Amin Kazemi-Beydokhti (PhD)

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Dean of the Faculty and Associate Professor of Chemical Engineering,

Faculty of Petroleum and Petrochemical Engineering,

Hakim Sabzevari University,

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Google Scholar:

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Educational background

- **Ph.D.** in Chemical Engineering,

Sep. 2010 – Jan. 2015

Ferdowsi University of Mashhad, Mashhad, Iran

Thesis: Functionalized carbon nanotubes: revolutionizing targeted drug delivery of cisplatin for cancer therapy

- **M.Sc.** in Chemical Engineering,

Sep. 2006 – To Mar. 2009

University of Tehran, Tehran, Iran

Thesis: Enhancing performance of shell and tube heat exchangers through nanofluid design and optimization

- **B.Sc.** in Chemical Engineering-Petrochemical and polymer engineering,

Sep. 2000 – To Sep. 2005

Isfahan University of Technology, Isfahan, Iran

Thesis: Cryogenic plants

Work Experiences

Faculty member

- Dean of Faculty of Petroleum and Petrochemical Engineering, Hakim Sabzevari University, Sabzevar, Iran, **2023-present**.
- Associate Professor of Chemical Engineering, Chemical Engineering Department, Faculty of Petroleum and Petrochemical Engineering, Hakim Sabzevari University, Sabzevar, Iran, **2020-2023**.
- Head of Chemical Engineering Department, Faculty of Petroleum and Petrochemical Engineering, Hakim Sabzevari University, Sabzevar, Iran, **2019-2020**.
- Assistant Professor of Chemical Engineering, Chemical Engineering Department, Faculty of Petroleum and Petrochemical Engineering, Hakim Sabzevari University, Sabzevar, Iran; **2015-2019**.

Process and Piping Engineer

- Toossab Consulting Engineers Company (EPC), water management and treatment company, **2015**
- Jondishapour, Petrosadian, and Parsspand (oil and gas EPC companies), **2006-2009**.
- Sarvarman Aria (PC company), project manager, **2010**.

Industrial course instructor-process and piping training courses (2010-2020)

- Conducted training courses at various locations including Isfahan, Ilam, Jam, Shazand Arak, Kermanshah, and other Iranian Gas and Oil Refineries.
- Conducted training courses at various locations including Ariasasol, Jam, Bojnord, Arak, Isfahan, and other Iran Petrochemicals.
- Conducted training courses at RANI (Aujan Food Industry).
- Conducted training courses at Iran Khodro (Automotive Company).
-

Honors and Awards

- Research opportunity at the University of Hamburg (Prof. Patrick Theato), Stimuli-responsive polymers, Germany, 2017(**https://en.civilica.com/doc/701241/**).

- Research opportunity at the Mashhad University of Medical Sciences, Faculty of Pharmacy (Prof. Mahmood Reza Jafari), Targeted drug delivery, 2015, 2016, 2018, and 2019 (**https://doi.org/10.1016/j.cherd.2016.06.006,** https://doi.org/10.1049/mnl.2014.0593, https://doi.org/10.1016/S1773-2247(14)50121-9, http://nanomeghyas.ir/article_46547.html?lang=en**)**
-
- Design and construction of the first combined heat and power (CHP) unit in the Middle East, Mashhad Municipality, Waste Management Organization, Mashhad, Iran, 2010 ((**https://doi.org/10.1016/j.energy.2012.06.033**).

- Research grant, Rheological investigation of smart polymer/carbon nanotube complex on properties of water-based drilling fluids, National Iranian Drilling Company, Iran, 2021 (https://doi.org/10.1016/j.petrol.2019.106257, https://doi.org/10.1016/j.colsurfa.2018.07.058, https://doi.org/10.1016/j.petrol.2019.106257**)**

- Research grant, Simulation and Techno-Economic Analysis of the Integration of a Combined Heat and Power System in a Flare Gas Recovery Unit, Tabriz Oil Refining Company, Iran, 2021 (**https://www.ijcce.ac.ir/article_697968.html, https://www.nsmsi.ir/article_244562.html?lang=en**)**

- Sabbatical at the University of Padova (Prof. Enzo Menna), Carbon nanotube nanofluid for the efficiency improvement in a CHP system: simulation and experimental investigation, Italy, 2014 (**https://doi.org/10.1007/s10973-019-08857-7**).

