Iftikhar Ahmad

Associate Professor

School of Chemical & Materials Engineering

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Contact: 519085510
LinkedIn:

About

Dr. Iftikhar Ahmad is working as Associate Professor in the School of Chemical & Materials Engineering. Dr. Iftikhar Ahmad has a PhD in Chemical Engineering. Dr. Iftikhar Ahmad has published 48 research articles & conference papers having a citation count of 470, carried out 4 projects and filed 0 intellectual property.

Qualifications

PhD in Chemical Engineering 2011 - 2014
Kyoto University , Pakistan

MS in Process Systems Engineering 2009 - 2011
Kyoto University , Japan

MS in Chemical Engineering 2005 - 2008
UET Peshawar , Pakistan

BS in Chemical Engineering 2001 - 2005
UET Peshawar , Pakistan

F.Sc in Pre-Engineering 1997 - 2000
BISE, Peshawar , Pakistan

Experience

Associate Professor 2019- Present
School of Chemical & Materials Engineering

Assistant Professor 2014 - 2019
School of Chemical & Materials Engineering

Awards

Outstanding Paper of the 2015
Outstanding Paper of the Year 2014 Award from The Society of Chemical Engineers, Japan.

ORIC Innovation Award
ORIC Innovation Award at 3rd National Conference on Sustainability in Process Industries (SPI-16), Peshawar.

Won NRPU grants
Won NRPU grant in 2017 for research project on “Uncertainty Quantification for Efficient Process Design and Operation of Naphtha Reforming Process”

Member of IPC PSE 2021
Member of the International Program Committee (IPC) for PSE 2021 Kyoto, Japan. This PSE symposium is a triennial international conference series on process systems engineering. It is the pioneering events’ series that formally introduced the term PSE in 1982.

Professional Memberships

PEC Since 2018

Research Projects

National Projects

Plant-Wide Energy Analysis of Petroleum Refinery Process: An Integrated Framework of Energy Analysis, Uncertainty Analysis and Process Optimization 2019

Funding Agency: HEC
Amount: PKR 3,790,000.00
Status: Completed

Uncertainty Quantification for Efficient Process Design and Operation of Naphtha Reforming Process 2017

Funding Agency: HEC
Amount: PKR 1,870,000.00
Status: Completed

International Projects

Industry Projects

National Projects

Techno-Economic Assessment Study of Coal Gasification Project for Thar Coal 2023

Client: Policy Research Institute For Equitable Development (PRIED)
Amount: PKR 1,350,000.00
Status: Approved_inprocess

Implementation of an Integrated Energy Management Systems in Fazal Steel Manufacturing Plant 2021

Client: Fazal Steels Pvt Limited
Amount: PKR 1,373,000.00
Status: Approved_inprocess

International Projects

Research Articles

Experimental validation and optimization of bendable linear shaped charges with degressive explosive thickness for aerospace and defense applications 2025

Muhammad Soulaman Khan Muhammad Ahsan Sarah Farrukh Iftikhar Ahmad Erum Pervaiz Abdul Qadeer Malik
Journal of Energetic Materials, 1-33
Impact Factor: 1.700 | **Quartile:** 3
DOI: https://doi.org/10.1080/07370652.2025.2495558

Quantification of Impact of Uncertainty on Emissions in a Cement Manufacturing Plant: Surrogate Modeling-Based Approach 2025

Muhammad Usman Iftikhar Ahmad Manabu Kano Farooq Ahmad Muhammad Ahsan
ACS Omega, Volume:10, Issue:9, Pages 9453-9462
Impact Factor: 3.700 | **Quartile:** 2
DOI: https://doi.org/10.1021/acsomega.4c10194

Artificial intelligence assisted prediction of optimum operating conditions of shell and tube heat exchangers: A grey-box approach 2024

Zahid Ullah Iftikhar Ahmad Abdul Samad Husnain Saghir Farooq Ahmad Manabu Kano Hakan Caliskan Nesrin Caliskan Hiki Hong
CAAI Transactions on Intelligence Technology, Pages 1-10
Impact Factor: 8.400 | **Quartile:** 1 | **Citations:** 5
DOI: https://doi.org/10.1049/cit2.12393

