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International Researcher IDs

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Biography

Res. Asst. Dr. Mert Akin İNSEL completed his PhD with his thesis titled "Applications of Artificial Intelligence in Energy Production" at Yıldız Technical University, Department of Chemical Engineering in 2025. His studies focus on computer-aided modeling and simulation in chemical engineering.

Education

- I. Doctorate, Yıldız Technical University, Graduate School Of Natural And Applied Sciences, Department of Chemical Engineering, Turkey 2021 - 2025
- II. Postgraduate, Yıldız Technical University, Graduate School Of Natural And Applied Sciences, Department of Chemical Engineering, Turkey 2018 - 2021
- III. Undergraduate Double Major, Yıldız Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Mathematics Engineering, Turkey 2015 - 2020
- IV. Undergraduate, Yıldız Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Chemical Engineering, Turkey 2014 - 2018

Foreign Languages

- I. English, C2 Mastery

Dissertations

- I. Postgraduate, POST VISION 2023: SCENARIO DEVELOPMENT AND SYSTEMS DESIGN FOR TURKEY ENERGY SECTOR TILL 2033, Yıldız Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Chemical Engineering, 2021

Research Areas

Artificial Intelligence, Computer Learning and Pattern Recognition, Energy, Chemical Engineering and Technology, Mathematics, Optimization

- I. Research Assistant, Yildiz Technical University, Faculty Of Chemical And Metallurgical Engineering, Department Of Chemical Engineering, 2019 - Continues

Journal articles indexed in SCI, SSCI, and AHCI

- I. **Generalizable wind power estimation from historic meteorological data by advanced artificial neural networks**
İnsel M. A., Ozturk B., Yucel O., Sadikoglu H.
Renewable Energy, vol.246, 2025 (SCI-Expanded)
- II. **Predicting Prognosis of Early-Stage Mycosis Fungoides with Utilization of Machine Learning**
İsmail Mendi B., ŞANLI H., İNSEL M. A., Bayındır Aydemir B., Atak M. F.
Life, vol.14, no.11, 2024 (SCI-Expanded)
- III. **Unravelling poly(1-vinyl-1,2,4-triazole) hydrogels behaviors and enhancing 5-Fluorouracil delivery systems by utilizing a fuzzy modelling approach**
Pekel Bayramgil N., Insel M. A., Gonce Kocken H., Albayrak I., Karakuş S.
Physica Scripta, vol.99, no.8, 2024 (SCI-Expanded)
- IV. **Higher heating value estimation of wastes and fuels from ultimate and proximate analysis by using artificial neural networks**
İnsel M. A., Yucel O., Sadikoglu H.
Waste Management, vol.185, pp.33-42, 2024 (SCI-Expanded)
- V. **Development of Graphene Oxide-Based Anticancer Drug Combination Functionalized with Folic Acid as Nanocarrier for Targeted Delivery of Methotrexate**
Yanikoglu R., Karakas C. Y., Ciftci F., İNSEL M. A., Karavelioglu Z., Varol R., Yilmaz A., ÇAKIR R., ÜVET H., ÜSTÜNDAĞ C. B.
Pharmaceutics, vol.16, no.6, 2024 (SCI-Expanded)
- VI. **Optimizing waste-to-energy conversion: Unveiling the potential of unsupervised clustering through the new HOM classification system**
İnsel M. A., Yucel O., Sadıkoğlu H.
Sustainable Energy Technologies and Assessments, vol.65, 2024 (SCI-Expanded)
- VII. **Three-Dimensional-Printed GelMA-KerMA Composite Patches as an Innovative Platform for Potential Tissue Engineering of Tympanic Membrane Perforations**
Bedir T., Baykara D., Yildirim R., Çalıkoğlu Koyuncu A. C., Şahin A., Kaya E., Tinaz G. B., Insel M. A., Topuzoğulları M., Gündüz O., et al.
Nanomaterials, vol.14, no.7, 2024 (SCI-Expanded)
- VIII. **On Modeling of Surface Tension of CMC- α -Fe₂O₃ Nanoparticles by Fuzzy-Hybrid Approach: A Comparison Study**
Köçken H., Insel M. A., Temelcan G., Karakuş S., Albayrak F. İ.
CANADIAN JOURNAL OF CHEMICAL ENGINEERING, vol.101, no.11, pp.6446-6454, 2023 (SCI-Expanded)
- IX. **Serial progesterone levels more accurately predict the time of ovulation in subfertile women: a prospective cohort study**
Aydın T., Koroglu N., Albayrak N., Insel M. A.
Journal of Assisted Reproduction and Genetics, vol.40, no.8, pp.1897-1903, 2023 (SCI-Expanded)
- X. **Handling uncertainty in rheological properties of green eggshell nanocomposites by a fuzzy-hybrid modeling approach: a comparative study**
İnsel M. A., Karakuş S., Temelcan G., Köçken H., Albayrak F. İ.
Physica Scripta, vol.98, no.3, 2023 (SCI-Expanded)
- XI. **A comparison of machine learning algorithms for estimation of higher heating values of biomass and fossil fuels from ultimate analysis**

