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Patent:

1-. Seyed Amir Sabet, Mohammad Reza Omidkhah Nasrin, Arezou Jafari, Javad Aminian Dehkordi, “Viscosity Reduction of Extra Heavy Crude Oil Using Synthesized nanocatalysts and ZSM-5”, B82Y;B01D 88/53, 2015.

Book Chapter:

- 1- A. Jafari, S.M. Mousavi, H. Motesaffi, H. Roohian and H. Hamed Sangari, “*Simulation of Hydrodynamics and Mass Transfer in a Valve Tray Distillation Column Using Computational Fluid Dynamics Approach*”, In “Advanced Topics in Mass Transfer”, Intech Publisher, 2011.
- 2- S.M. Mousavi, A. Jafari, S. Yaghmaei, M. Vossoughi, I. Turunen “*Experimental Investigation and Simulation of Ferrous Biooxidation and Flow Hydrodynamics in a Bubble Column Bioreactor using CFD Approach*” In Current Themes in Engineering Technologies, Ao, Sio-Iong, Amouzegar, Mahyar A., Chen, Su-Shing (Editors), Published by American Institute of Physics, pp. 68-82, 2008.

Books:

- 1- S.M. Mousavi, A. Jafari, Z. Goonani, “*Biochemical Engineering*”, by Shigeo Katoh and Fumitaki Yushida, Translated, *Tarbiat Modares University publisher, Tehran, 2012.*
- 2- S.M. Mousavi, A. Jafari, “*Mass transfer from fundamentals to modern industrial applications*”, by Koichi Asano, Translated, *Tarbiat Modares University publisher, Tehran, 2011.*

Published and accepted papers for publication:

- 1- S Zarei, SM Mousavi, T Amani, M Khamforoush, A Jafari, 2021, “Three-dimensional CFD simulation of anaerobic reactions in a continuous packed-bed bioreactor”, *Renewable Energy* 169, 461-472.
- 2- SA Sabet, MR Omidkhah, A Jafari, 2021, “Methods for Viscosity Reduction of Heavy Crude Oil with Focus on Nano Catalysts: A Review Study”, *Iranian Chemical Engineering Journal*, 19 (112), 74-85.
- 3- Z Tohidi, A Jafari, M Omidkhah, 2021, “Electrolyte nanofluid performance on the oil detachment from an oil-wetted carbonate surface: Water channel formation using molecular dynamics simulation”, *Journal of Petroleum Science and Engineering* 196, 108006.
- 4- H Azarhava, A Jafari, F Vakilchah, SM Mousavi, 2021, “Stability and performance of poly γ -(glutamic acid) in the presence of sulfate ion for enhanced heavy oil recovery”, *Journal of Petroleum Science and Engineering* 196, 107688.
- 5- R Gharibshahi, A Jafari, 2021, “Numerical Investigation of controllable Parameters effect on Nanofluid Flooding in a Random Pore Generated Porous Medium”, *Iranian Journal of Chemistry and Chemical Engineering*, In Press.