Grey-box modelling for estimation of optimum cut point temperature of crude distillation column 2024

Junaid Shahzad Iftikhar Ahmad Muhammad Ahsan Farooq Ahmad Husnain Saghir Manabu Kano Hakan Caliskan Hiki Hong
CAAI Transactions on Intelligence Technology, Pages 1-15
Impact Factor: 8.4 | **Quartile:** 1 | **Citations:** 1
DOI: https://doi.org/10.1049/cit2.12386

Modelling and Optimization of an existing Onshore Gas Gathering Network using PIPESIM 2024

Iftikhar Ahmed Aditya Prana Iswara Shahbaz Abbas Fahim Qaisar Jamal Iftikhar Ahmad Syed Tasweer Hussain Shah Afshan Naseem
Heliyon, Volume 10, Issue 15, Article Number e35006
Impact Factor: 3.400 | **Quartile:** 1 | **Citations:** 1
DOI: https://doi.org/10.1016/j.heliyon.2024.e35006

A data-driven multi-objective optimization approach for enhanced methanol yield and exergy loss minimization in direct hydrogenation of CO2 2024

Abdul Samad Husnain Saghir Abdul Mussawir Iftikhar Ahmad Hakan Caliskan

Applied Thermal Engineering, Volume 251, Article Number 123517

Impact Factor: 6.100 | **Quartile:** 1 | **Citations:** 10

DOI: https://doi.org/10.1016/j.applthermaleng.2024.123517

Integrative CFD and AI/ML-based modeling for enhanced alkaline water electrolysis cell performance for hydrogen production 2024

Abdullah Sirat Sher Ahmad Iftikhar Ahmad Nouman Ahmad Muhammad Ahsan

International Journal of Hydrogen Energy, Volume 83, Pages 1120-1131

Impact Factor: 8.100 | **Quartile:** 1 | **Citations:** 5

DOI: https://doi.org/10.1016/j.ijhydene.2024.08.184

Plant Wide Modelling and Thermodynamic Optimization of a Petroleum Refinery for Improvement Potentials 2024

Adil Sana Iftikhar Ahmad Husnain Saghir Manabu Kano Hakan Caliskan Hiki Hong

Process Safety and Environmental Protection, Volume 188, Pages 64-72

Impact Factor: 6.900 | **Quartile:** 1 | **Citations:** 4

DOI: https://doi.org/10.1016/j.psep.2024.05.006

Prediction and optimization of emissions in cement manufacturing plant under uncertainty by using artificial intelligence-based surrogate modeling 2024

Muhammed Usman Iftikhar Ahmad Muhammad Ahsan Hakan Caliskan

Environment Development and Sustainability, Pages 1-25

Impact Factor: 4.700 | **Quartile:** 2 | **Citations:** 2

DOI: 10.1007/s10668-024-05068-5

Prediction and optimisation of gasoline quality in petroleum refining: The use of machine learning model as a surrogate in optimisation framework 2024

Husnain Saghir Iftikhar Ahmad Manabu Kano Hakan Caliskan Hiki Hong

CAAI Transactions on Intelligence Technology, Pages 1-14

Impact Factor: 8.400 | **Quartile:** 1 | **Citations:** 2

DOI: https://doi.org/10.1049/cit2.12324

Analysis of processed natural gas injection on hydrate formation in high pressure refrigerated condensate lines 2024

Iftikhar Ahmed Shahbaz Abbas Fahim Qaiser Jamal Iftikhar Ahmad Afshan Naseem Abdul Malik Tahir

Heliyon, Volume 10, Issue 4, Article Number; e25811

Impact Factor: 4.0 | **Quartile:** 2 | **Citations:** 1

DOI: 10.1016/j.heliyon.2024.e25811

Artificial intelligence based prediction of optimum operating conditions of a plate and fin heat exchanger under uncertainty: A gray-box approach 2023

