
Mohammad Reza Sardashti Birjandi Professor



Faculty : Engineering

Departments : chemical engineering

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Address : Dept.of chemical engineering , Faculty of Engineering,
University of Sistan and Baluchestan, Daneshgah Ave., Zahedan,
Iran.

Education

- ✓ B.Sc, Chemical Engineering,Sistan and Baluchestan University - 2008
- ✓ MS, Chemical Engineering Processes Design,Sistan and Baluchestan University - 2010
- ✓ PhD, Chemical Engineering,Sistan and Baluchestan University - 2018
- ✓ PhD, chemical Engineering,Sistan and Baluchestan University - 2018

Courses

- | | |
|--|--|
| 1. Technical drawing 1 | 2. fundamentals of Mineral Chemical Industries |
| 3. Engineering Matehmatics | 4. differential equations |
| 5. applied mathematics in chemical engineering | 6. Optimization |
| 7. Optimization | 8. General chemistry in chemical engineering |

Master Thesis

1. Experimental study of the effect of roughness, surface material on subcooled pool boiling heat transfer coefficient of pure water

محدثه بامري [Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Samane Hamzekhani, Mir mohammad Khalilipour langroudi, Bahareh Bidar, Arash Naderi]

نیمسال اول سال تحصیلی 1402-1403

2. Investigating effective factors in reducing energy consumption in the calcination process of magnesium carbonate with different purity.

محمد سیادت [Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Bahareh Bidar, Hamid Moghadam Deymeh, Davod Mohebbi Kalhori, Ghodratollah Roudini]

نیمسال دوم سال تحصیلی 1401

3. Investigating the possibility of replacing LPG feed with normal butane in the alkylation unit of Abadan Refinery

پرپریسا جلالی نیا [Farhad Shahraki, Mir mohammad Khalilipour langroudi, Mohammad Reza Sardashti Birjandi, Davod Mohebbi Kalhori, Bahareh Bidar, Alireza Shahraki]

نیمسال دوم سال تحصیلی 1401

4. Investigating new methods of caustic wastewater treatment in Adurant Phase 1 Refinery of South Pars Gas Complex (SPGC)

علیرضا شهسوار [Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Mir mohammad Khalilipour langroudi, Abdolreza Samimi, Ali Akbar Daya]

نیمسال دوم سال تحصیلی 1401

5. Prediction of control parameters of cement rotary kiln using machine learning models

سمیه منصوری [Farhad Shahraki, Jafar Sadeghi, Mohammad Reza Sardashti Birjandi, N N, Bahareh Bidar, Mortaza Zivdar, , Esmail Tohidlou]

نیمسال دوم سال تحصیلی 1401

6. Investigating the Effect of Temperature Changes in Static Naphthalene Refiners to Reduce Residual Naphthalene Oil

فرید کاظمی نورالدین وند [Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Bahareh Bidar, Mir mohammad Khalilipour langroudi, Jafar Sadeghi, Mahdi Shafiee Afarani]

نیمسال اول سال تحصیلی 1401-1402

7. Investigation of linear and non-linear programming on the refinery network structure

محدثه پودینه [Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Mir mohammad Khalilipour langroudi, Jafar Sadeghi, Davod Mohebbi Kalhori, Pooria Akbarzadeh]

نیمسال اول سال تحصیلی 1401-1402

8. Optimization of execution, management of pre-startup operations and start-up operations of area 40 of ethylene production using the Opercom method through ICAPS software

فرهاد ابراهیمی [Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Bahareh Bidar, Jafar Sadeghi, Mir mohammad Khalilipour langroudi, Seyed roohallah Mousavi]

نیمسال اول سال تحصیلی 1401-1402

9. Simulation of ABADAN Oil Refinery Sour Water Stripper Pre-Heated Heat Exchanger and its thermal performance improvement

شهاب شهرکی [Samira Payan, Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Jafar Sadeghi, Alireza Hossein Nezhad Devin, Moheb Ali Rahdar]

نیمسال اول سال تحصیلی 01-00

10. Investigation the environmental effect of using different type of fuels in industrial furnaces

مه لقا نوروزي حصاري, [Mir mohammad Khalilipour langroudi, Mohammad Reza Sardashti Birjandi, Jafar Sadeghi, Kiyanoosh Razzaghi, Hadi Bejari Valam]

نيمسال دوم سال تحصيلي 99-00

11. modeling and optimization of desalter unit Abadan refinery

فائزه ريگي, [Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Bahareh Bidar]

نيمسال اول سال تحصيلي 99-00

12. optimization of hydrogen network structure by lagrange method in refinery

پروانه ناروئي محمد, [Mir mohammad Khalilipour langroudi, Farhad Shahraki, Mohammad Reza Sardashti Birjandi]

نيمسال اول سال تحصيلي 98-99

13. Energy recovery the rotary kiln of cement Neyriz

محمدحسين نجف زاده, [Farhad Shahraki, Mohammad Reza Sardashti Birjandi]