All publications

Book

Design and modeling of industrial units with PDMS software, A. Kazemi-Beydokhti, S. Rajabi, Kian rayane publications, 2009 (Written in Persian).

ISI Journals

2024 Leila Farhoudi, Seyedeh Maryam Hosseinikhah, **Amin Kazemi-Beydokhti**, Leila Arabi, Seyedeh Hoda Alavizadeh, Seyedeh Alia Moosavian, Mahmoud Reza Jaafari, " pH-sensitive polymeric micelles enhance the co-delivery of doxorubicin and docetaxel: an emerging modality for treating breast cancer", Cancer Nanotechnology, 15(1), https://doi.org/10.1186/s12645-024-00275-1

2024 Seyedeh Yasaman Rahnamaei Rahchamandi, **Amin Kazemi-Beydokhti**, Elaheh Mirhadi, Fatemeh Gheybi, Anis Askarizadeh, Mahmoud Reza Jaafari, Seyedeh Hoda Alavizadeh, " Engineered hybrid carbon nanohorns-lipid platforms for the delivery of cisplatin to the colorectal cancer", Journal of Drug Delivery Science and Technology, 100-106101, https://doi.org/10.1016/j.jddst.2024.106101

2024 Seyedeh Yasaman Rahnamaei Rahchamandi, Elahe Mirhadi, Fatemeh Gheybi, **Amin Kazemi-Beydokhti**, Mahmoud Reza Jaafari, Ebrahim Mostafavi, Prashant Kesharwani, Amirhossein Sahebkar, Seyedeh Hoda Alavizadeh, " Engineering carbon-based nanomaterials for the delivery of platinum compounds: An innovative cancer disarming frontier", Environmental Research, 262-119933, https://doi.org/10.1016/j.envres.2024.119933

2023 **Amin Kazemi-Beydokhti**, Fatemeh Neyestani, Mahmoud Farrokhi, " Simulation and Comparison of Two Flare Gas Recovery Units Using Liquid Ring and Centrifuge Compressors", Nashrieh Shimi va Mohandesi Shimi Iran, 41(4), https://www.nsmsi.ir/article_244562_en.html

2023 Mahmoud Farrokhi, Fatemeh Neyestani, **Amin Kazemi-Beydokhti**, Hamid Heydarzadeh-Darzi, " Simulation and Techno-Economic Analysis of the Integration of a Combined Heat and Power System in a Flare Gas Recovery Unit–Case Study: Tabriz Oil Refining Company (Northwest Iran)", Iranian Journal of Chemistry and Chemical Engineering, 42(7)(https://www.ijcce.ac.ir/article_697968.html)**.**

2022 Rasoul Shadnia, Mahsa Zarehparvar Shoja, **Amin Kazemi Beydokhti**, " The Effect of Dispersion Method of Nanotube Carbon on the Compressive Strength of Concrete", Journal of Concrete Structures and Materials, volume 7(1), pages 65-92(https://doi.org/10.30478/jcsm.2022.346473.1272).