Jihad Salah Khan Iftikhar Ahmad Usman Khan Jadoon Abdul Samad Husnain Saghir Manabu Kano Hakan Caliskan

International Journal of Heat and Mass Transfer, Volume 217, Article Number 124653

Impact Factor: 5.2 | **Quartile:** 1 | **Citations:** 9

DOI: https://doi.org/10.1016/j.ijheatmasstransfer.2023.124653

Prediction and optimization of exergetic efficiency of reactive units of a petroleum refinery under uncertainty through artificial neural network-based surrogate modeling 2023

Abdul Samad Iftikhar Ahmad Manabu Kano Hakan Caliskan

Process Safety and Environmental Protection, Volume 177, Pages 1403-1414

Impact Factor: 7.8 | **Quartile:** 1 | **Citations:** 13

DOI: https://doi.org/10.1016/j.psep.2023.07.046

Thermodynamic analysis of cumene production plant for identification of energy recovery potentials 2023

Abdul Samad Husnain Saghir Iftikhar Ahmad Farooq Ahmad Hakan Caliskan

Energy, Volume 270, Article Number 126840

Impact Factor: 8.9 | **Quartile:** 1 | **Citations:** 10

DOI: https://doi.org/10.1016/j.energy.2023.126840

Prediction of optimum operating conditions of a furnace under uncertainty: An integrated framework of artificial neural network and genetic algorithm 2022

Muzammil Khan Iftikhar Ahmad Muhammad Ahsan Manabu Kano Hakan Caliskan
Fuel, Volume 330, Article Number 125563
Impact Factor: 8.035 | **Quartile:** 1 | **Citations:** 20
DOI: https://doi.org/10.1016/j.fuel.2022.125563

An integrated approach of artificial neural networks and polynomial chaos expansion for prediction and analysis of yield and environmental impact of oil shale retorting process under uncertainty 2022
Hasan Qayyum Chohan Iftikhar Ahmad Nisar Mohammad Davide Manca Hakan Caliskan
Fuel, Volume 329, Article Number 125351
Impact Factor: 8.035 | **Quartile:** 1 | **Citations:** 5
DOI: https://doi.org/10.1016/j.fuel.2022.125351

An intelligent sensing system for estimation of efficiency of carbon-capturing unit in a cement plant 2022
Usman Khan Jadoon Iftikhar Ahmad Tayyaba Noor Manabu Kano Hakan Caliskan Muhammad Ahsan
Journal of Cleaner Production, Volume 377, Article Number 134359
Impact Factor: 11.1 | **Quartile:** 1 | **Citations:** 11
DOI: https://doi.org/10.1016/j.jclepro.2022.134359

Comparative hydrodynamics study of fluidized bed gasifier incorporating static and rotating air distributor plates: A CFD approach 2022
Naveed Raza Muhammad Ahsan Muhammad Taqi Mehran Salman Raza Naqvi Iftikhar Ahmad
Powder Technology , Volume 405, Article Number 117500
Impact Factor: 5.134 | **Quartile:** 1 | **Citations:** 10
DOI: https://doi.org/10.1016/j.powtec.2022.117500

Process modeling and simulation of ethylene oxide production by implementing pinch and cost analysis 2022
Muhammad Mubashir Muhammad Ahsan Iftikhar Ahmad Muhammad Nouman Aslam Khan
Ain Shams Engineering Journal, Volume 13, Issue 3, Pages 101585 (1-9)
Impact Factor: 3.180 | **Quartile:** 2 | **Citations:** 8
DOI: https://doi.org/10.1016/j.asej.2021.09.012

Process Modeling, Optimization and Cost Analysis of a Sulfur Recovery Unit by Applying Pinch Analysis on the Claus Process in a Gas Processing Plant 2021
Muhammad Arslan Zahid Muhammad Ahsan Iftikhar Ahmad Muhammad Nouman Aslam Khan
Mathematics , Volume 10, Issues 1, Article Number 88
Impact Factor: 2.592 | **Quartile:** 1 | **Citations:** 13
DOI: https:// doi.org/10.3390/math10010088