Yaka H., Insel M. A., Yucel O., Sadıkoğlu H.

Fuel, vol.320, 2022 (SCI-Expanded)

XII. Computational modeling and experimental verification of cathode catalyst layer on PEM fuel cells

Kil Ş., Özdemir O. K., Insel M. A., Sadıkoğlu H.

INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.47, no.62, pp.26665-26672, 2022 (SCI-Expanded)

XIII. Preparation, characterization and evaluation of a novel CMC/Chitosan- α -Fe₂O₃ nanoparticles-coated 17–4 PH stainless-steel foam

Karakuş S., Albayrak I., Ülgen N. B., Insel M. A., Kilislioğlu A.

Polymer Bulletin, vol.79, no.6, pp.4133-4151, 2022 (SCI-Expanded)

XIV. Characterization, optimization, and evaluation of preservative efficacy of carboxymethyl cellulose/hydromagnesite stromatolite bio-nanocomposite

Karakuş S., Insel M. A., Kahyaoğlu İ. M., Albayrak F. İ., Üstün Alkan F.

Cellulose, vol.29, no.7, pp.3871-3887, 2022 (SCI-Expanded)

XV. OPTIMIZATION OF MEGAKARYOCYTE TRAPPING FOR PLATELET FORMATION IN MICROCHANNELS

Baydar Atak G., Insel M. A., Oruc M. E., Sadıkoğlu H.

CHEMICAL INDUSTRY & CHEMICAL ENGINEERING QUARTERLY, vol.28, no.1, pp.19-28, 2022 (SCI-Expanded)

XVI. Preparation and characterization of carboxymethyl cellulose/poly (ethylene glycol) -rosin pentaerythritolester polymeric nanoparticles: Role of intrinsic viscosity and surface morphology

Karakuş S., İlgar M., Tan E., Kahyaoglu I. M., Tasaltin N., Albayrak I., Insel M. A., Kilislioglu A.

Surfaces and Interfaces, vol.21, 2020 (SCI-Expanded)

Articles Published in Other Journals

I. Assessment and determination of 2030 onshore wind and solar PV energy targets of Türkiye considering several investment and cost scenarios

İnsel M. A., Sadıkoğlu H., Melikoğlu M.

RESULTS IN ENGINEERING, vol.16, 2022 (ESCI)

Books

I. Energy Production from Coal

İnsel M. A., Sadıkoğlu H., Melikoğlu M.

in: Comprehensive Energy Systems, 2nd Edition, İbrahim Dinçer, Editor, Elsevier, Amsterdam, pp.1, 2025

II. Artificial Intelligence in Embedded Systems for Biomedical Applications

Karabekiroğlu S. N., Insel M. A., Uygunöz D., Kocaoğlu M.

in: Embedded Systems for Biomedical Applications, Malviya, Karakuş, Roy, Editor, Chapman & Hall/Crc Press, London, pp.190-210, 2025

III. Data-driven AI for information retrieval of biomedical images

İnsel M. A., Köçken H., Albayrak F. İ., Karakuş S.

in: Digital Transformation in Healthcare 5.0, Prasenjit Chatterjee, Dilbagh Panchal, Dragan Pamucar, Sharfaraz Ashemkhani Zolfani, Editor, Walter de Gruyter, Inc., Berlin, pp.307-331, 2024

IV. Quality Control in Chocolate Coating Processes by Image Processing: Determination of Almond Mass and Homogeneity of Almond Spread

Özçelik S., Insel M. A., Atici Ö. A., Celebi E., Baydar-Atak G., Sadıkoğlu H.