2022 **A. Kazemi-Beydokhti,** H. Hassanpour-souderjani, " Physical and chemical surface modification of carbon nanotubes for adsorptive desulfurization of aromatic impurities in diesel fuel", Environmental Science and Pollution Research volume 29, pages33558–33571(https://doi.org/10.1007/s11356-022-18576-6)**.**

2022 M. Mahdavinezhad, **A. Kazemi-Beydokhti,** A. Sanati, and M.R. Malayeri, " Efficacy of f-MWCNT-CTAB nano-complex in low-salinity seawater EOR operation", journal of petroleum science and engineering, Volume 208, Part C, 109532. (https://doi.org/10.1016/j.petrol.2021.109532)

2021 M. Mahdavinezhad, **A. Kazemi-Beydokhti,** A. Sanati, and M.R. Malayeri, " Surface modification of functionalized multi-walled carbon nanotubes for EOR using low salinity seawater", Journal of Petroleum Research, Volume 31, 3-16. (https://dx.doi.org/10.22078/pr.2021.4458.3018)

2021 **Amin Kazemi-Beydokhti,** Fatemeh Neyestani, Mahmoud Farrokhi, "Simulation of Flare Gas Recovery Unit Using Liquid Ring and Centrifugal Compressors", Nashrieh Shimi va Mohandesi Shimi Iran (NSMSI), Article in press (https://www.nsmsi.ir/article_244562.html?lang=en).

2021 **A Kazemi-Beydokhti,** H Hassanpour Souderjani, "Oxidative desulfurization of petroleum products using decorated cobalt oxide on the surface of modified carbon nanotubes-ICHEC-1887", Iranian Journal of Chemical Engineering, 18(1), 36-45.(https://dx.doi.org/10.22034/ijche.2021.130364)

2020 Ali Asghar Shamabadi, Morteza Rezaee, **Amin Kazemi-Beydokhti**, "Microwave pressure sensor based on transmission response of a quarter-wavelength single stub microstrip line" Microwave and Optical Technology Letters (https://doi.org/10.1002/mop.32386).

2020 Rasoul Esmaeely Neisiany, Mohammad Saeid Enayati**, Amin Kazemi-Beydokhti**, Oisik Das and Seeram Ramakrishna, "Multilayered bio-based electrospun membranes: a potential porous media for filtration applications" Frontiers in Materials, 7(67) (https://doi.org/10.3389/fmats.2020.00067).

2019 **Amin Kazemi-Beydokhti**, Naeem Meyghani, Masoud Samadi, Seyed Hasan Hajiabadi, "Surface Modification of Carbon Nanotube: Effects on Pulsating Heat Pipe Heat Transfer" Chemical Engineering Research and Design, 152(30-35) (https://doi.org/10.1016/j.cherd.2019.09.023).

2019 **Amin Kazemi-Beydokhti**, Mahmoud Farrokhi, Enzo Menna, "Carbon nanotube nanofluid for the efficiency improvement in a CHP system: simulation and experimental investigation" Journal of Thermal Analysis and Calorimetry, pa:1-11 (https://doi.org/10.1007/s10973-019-08857-7).

2019 Seyed Hasan Hajiabadi, Hamed Aghaei, Mina Kalateh-Aghamohammadi, Ali Sanati, **Amin Kazemi-Beydokhti**, Feridun Esmaeilzadeh, "A comprehensive empirical, analytical and tomographic investigation on rheology and formation damage behavior of a novel nano-modified invert emulsion drilling fluid" Journal of Petroleum Science and Engineering, 181(106257) (https://doi.org/10.1016/j.petrol.2019.106257).

2019 Akhtari, J., R. Faridnia, H. Kalani, R. Bastani, M. Fakhar, H. Rezvan, and **A. K. Beydokhti** "Potent in vitro antileishmanial activity of a nanoformulation of cisplatin with carbon nanotubes against Leishmania major." Journal of Global Antimicrobial Resistance 16: 11-16 (https://doi.org/10.1016/j.jgar.2018.09.004).

2019 **Amin Kazemi-Beydokhti,** "Surface modification of carbon nanotube nanofluids for higher thermal efficacy of plate and shell and tube heat exchangers", Nashrieh Shimi va Mohandesi Shimi Iran (NSMSI), 38(3), 243-252 (https://www.nsmsi.ir/article_32592_en.html).