Design and Development of a Computational Tool for a Dialyzer by Using Computational Fluid Dynamic (CFD) Model 2021
Tuba Yaqoob Muhammad Ahsan Sarah Farrukh Iftikhar Ahmad
Membranes , Volume 11, Issues 12, Article Number 916
Impact Factor: 4.106 | **Quartile:** 2 | **Citations:** 3
DOI: https://doi.org/10.3390/membranes11120916

Model-Based Quality, Exergy, and Economic Analysis of Fluidized Bed Membrane Reactors 2021
Tabassam Nafees Adnan Ahmed Bhatti Usman Khan Jadoon Farooq Ahmad Iftikhar Ahmad Manabu Kano Brenno Castrillon Menezes Muhammad Ahsan Naveed ul Hasan Syed
Membranes , Volume 11, Issues 10, Article Number 765
Impact Factor: 4.106 | **Quartile:** 2 | **Citations:** 4
DOI: doi.org/10.3390/membranes11100765

Machine Learning Applications in Biofuels' Life Cycle: Soil, Feedstock, Production, Consumption, and Emissions 2021
Iftikhar Ahmad Adil Sana Manabu Kano Izzat Iqbal Cheema Brenno C. Menezes Junaid Shahzad Zahid Ullah Muzammil Khan Asad Habib
Energies , Volume 14(16), Article Number 5072
Impact Factor: 3.004 | **Quartile:** 3 | **Citations:** 26
DOI: 10.3390/en14165072

Computational Analysis of the Hydrodynamic Behavior for Different Air Distributor Designs of Fluidized Bed Gasifier 2021
Naveed Raza Muhammad Ahsan Muhammad Taqi Mehran Iftikhar Ahmad Salman Raza Naqvi
Frontiers in Energy Research, Volume 9, Issues 1, Article Number 692066
Impact Factor: 4.008 | **Quartile:** 2 | **Citations:** 17

DOI: https://doi.org/10.3389/fenrg.2021.692066

A comprehensive study on upgradation of pyrolysis products through co-feeding of waste tire into rice straw under broad range of co-feed ratios in a bench-scale fixed bed reactor 2021

Shoaib Raza Khan Muhammad Faheem Khokhar Zeshan Muhammad Zeeshan Iftikhar Ahmad

Biomass Conversion and Biorefinery , Pages 1-15

Impact Factor: 4.987 | **Quartile:** 1 | **Citations:** 18

DOI: doi.org/10.1007/s13399-021-01434-9

Lightweight Protective Configurations against Blast and Fragments Impact- Experimental and Numerical Studies 2020

Khurshid Ahmed Abdul Qadeer Malik Arshad Hussain Iftikhar Ahmad Iram Raza Ahmad

AIP Advances , Volume 10, Article Number 095221

Impact Factor: 1.548 | **Quartile:** 4 | **Citations:** 10

DOI: 10.1063/5.0022982

Drivers and Barriers for Efficient Energy Management Practices in Energy-Intensive Industries: A Case-Study of Iron and Steel Sector 2020

Iftikhar Ahmad Muhammad Salman Arif Izzat Iqbal Cheema Patrik Thollander Masroor Ahmed Khan

Sustainability , Volume 12(18), Article Number 7703

Impact Factor: 3.251 | **Quartile:** 2 | **Citations:** 14

DOI: https://doi.org/10.3390/su12187703

Computational Fluid Dynamics (CFD) Modeling and Simulation of Flow Regulatory Mechanism in Artificial Kidney Using Finite Element Method 2020

Tuba Yaqoob Muhammad Ahsan Arshad Hussain Iftikhar Ahmad

Membranes , Volume 10, Issue no. 7, Article 139

Impact Factor: 4.106 | **Quartile:** 1 | **Citations:** 11

DOI: 10.3390/membranes10070139

Gray-box Soft Sensors in Process Industry: Current Practice, and Future Prospects in Era of Big Data 2020