in: Advances in Intelligent Manufacturing and Service System Informatics, Zekâi Şen, Özer Uygun, Caner Erden, Editor, Springer Nature, Singapore, pp.69-80, 2023

V. 3D Graphene-Based Biosensors

İnsel M. A., Karabekiroğlu S. N., Karakuş S.

in: 3D Graphene, Ram K. Gupta, Editor, Springer Nature, Zug, pp.93-109, 2023

VI. Polymeric Materials for Nanosupercapacitors

İnsel M. A., Karakuş S.

in: Recent Advancements in Polymeric Materials for Electrochemical Energy Storage , Ram K. Gupta, Editor, Springer Nature, Singapore, pp.167-185, 2023

VII. The Ultrasonic-Assisted Synthesis of Locust Gum/PEG- Silver Nanoparticles and Its Mathematical Modeling of Rheological Parameters

Karakuş S., Insel M. A., Albayrak F. İ., Taşaltın N.

in: Foundation and Growth of Macromolecular Science: Advances in Research for Sustainable Development, Meegle S. Mathew, Jozef T. Haponiuk, Sabu Thomas, Editor, CRC, New York , New York, pp.1, 2023

Papers Presented at Peer-Reviewed Scientific Conferences

I. Simulation of Fixed and Fluidized Bed Gasifiers for Gasification of Lignite Coal and Biomass

Çakar M., Insel M. A., Yücel Ö., Sadıkoğlu H.

7th International Conference On Advances In Mechanical Engineering, İstanbul, Turkey, 24 - 26 December 2024, pp.942

II. Simulation And Control Design Of Continuous Stirred Tank Reactor

Taskin S. T., Insel M. A., Sadıkoğlu H.

7th 7th International Conference On Advances In Mechanical Engineering, İstanbul, Turkey, 24 - 26 December 2024, pp.582-591

III. Classification of Wastes by Utilizing Image Processing and Convolutional Neural Networks

İnsel M. A., Baş N., Yücel Ö., Sadıkoğlu H.

7th Eurasia Waste Management Symposium, İstanbul, Turkey, 21 - 23 October 2024, pp.1-8

IV. Wind Power Forecasting by using Advanced Artificial Neural Networks

İnsel M. A., Yücel Ö., Sadıkoğlu H.

7th International Conference on Engineering Sciences, Ankara, Turkey, 9 - 10 February 2024

V. Estimation of Biocrude Oil Yield by Machine Learning

Güngör Ş., Insel M. A., Sadıkoğlu H.

7th International Conference on Engineering Sciences, Ankara, Turkey, 9 - 10 February 2024

VI. Determination of pH Value Using Conventional pH Strips by Image Processing

Eid F., Insel M. A., Sadıkoğlu H.

6th International Eurasian Conference on Biological and Chemical Sciences , Ankara, Turkey, 11 - 13 October 2023, pp.325

VII. Progesterone level is an alternative marker to detect ovulation time in natural cycle frozen-thawed embryo transfers

Aydın T., Köroğlu N., Köse E., Albayrak N., Insel M. A.

39th Hybrid Annual Meeting of the ESHRE, Kobenhavn, Denmark, 25 June 2023, pp.181

VIII. Quality Control in Chocolate Coating Processes by Image Processing: Determination of Almond Mass and Homogeneity of Almond Spread

Özçelik S., Insel M. A., Atıcı Ö. A., Celebi E., Baydar Atak G., Sadıkoğlu H.

12th International Symposium on Intelligent Manufacturing and Service Systems, Sakarya, Turkey, 26 - 28 May 2023, pp.69-80, (Full Text)

IX. Assessment of Lydersen Method in Estimation of Critical Properties of Various Alcohols

Alhaloush R., Insel M. A., Sadıkoğlu H.

5th International Eurasian Conference on Biological and Chemical Sciences, Ankara, Turkey, 23 - 25 November 2022, pp.458, (Summary Text)

X. Detection of the Ovulation Time via Hormone Levels in the Peripheral Blood of the Subfertile Women with Regular Menstrual Cycle

Aydin T., Koroglu N., Albayrak N., Insel M. A.