نيمسال اول سال تحصيلي 98-99

14. energy analysis and economic assessment of gas turbine plant in combination with solar power plant and combind cycle

حافظ نوري كتج, [Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Bahareh Bidar]

نيمسال اول سال تحصيلي 98-99

15. Simulation and review of effective factors on the improvement of solar stills

فروغ دراني, [Farhad Shahraki, Mohammad Reza Sardashti Birjandi]

نيمسال دوم سال تحصيلي 97-98

Journals Papers

2025

1. Biomass to Sustainable Biofuels: A Novel Hybrid Process Integrating CO₂ CPU and High-Temperature Syngas for Methanol/DME Synthesis^{4E} Analyses with Multi-objective Optimization (NSGA-II)

Mohammad Mirani, Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Mehdi Bayat, Asiyeh Sheikhzadeh-Results in Engineering Volume: (27) 1 - 18

2. Sonotherapy Using Folic Acid-Ag-Bi₂O₃ Nanocomposites in 2D and 3D Cultural C540 Melanoma Cells

Mina Sarani, Paria Tamaddon, Hanieh Haghighi, Hossein Heli, Majid Darroudi, Arash Safari, Mohammad R Journal of Biomedical Physics and Engineering Volume: (15) 423 - 436

3. Optimization of Refinery Network Structure Using Mathematical Modeling

Mohadeseh Poudineh, Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Mir mohammad Khalilipour lang Volume: (35) 92 - 103

2024

4. Using Response Surface Methodology Approach to Modeling and Optimization of the Combustion Process in Cement Kiln

Somayeh Mansouri, Farhad Shahraki, Jafar Sadeghi, Mohammad Reza Sardashti Birjandi, Esmail Koohesta CHEMICAL ENGINEERING and TECHNOLOGY Volume: (47) 875 - 886

5. Experimental investigation of energy consumption and CO₂ emission in cement kiln in effect of replacement natural pozzolan

Farhad Shahraki, Somayeh Mansouri, Jafar Sadeghi, Esmail Koohestanian, Mohammad Reza Sardashti Birj IRANIAN JOURNAL OF CHEMISTRY and CHEMICAL ENGINEERING-INTERNATIONAL ENGLISH EDITION Volume: (43) 382 - 394

6. Modeling of an Industrial Incinerator for Refinery Wastes and Investigating the Effective Parameters for Performance Improvement

Mohsen Bahoosh, Bahareh Bidar, Mohammad Reza Sardashti Birjandi, Farhad Shahraki Volume: (22) 103 - 122

2023

7. بررسی مدیریت تولید و بهینه سازی گاز هیدروژن

Parvane Naroeimohammad, Mir mohammad Khalilipour langroudi, Farhad Shahraki, Mohammad Reza Sardashti Volume: (17) 19 - 38

8. Consequences modeling and determining of safe distance in the natural gas pressure reduction station using PHAST software (Case study: Borumi station in Ahvaz)

Ahmad Torfi Alivi, Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Mir mohammad Khalilipour langr

Volume: (15) 37 - 57

9. Simulation and Evaluation of Effective Solutions in Reducing Mercaptan and Sulfur in Liquid Gas Exit in Sulforex Unit

Mehdi Hamedi Siam, Farhad Shahraki, Mohammad Reza Sardashti Birjandi, Bahareh Bidar, Mohammad Esmaei

Volume: (18) 46 - 66

10. Energy recovery from the rotary kiln of white cement Neyriz

Mohammad Hossein Najafzade, Mohammad Reza Sardashti Birjandi, Farhad Shahraki, Somayeh Mansouri

Volume: (21) 201 - 228

11. بررسی تأثیر افزایش تعداد پله ها و افزودن بافل در آب شیرین کن خورشیدی پلکانی

, Mohammad Reza Sardashti Birjandi, Farhad Shahraki

Volume: (42) 313 - 325

12. شبیه سازی، کنترل و آنالیز حساسیت کوره های شکست حرارتی واحد الفین پتروشیمی مروارید

Benyamin Jahantigh, Mohammad Reza Sardashti Birjandi, Jafar Sadeghi, Farhad Shahraki

Volume: (42) 371 - 385

13. Simulation and Investigation of H₂S Adsorption Effects by Molecular Sieve 4A for Separation from Natural Gas

Aqil Khodabakhsh, Bahareh Bidar, Mohammad Reza Sardashti Birjandi, Farhad Shahraki

Volume: (15) 25 - 39

2022

14. One-dimensional Modelling and Optimisation of an Industrial Steam Methane Reformer

Mojtaba Sinaei Nobandegani, Tayebeh Darbandi, , Mohammad Reza Sardashti Birjandi, Farhad Shahraki, L