- 6-** Seyed Masoud Ghalamizade Elyaderani, Arezou Jafari, 2021, “Investigation of interactions between silica nanoparticle, alkaline and polymer in micromodel flooding for enhanced oil recovery”, Energy sources part a: Recovery, utilization and environmental effects, In Press.
- 7-** Mohammad Hossein Shabani, Arezou Jafari, Seyyed Mohammad Mousavi, Mahdi Abdikhanghah, 2021, “Comparison of Produced Biosurfactants Performance in In-Situ and Ex-Situ MEOR: Micromodel Study”, Energy sources part a: Recovery, utilization and environmental effects, In Press.
- 8-** Reza Gharibshahi, Mohammadreza Omidkhan, Arezou Jafari, Zahra Fakhroueian, 2020, “Hybridization of superparamagnetic Fe_3O_4 nanoparticles with MWCNTs and Effect of Surface Modification on Electromagnetic Heating process Efficiency: A Microfluidics Enhanced Oil Recovery Study”, Fuel, 282, 118603.
- 9-** Jamal Salehzadeh Yekshaveh, Arezou Jafari, Zahra Tohidi, Reza Pour Salehi, 2020, “Nano-Scale simulation of Oil-Water-Nanosilica-Rock System: Wettability and Rheological Properties Alteration Using Charged Nanoparticles”, Journal of Petroleum Science and Engineering, 195, 107724.
- 10-** Sepideh Veiskarami, Arezou Jafari, Aboozar Soleymanzadeh, 2020, “Phase Behavior, Oil Recovery and Wettability Alteration of Low Salinity Surfactant Solution in Carbonate Reservoirs”, SPE Journal, 1784-1802.
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- 12-** Behnam Sabzi Dizajyekan, Arezou Jafari, Mohammadreza Hasani, Mohsen Vafaei-Sefti, Zahra Fakhroueian, Mahsa Baghbansalehi, 2020, "Surface modification of synthesized Fe₃O₄ super-paramagnetic nanoparticles and performance investigation in gelation parameters enhancement: application in enhanced oil recovery", *Applied Nanoscience* 10 (3), 955-969.
- 13-** Malahat Ghanad Dezfuli, Arezou Jafari, Reza Gharibshahi, 2020, "Optimum volume fraction of nanoparticles for enhancing oil recovery by nanosilica/supercritical CO₂ flooding in porous medium", *Journal of Petroleum Science and Engineering* 185, 106599.
- 14-** Sara Habibi, Arezou Jafari, Zahra Fakhroueian, 2020, "Application of novel functionalized Al₂O₃/silica by organosiloxane and amine reagents for enhanced oil recovery", *Applied Nanoscience*, 10 (7), 2085-2100.
- 15-** Hamed Zamani, Arezou Jafari, Seyyed Mohammad Mousavi, Esmaeel Darezereshki, 2020, "Biosynthesis of silica nanoparticle using *Saccharomyces cerevisiae* and its application on enhanced oil recovery", *Journal of Petroleum Science and Engineering* 190, 107002.
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- 19-** N Taghili, M Manteghian, A Jafari, 2020, “Novel preparation of $\text{MoO}_3/\gamma\text{-Al}_2\text{O}_3$ nanocatalyst: application in extra-heavy oil visbreaking at atmospheric pressure”, *Applied Nanoscience* 10 (5), 1603-1613.
- 20-** Javad Aminian-Dehkordi, Seyyed Mohammad Mousavi, Seyed Amir Marashi, Arezou Jafari, Ivan Mijakovic, 2020, “A Systems-Based Approach for Cyanide Overproduction by *Bacillus megaterium* for Gold Bioleaching Enhancement”, *Frontiers in Bioengineering and Biotechnology* 8, 528.
- 21-** Sajjad Askari, Arezou Jafari, 2020, “A novel model for natural gas storage on carbon nanotubes”, *Applied Nanoscience*, 1115-1129.
- 22-** Maryam Ijadi Bajestani, Safaa Kader, Mehri Monavarian, Seyyed Mohammad Mousavi, Esmail Jabbari, Arezou Jafari, 2020, Material properties and cell compatibility of poly (γ -glutamic acid)-keratin hydrogels, *International Journal of Biological Macromolecules* 142, 790-802.
- 23-** Sajjad Mahmoudi, Arezou Jafari, Soheila Javadian, 2019, “Temperature effect on performance of nanoparticle/surfactant flooding in enhanced heavy oil recovery”, *Petroleum Science* 16 (6), 1387-1402.
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biosurfactant and salinity in simultaneous flooding for enhanced oil recovery”, RSC Advances 9 (35), 20281-20294.