2018 **Amin Kazemi-Beydokhti**, Seyed Hasan Hajiabadi, "Rheological investigation of smart polymer/carbon nanotube complex on properties of water-based drilling fluids" Colloids and Surfaces A: Physicochemical and Engineering Aspects, 556, 23-29 (https://doi.org/10.1016/j.colsurfa.2018.07.058).

2018 **Amin Kazemi-Beydokhti**, Seyed Hasan Hajiabadi; Ali Sanati, "surface modification of carbon nanotubes as a key factor on rheological characteristics of water-based drilling muds" Iranian Journal of Chemistry and Chemical Engineering, 27(4) (https://dx.doi.org/10.30492/ijcce.2018.28219).

2016 **Amin Kazemi-Beydokhti**, Saeed Zeinali Heris, Mahmoud Reza Jaafari, "Investigation of different methods for cisplatin loading using single-walled carbon nanotube" Chemical Engineering Research and Design, 112(2), 56-63 (https://doi.org/10.1016/j.cherd.2016.06.006).

2016 **A. Kazemi Beydokhti**, S. Zeinali Heris, and M.R. Jaafari, "Thermal investigation and comparison of two medical nanofluid containing anticancer drug cisplatin." NANOSCALE 3(1) p. 39-45 (http://nanomeghyas.ir/article_46547.html?lang=en).

2016 **Amin Kazemi-beydokhti**, Hamed Azizi Namaghi, Mohammad Ali Haj Asgarkhani, Saeed Zeinali Heris, "Modeling and Optimization of Stability and Thermal Conductivity of Tin Dioxide Nanofluid. A Comparison Between Statistical Method and an Artificial Neural Network", Brazilian Journal of Chemical Engineering, 32 (4), 903-17 (https://doi.org/10.1590/0104-6632.20150324s00003518).

2015 **Amin Kazemi-Beydokhti**, Saeed Zeinali Heris, Mahmoud Reza Jaafari, "Experimental investigation of thermal conductivity of medical nanofluids based on functionalised single-wall carbon nanotube and conjugated cisplatin" Micro & Nano Letters, 5(10) , 241-247 (https://doi.org/10.1049/mnl.2014.0593).

2014 **Amin Kazemi-Beydokhti**, Saeed Zinali heris, Mohsen Tafaghodi, Mahmood Reza jaafari. "Microwave functionalized single-walled carbon nanotube as nanocarrier for the delivery of anticancer drug cisplatin: in vitro and in vivo evaluation" Journal of Drug Delivery Science and Technology, 24 (6), 572-578 (https://doi.org/10.1016/S1773-2247(14)50121-9).

2014 **A. KAZEMI-BEYDOKHTI**, S. ZEINALI HERIS, M. SHARIATY-NIASSAR, A. A. HAMIDI, N. MOGHADAM "Experimental Investigation of Parameters Affecting Nanofluids Effective Thermal Conductivity" Chemical Engineering Communications, 1(201), 593–611 (https://doi.org/10.1080/00986445.2013.782291).

2013 **Amin Kazemi-beydokhti**, Hamed Azizi namaghi, Saeed Zinali heris. "Identification of the Key Variables on Thermal Conductivity of CuO Nanofluid by a Fractional Factorial Design Approach" Numerical Heat Transfer: B, 64: 480–495 (https://doi.org/10.1080/10407790.2013.831674).

2012 **Amin kazemi-beydokhti** , Saeed Zeinali Heris. "Thermal optimization of combined heat and power (CHP) systems using nanofluids" Energy 44: 241-2 (https://doi.org/10.1016/j.energy.2012.06.033).

2012 S. Zeinali Heris, **A. Kazemi-Beydokhti**, S.H. Noie, S. Rezvan, "A numerical study on convective heat transfer of different nanofluids through square cross-section duct in laminar flow" Engineering Applications of Computational Fluid Mechanics, 6(1): 1–14 (https://doi.org/10.1080/19942060.2012.11015398).

