory in physical space and spectral space, introducing different turbulence models, a study of and simulation experience in Large eddy Simulation method both in physical and spectral space		Spring 2022
3	Fuels & Combustion	A Study of combustion theory and reacting flow governing equations, Performing a preliminary design of an industrial combustion system, an introduction to detailed design		Spring 2022
4	Fluid Mechanics (II)	A systematic study of fluid mechanics with the focus on the relation between physical phenomena and mathematical modeling tools. Learning approaches to solve engineering problems		Fall 2021
5	Fuels & Combustion	A Study of combustion theory and reacting flow governing equations, Performing a preliminary design of an industrial combustion system, an introduction to detailed design		Fall 2021
6	Fluid Mechanics (I)	A systematic study of fluid mechanics with the focus on the relation between physical phenomena and mathematical modeling tools. Learning approaches to solve engineering problems		Spring 2021
7	Two Phase Gas-Solid Flow	An introduction to the applications and fundamentals of multiphase flows as well as different modelling approaches including Eulerian and Lagrangian methods. The course seminar and project have been devised such that students perform a literature rev		Spring 2021