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- 34-** Hojat Alah Yousefvand, Arezou Jafari, 2018, “Stability and flooding analysis of nanosilica/ NaCl /HPAM/SDS solution for enhanced heavy oil recovery”, *Journal of Petroleum Science and Engineering*, 162 - 283–291.
- 35-** Javad Aminian Dehkordi, Arezou Jafari, Seyyed Amir Sabet, Fatemeh Karami, 2018, “Kinetic studies on extra heavy crude oil upgrading using nanocatalysts by applying CFD techniques”, *Chinese Journal of Chemical Engineering*, 26,- 343–355.
- 36-** Vahid Barkhordari, Arezou Jafari, 2018, “Experimental Investigation of the Base Fluid Miscibility Condition on the oil recovery using nanofluids flooding”, *Journal of Water and Environmental Nanotechnology*, 3(1), 12-21.
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- 40-** Maryam Ijadi Bajestani, Seyyed Mohammad Mousavi, Arezou Jafari, Seyyed Abbas Shojaosadati, 2017, “Biosynthesis and physicochemical characterization of a bacterial polysaccharide/polyamide blend applied for microfluidics study in porous media”, International Journal of Biological Macromolecules, 100-110.
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- 44-** H. Azargoshasb, S.M. Mousavi, T. Amani, A. Jafari, M. Nosrati, 2015, “Three-phase CFD simulation coupled with population balance equations of anaerobic syntrophic acidogenesis and methanogenesis reactions in a continuous stirred bioreactor ”, Journal of Industrial and Engineering Chemistry, 207-217.

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- 51- T. Nazghelichi, A. Jafari, M.H. Kianmehr, M. Aghbashlo, 2013, "*CFD simulation and optimization of factors affecting the performance of a fluidized bed dryer*", Iranian Journal of Chemistry and Chemical Engineering, 32 (4).
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- 66-** S.M. Mousavi, A. Jafari, S. Chegini, I. Turunen, 2009, “CFD simulation of mass transfer and flow behavior around a single particle in bioleaching process”, *Process Biochemistry*, 44, pp 696-703.

Total Number of conferences: 70

Selected Presented papers in national conferences:

* Behnam Sabzi, Arezou Jafari, Mohsen Vafaie-Sefti, Zahra fakhroueian, CFD investigation of nanoparticles/HPAM flooding in well-reservoir coupled system, The 8th National Conference on CFD Applications in Chemical and petroleum Industries. TarbiatModares University, Tehran, Iran

* Vahid Barkhordari, Arezou Jafari, Mohammad Hossein Ghazanfari, Reza Gharibshahi, “Enhanced Oil Recovery Using Nanoclay”, 15th Iranian Chemical Engineering Congress, 2015, Tehran, Iran.

* Faezeh Mohammadi, Ali Haghtalab, Arezou Jafari, Reza Gharibshahi, “CFD Study of Surfactant Flooding in a Micromodel with Quadratic Pore Shape”, The 1st National Conference on Oil and Gas Fields Development (OGFD), Sharif University of Technology, 2015, Tehran, Iran.

* S.A. Sabet, M.R. Omidkhah, A. Jafari, “Application of Nano Nickel Oxide in Upgrading of Heavy Crude Oil”, 15th Iranian Chemical Engineering Congress, 2015, Tehran, Iran.

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* A. Jafari, P. Zamankhan, S.M. Mousavi, K. Pietarinen, and P. Sarkomaa, "Investigation of Flow Dynamics in Porous Media using Computer Simulation", 20th Annual European Simulation and Modeling Conference (ESM'2006, paper code: FLUID-03, pp. 157-163), October 23-25, 2006 - LAAS, Toulouse, France.

* A. Jafari, T. Tynjälä, S.M. Mousavi, and P. Sarkomaa, "CFD simulation of heat transfer in ferrofluids", European Congress of Chemical Engineering -6 (ECCE-6), Copenhagen, Bella center, September 16-21, 2007.

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- * S.M. Mousavi, A. Jafari, S. Yaghmaei, M. Vossoughi, I. Turunen, M.R. Kamali, and P. Sarkomaa, "CFD Simulation of concentration profiles and velocity field. Application: in bioleaching process", 17th European Symposium on Computer Aided Process Engineering (ESCAPE17, paper ID: T4-458), V. Plesu and P.S. Agachi (Editors), May 27-30, 2007, Bucharest, Romania.
- * H. Yousefi, S.M. Mousavi, A. Jafari, A. Soleymani, "Prediction of ferrous biooxidation rate in a packed bed bioreactor using artificial neural network", Nastec 2008, Montreal, Canada.
- * R. Gharibshahi, A. Jafari, Z. Kiaei, "CFD investigation of enhanced oil recovery using nanoparticles", The 8th International Chemical Engineering Congress & Exhibition, 2014, Kish, Iran.
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