2010 Sajjad Habibzadeh, **Amin Kazemi-Beydokhti**, Abbas Ali Khodadadi, Yadollah Mortazavi, Sasha Omanovic, Mojtaba Shariat-Niassar, "Stability and thermal conductivity of nanofluids of tin dioxide synthesized via microwave-induced combustion route" Chemical Engineering Journal, (2) 471-478 (https://doi.org/10.1016/j.cej.2009.11.007).

Conferences

2020 Hasan Hasanpur**, Amin Kazemi-Beydokhti**, " Oxidative desulfurization of petroleum products using oxidizing, cobalt oxide on surface modified carbon nanotubes", The 11th International Chemical Engineering Congress & Exhibition --IChEC 2020, Fuman, Iran.

2020 Hasan Hasanpur**, Amin Kazemi-Beydokhti**, Navid Qalenoei " Thermal simulation of distribution transformers for energy optimization and higher efficiency", The 11th International Chemical Engineering Congress & Exhibition --IChEC 2020, Fuman, Iran.

2020 **Amin Kazemi-Beydokhti**, Delaram Aliakbari, " The importance of surface modification of carbon nanohorns as a new nano-platform for targeted drug delivery", 3rd Nanomedicine & Nanosafety Conference, Tehran, Iran.

2019 Rasoul Esmaeely Neisiany, Mohamad Reza Naeimi rad, **Amin Kazemi-Beydokhti**," Insight into the Future of the Self-Healing Cementitious Composites", 5th National and 1th International Conference On Cement Industry and Oncoming Horizon, Tehran, Iran.

2019 **Amin Kazemi-Beydokhti**," Improvement of cement composite using surface modified carbon nanotubes", 5th National and 1th International Conference On Cement Industry and Oncoming Horizon, Tehran, Iran.

2018 **Amin Kazemi-Beydokhti**, Seyed Hasan Hajiabadi, Ali Mashhadi" Thermo and rheological importance of oily nanofluids in improving the energy efficiency of transformers", 12th International Energy Conference (IEC), Tehran, Iran.

2018 Seyed Hasan Hajiabadi, **Amin Kazemi-Beydokhti**," Performance of silver nanoparticles in the management of energy required to recycle the waste of drilling operation", 12th International Energy Conference (IEC), Tehran, Iran.

2017 **Amin Kazemi-Beydokhti**, Ali Khoshsima" The importance of surface modification of carbon nanotubes in the separation and thermal conductivity of nanofluid" 4th National Conference on Separation Science and Engineering, Babol, Iran.

2017 **Amin Kazemi-Beydokhti**, Mohammad Mahdey Khosravi" Evaluation of various nanocatalysts of refinery catalytic reforming unit to improve separation and octane number of reformate" 4th National Conference on Separation Science and Engineering, Babol, Iran.

2017 Ali Khoshsima **Amin Kazemi-Beydokhti,** "Thermodynamic Modeling of Micro-Emulsions Based on Nuclear Alkaline Alkanol Surfactants Using the PC-SAFT Equation" 4th National Conference on Separation Science and Engineering, Babol, Iran.

2017 **Amin Kazemi-Beydokhti**," The importance of using stimuli-responsive polymers in the targeted drug delivery of cancer drugs" 3rd International Nastaran symposium 2017, Mashhad, Iran.

2016 **Amin Kazemi-Beydokhti**," Application of nanofluids in thermal optimization of CHP systems", 11th International Energy Conference (IEC), Tehran, Iran.

2016 **Amin Kazemi-Beydokhti**, Ali Khoshsiam," Thermal investigation of medical nanofluid containing anticancer drug cisplatin", 2nd International Conference & 3rd National Conference on New Technologies Application in Engineering, Mashhah, Iran.