CHEMICAL AND BIOCHEMICAL ENGINEERING QUARTERLY Volume: (35) 369 - 379

15. Modeling and Optimization of the Bubble Detachment Diameter for a Pool Boiling System

Samane Hamzekhani, Mohammad Reza Sardashti Birjandi, Farhad Shahraki

CHEMICAL ENGINEERING and TECHNOLOGY Volume: (45) 1036 - 1047

16. بهینه سازی شبکه هیدروژن با استفاده از مدیریت دی اکسیدکربن

Parvane Naroeimohammad, Mir mohammad Khalilipour langroudi, Farhad Shahraki, Mohammad Reza Sardashti

Volume: (32) 108 - 123

17. Stable and Dynamic Simulation of Gas Sweetening Unit by Alternative Solvent

Zahra Zandi lak, Mohammad Reza Sardashti Birjandi, Farhad Shahraki, Jafar Sadeghi

Volume: (14) 57 - 73

18. Coupled simulation of convection section and the fluid flow in the furnace tubes H-151 of Distillation Unit of Esfahan Refinery by CFD

Fatemeh Karimiyan, Mohammad Reza Sardashti Birjandi, Farhad Shahraki

Volume: (20) 189 - 205

19. Dynamic Simulation and Investigation of Changes in Operating Parameters on the Amount of Sulfur Produced in the SRU Unit - a Case Study of the No 1 Refinery of South Pars Gas Complex

Alireza Shahsavari, Alireza Binaee, Mohammad Reza Sardashti Birjandi, Farhad Shahraki, Jafar Sadeghi

Volume: (9) 57 - 75

2021

20. Investigation of the Impact of Salt Water Depth on Stair Solar Desalination Using Comsol Software

, , Mohammad Reza Sardashti Birjandi, Farhad Shahraki

Volume: (12) 58 - 70

21. Simulation and Performance Improvement of Mercaptan Removal Unit of South Pars Gas Company by designing a new process cycle

Reza Seyed abadi, Bahareh Bidar, Mohammad Reza Sardashti Birjandi, Farhad Shahraki

Volume: (13) 17 - 36

2020

22. Simulation and optimization of sulfur recovery unit in Ilam gas refinery by response surface methodology

Asma Taherinia, Farhad Shahraki, Mir mohammad Khalilipour langroudi, Mohammad Reza Sardashti Birjand

Volume: (11) 19 - 32

23. Investigating efficiency improvement in sulfur recovery unit using process simulation and numerical modeling

Farhad Fazlollahi, Sajjad Asadizadeh, Milad Ahmadi Khoshooei, Mohammad Reza Sardashti Birjandi, Maji

Oil and Gas Science and Technology-Revue d IFP Energies nouvelles Volume: (76) 1-18 - 9-18

2019

24. Hydrogen and CO2 Management in the Refinery with Fuzzy Multiobjective Nonlinear Programming

Mohammad Reza Sardashti Birjandi, Farhad Shahraki, Kiyanoosh Razzaghi

CHEMICAL ENGINEERING and TECHNOLOGY Volume: (42) 1941 - 1951

25. investigation the effective factors to improve the performance of catalytic conversion unit

Ehsan Ghofran Mozaffar, Mohammad Reza Sardashti Birjandi, Farhad Shahraki

Volume: (13) 5 - 31

2023

1. Optimization of Sulfur Recovery Unit of Abadan Refinery using Response Surface Method (RSM)

The 12th International Chemical Engineering Congress Exhibition (IChEC 2023)

, Bahareh Bidar, Mohammad Reza Sardashti Birjandi, Farhad Shahraki

2. Improving the Process Performance of the Reverse Osmosis (RO) Unit of Abadan Oil Refinery by Changing the Membrane

The 12th International Chemical Engineering Congress Exhibition (IChEC 2023)

, Bahareh Bidar, Mohammad Reza Sardashti Birjandi, Farhad Shahraki

2021

3. Investigation and simulation of convection section of a refinery distillation unit furnace with CFD

CHISA 2021 VIRTUALLY - 24th International Congress of Chemical and Process Engineering

Mohammad Reza Sardashti Birjandi, Farhad Shahraki, Kiyanoosh Razzaghi, Fatemeh Karimiyan, Tayebeh Darbandi

2019

4. Adsorption Process Simulation in Natural Gas Mercaptan Removal Unit and Study on the effects of Operational Variables

The 6th IRANIAN NATIONAL ZEOLITE CONFERENCE

Reza Seyed abadi, Farhad Shahraki, Bahareh Bidar, Mohammad Reza Sardashti Birjandi

Executive activities

مدیر گروه آموزشی مهندسی شیمی

from 1403/11/02 - now

مشاوره دانشجویان کارشناسی

from 1403/07/01 - to 1403/11/05

مشاوره دانشجویان کارشناسی

from 1402/11/21 - to 1403/04/04

مشاوره دانشجویان کارشناسی

from 1402/07/01 - to 1402/11/05

مدیر مسئول مجله chemical process design

from 1401/10/28 - now