Iftikhar Ahmad Ahsan Ayub Manabu Kano Izzat Iqbal Cheema

Processes , Volume 8(2), Article Number 243

Impact Factor: 2.847 | **Quartile:** 3 | **Citations:** 45

DOI: https://doi.org/10.3390/pr8020243

Quantitative analysis of product quality of naphtha reforming process under uncertain process conditions 2019

Gulsayyar Ali Arshad Chughtai Iftikhar Ahmad Arshad Hussain Manabu Kano Muhammad Bilal

Chemical Engineering Communications, Pages 1-12

Impact Factor: 1.802 | **Quartile:** 3 | **Citations:** 5

DOI: DOI:10.1080/00986445.2019.1641488

Model Development and Exergy Analysis of a Microreactor for the Steam Methane Reforming Process in a CFD Environment 2019

Zia ur Rehman Iftikhar Ahmad Manabu Kano Jawad Mustafa

Entropy , Volume: 21, Issue: 4, Article Number: 399

Impact Factor: 2.494 | **Quartile:** 2 | **Citations:** 8

DOI: https://doi.org/10.3390/e21040399

Modeling of a Nickel-based Fluidized Bed Membrane Reactor for Steam Methane Reforming Process 2019

Mustafa Kamal Pasha Iftikhar Ahmad Jawad Mustafa Manabu Kano

Journal of the Chemical Society of Pakistan, Volume: 41, Issue: 2, Pages: 219-229

Impact Factor: 0.300 | **Quartile:** 4

DOI: https://www.jcsp.org.pk/Archive.aspx

Data-Based Prediction and Stochastic Analysis of Entrained Flow Coal Gasification under Uncertainty 2019

Iftikhar Ahmad Ahsan Ayub Nisar Mohammad Manabu Kano

Sensors , Volume: 19, Issue: 7, Article Number: 1626

Impact Factor: 3.275 | **Quartile:** 1 | **Citations:** 5

DOI: https://doi.org/10.3390/s19071626

Data-Based Sensing and Stochastic Analysis of Biodiesel Production Process 2019

Iftikhar Ahmad Ahsan Ayub Uzair Ibrahim Mansoor Khan Khattak Manabu Kano

Energies , Volume: 12, Issue: 1, Article Number: 63

Impact Factor: 2.702 | **Quartile:** 3 | **Citations:** 21
DOI: https://doi.org/10.3390/en12010063

An Artificial Intelligence Method for Energy Efficient Operation of Crude Distillation Units under Uncertain Feed Composition 2018

Muhammad Amin Durrani Iftikhar Ahmad Manabu Kano Shinji Hasebe

Energies , Volume: 11, Issue: 11, Article Number: 2993

Impact Factor: 2.707 | **Quartile:** 3 | **Citations:** 28
DOI: https://doi.org/10.3390/en11112993

Dimensions and Analysis of Uncertainty in Industrial Modeling Process 2018

Iftikhar Ahmad

JOURNAL OF CHEMICAL ENGINEERING OF JAPAN, NULL

Impact Factor: 0.627 | **Quartile:** 4 | **Citations:** 18
DOI: 10.1252/jcej.17we362

Exergy analysis and optimisation of naphtha reforming process with uncertainty 2018

Asad Ullah Akram Arshad Chughtai Manabu Kano Iftikhar Ahmad

International Journal of Exergy, Vol.26 No.3, Pages:247-262

Impact Factor: 1.130 | **Quartile:** 3 | **Citations:** 9
DOI: 10.1504/IJEX.2018.093138

Computational fluid dynamics based model development and exergy analysis of naphtha reforming reactors 2017

Jawad Mustafa Manabu Kano Iftikhar Ahmad Muhammad Ahsan

International Journal of Exergy, Vol. 24, No. 2-4, Pages:344-363

Impact Factor: 0.993 | **Quartile:** 4 | **Citations:** 9
DOI: 10.1504/IJEX.2017.087696

Prediction of Molten Steel Temperature in Steel Making Process with Uncertainty by Integrating Gray-Box Model and Bootstrap Filter 2014