2016 Ali Khoshsiam, **Amin Kazemi-Beydokhti**, "Investigation of nanostructure microemulsion of biofuel systems", 2nd International Conference & 3rd National Conference on New Technologies Application in Engineering, Mashhah, Iran.

2016 Seyed Hasan Hajiabadi; Ali Sanati, **Amin Kazemi-Beydokhti**, "Investigation and comparison of different methods on biodiesel gas" 8th national conference on Environmental Engineering, Tehran, Iran.

2014 **Amin Kazemi-Beydokhti**, Saeed Zeinali Heris, Mahmoud Reza Jaafari," Comparision of three different protocols for the synthesis of one formulation based on functionalized single-wall carbon nanotube and conjugated cisplatin", 5th International Congress on Nanoscience & Nanotechnology (ICNN2014), Tehran, Iran.

2009 **Kazemi-Beydokhty. A**., Shariaty-Niassar, M, Hamidi, A.," Investigation of Effective Parameters on thermal conductivity of nanofluid", 5th Nanotechnology students Conference, Tehran, Iran.

2009 **Kazemi-Beydokhty, A**., Shariati-Niyassar, M., Hamidi, A. A., "A Comparative Thermal Survey on TiO2 and SnO2 Nanofluids' properties", the 6th international chemical engineering congress and exhibition, Kish, Iran.

2009 Habibzadeh, S., Khodadadi, A.A., **Kazami-Beydokhty, A**., Hosseinpour, N., Mortazavi, Y., "Colloidal Stability of Nanofluids of Tin Dioxide Synthesized via microwave-induced Combustion Route", 8th World Congress of Chemical Engineering, Canada.

Industrial Research Plans

- Targeted drug delivery of cisplatin using functionalized carbon nanotubes for cancer therapy, Ferdowsi University of Mashhad and Ministry of Health and Medical Education, Tehran, Iran, 2012-2015
  (**https://doi.org/10.1016/j.cherd.2016.06.006,**
  https://doi.org/10.1049/mnl.2014.0593,
- Research grant, Simulation and Techno-Economic Analysis of the Integration of a Combined Heat and Power System in a Flare Gas Recovery Unit, Tabriz Oil Refining Company, Iran, 2021
  (**https://www.ijcce.ac.ir/article_697968.html,**
  https://www.nsmsi.ir/article_244562.html?lang=en)

- Design and optimization of heat exchangers with CNT nanofluid technology, University of Tehran and National Iranian Oil Refining & Distribution Company, Tehran, Iran, 2009-2012.
  (https://www.nsmsi.ir/article_32592_en.html)

https://doi.org/10.1016/S1773-2247(14)50121-9,
http://nanomeghyas.ir/article_46547.html?lang=en**)**

➢ Design and construction of thermal simulator of electricity transmission and distribution oil transformers, Hakim Sabzevari University, Sabzevar, Iran, 2016-2017.
http://staff.hsu.ac.ir/en/persons/?perid=101000

➢ Oil nanofluid for higher thermal efficacy of transformer, Hakim Sabzevari University, Sabzevar, Iran, 2016-2017.
http://staff.hsu.ac.ir/en/persons/?perid=101000

Computer skills

Engineering Software:

- PDMS
- HYSYS
- ASPEN
- PVElite
- WAVE
- Autocade

Programming:

- MATLAB
- C++

Reviewer (ISI journals)

- Applied Energy (15 articles)
- Materials and Design (1 article)
- Journal of Environmental Management (1 article)
- Powder Technology (1 article)
- Iranian Journal of Chemistry and Chemical Engineering (8 articles)
- Engineering Applications of Computational Fluid Mechanics (1 article)
- Journal of Macromolecular Science, Part A: Pure and Applied Chemistry (1 article)
- Journal of Thermal Analysis and Calorimetry (1 article)
- Indian Journal of Pure & Applied Physics (1 article)
- Colloids and Surfaces A (2 article)