Iftikhar Ahmad Manabu Kano Shinji Hasebe Hiroshi Kitada Noboru Murata

Journal of Chemical Engineering of Japan, Volume: 47, Issue: 11, Pages: 827-834

Impact Factor: 0.644 | **Quartile:** 4 | **Citations:** 16
DOI: 10.1252/jcej.14we067

Gray-box modeling for prediction and control of molten steel temperature in tundish 2014

Iftikhar Ahmad Manabu Kano Shinji Hasebe Hiroshi Kitada Noboru Murata

Journal of Process Control, Volume: 24, Issue: 4, Pages: 375-382

Impact Factor: 2.653 | **Quartile:** 1 | **Citations:** 47
DOI: 10.1016/j.jprocont.2014.01.018

Data-Based Ground Fault Diagnosis of Power Cable Systems 2013

Iftikhar Ahmad Hiroyuki MABUCHI Manabu Kano Shinji Hasebe Yoshikazu INOUE Hiroaki UEGAKI

SICE Journal of Control, Measurement, and System Integration, Volume 6, Issue 4, Pages 290-297, July 2013

Impact Factor: 0
DOI: 10.9746/jcmsi.6.290

High-Performance Prediction of Molten Steel Temperature in Tundish through Gray-Box Model 2013

Toshinori OKURA Iftikhar Ahmad Manabu Kano Shinji Hasebe Hiroshi KITADA Noboru Murata

ISIJ International , Volume: 53, Issue: 1, Pages: 76-80

Impact Factor: 1.069 | **Quartile:** 2 | **Citations:** 19
DOI: 10.2355/isijinternational.53.76

Conference Proceedings

Artificial Intelligence-Based Exergy analysis of Kiln and Calciner Sections of a Cement Plant under uncertainty 2024

Muhammad Usman Iftikhar Ahmad

1st International Conference on Innovative Engineering Sciences and Technological Research, ICIESTR 2024 - Proceedings, res.country(171,)

Citations: N/A

DOI: 10.1109/ICIESTR60916.2024.10798347

Sensitivity analysis of oil shale retorting process through sobol and fourier amplitude sensitivity test (FAST) 2021

Hasan Qayyum Chohan Iftikhar Ahmad

EUROCON 2021 - 19th IEEE International Conference on Smart Technologies, Proceedings, res.country(229,)

Citations: N/A

DOI: 10.1109/EUROCON52738.2021.9535609

Data based sensing of Shale Oil yield in Oil Shale Retorting process 2020

Hasan Qayyum Chohan Iftikhar Ahmad

3rd Pak-Turk International Conference ETSE2020, res.country(177,)

Citations: N/A

DOI: doi:10.1088/1757-899X/899/1/012009

Sensitivity Analysis of Entrained Flow Coal Gasification Process through Fourier Amplitude Sensitivity Test (FAST) and Sobol Techniques 2018

Iftikhar Ahmad Ahsan Ayub Muhammad Hamza Rasheed Fahad Ansari Nisar Mohammad

In 2018 International Conference on Applied and Engineering Mathematics (ICAEM) , res.country(177,)

Citations: N/A

DOI: 10.1109/ICAEM.2018.8536285

Virtual sensing of catalytic naphtha reforming process under uncertain feed conditions 2018

Dr. Iftikhar Ahmad Muhammad Bilal Gul Sayyar Ali Dr. Arshad Hussain

2018 International Conference on Computing, Mathematics and Engineering Technologies (iCoMET), res.country(177,)

Citations: 4

DOI: 10.1109/ICOMET.2018.8346447

An integrated mechanism of genetic algorithm and Taguchi method for cut-point temperatures optimization of crude distillation unit 2018

Muhammad Amin Durrani Dr. Iftikhar Ahmad Alcantara Avila

2018 International Conference on Computing, Mathematics and Engineering Technologies (iCoMET) , res.country(177,)

Citations: 3

DOI: 10.1109/ICOMET.2018.8346423

Editorial Activities

2020

Reviewed Papers for Journals

Impact Factor: 7.632

2020

Reviewed Papers for Journals

2020

Reviewed Papers for Journals