ASRM-2022 Genes, Gametes, and Genetics, California, United States Of America, 22 - 26 October 2022, vol.118, no.4, pp.216, (Summary Text)

- XI. **Fabrication Methods of 2D Nanomaterials for Photocatalytic and Electrocatalytic Hydrogen Evolution: A Review**
Çakar M., Insel M. A., Sadıkoğlu H.
1st International Two-Dimensional Nanomaterials Conference, İstanbul, Turkey, 25 - 27 May 2022, pp.38
- XII. **Optimization of Surface Properties of K-Carrageenan/PVA/Eggshell Nanobiocomposites Coated 17-4 PH Stainless Steel Foam**
Karakuş S., Beköz Üllen N., Albayrak F. I., Insel M. A., Kilislioğlu A.
3rd International Conference on Physical Chemistry & Functional Materials, Malatya, Turkey, 22 - 24 September 2020, pp.25-32
- XIII. **Mathematical Modelling of Surface Behaviors of ZnO Nanoparticles Coated 17-4 PH Stainless Steel Foam**
Karakuş S., Albayrak F. I., Beköz Üllen N., Insel M. A., Kilislioğlu A.
3rd International Conference on Physical Chemistry & Functional Materials, Malatya, Turkey, 22 - 24 September 2020, pp.33-39
- XIV. **Fuzzy Modelling on Control of Heat Exchangers**
İnsel M. A., Albayrak F. İ., Köçken H.
International Conference on Mathematics and its Applications in Science and Engineering (ICMASE2020), Ankara, Turkey, 9 - 10 July 2020, pp.177-184
- XV. **Comparison of Nontraditional Optimization Techniques in Optimization of Shell and Tube Heat Exchanger**
İnsel M. A., Albayrak F. İ., Köçken H.
International Conference on Mathematics and its Applications in Science and Engineering (ICMASE2020), Ankara, Turkey, 9 - 10 July 2020, pp.185-196
- XVI. **Cost Analysis of Renewable Energy Technologies**
İnsel M. A., Sadıkoğlu H., Melikoğlu M.
International Conference on Advances in Mechanical Engineering, İstanbul, Turkey, 17 - 19 December 2019, pp.1426
- XVII. **Theoretical Investigation of Significant Parameters Affecting the Platelet Formation in Microchips**
Baydar Atak G., Insel M. A., Oruç M. E., Sadıkoğlu H.
ICESME, Girne, Cyprus (Kktc), 8 - 10 November 2019, pp.23
- XVIII. **Modeling of Parabolic Solar Collectors for Membrane Distillation**
İnsel M. A., Oruç M. E.
International Conference on Advances in Science and Arts Istanbul 2017, İstanbul, Turkey, 29 March 2017, pp.1
- XIX. **A weapon between science and mystery: An Archaeometric Review on Damascus Swords**
Ergül O., Çelik S. E., Insel M. A., Altın E. S., Saraç H.
41st International Symposium on Archaeometry (ISA), Kalamata, Greece, 16 - 20 May 2016, pp.295-296
- XX. **Investigation of properties of coins in Ottoman Empire between 1828-1922**
İnsel M. A., Çelik S. E., Altın E. S., Ergül O., Saraç H.
International Symposium on Archaeometry, Kalamata, Greece, 15 - 21 May 2016, pp.296, (Summary Text)
- XXI. **Investigations of Scientific Studies on Byzantine Jewellery**
Altın E. S., Çelik S. E., Insel M. A., Ergül O., Saraç H.
41st International Symposium on Archaeometry (ISA), Kalamata, Greece, 16 - 20 May 2016, pp.285-286

Funded Projects

-
- I. Turğut F., Doluca M., Insel M. A., TUBITAK Project, Optimization of PID and Artificial Neural Network Predictive

(NNP) Controller Design for a Shell and Tube Heat Exchanger, 2025 - 2026

- II. Akn A., Gerey E., Insel M. A., TUBITAK Project, Predicting the Solar Energy Production of Some Power Plants in Turkey Using Machine Learning Algorithms and Comparison of the Obtained Model Performances, 2024 - 2025
- III. Sadıkoğlu H., Insel M. A., Yücel Ö., TUBITAK Project, Prediction of Synthesis Gas and Exergy Data as a Result of Gasification of Lignite Coal and Biomass Mixtures by Machine Learning Algorithms, 2023 - 2024
- IV. Vurucuoğlu A., Bodur A., Insel M. A., TUBITAK Project, Simulation of Ice Cream Filling Process with Computational Fluid Dynamics Approach, 2023 - 2024
- V. Özçelik S., Atıcı Ö. A., Insel M. A., TUBITAK Project, Quality Control by Image Processing: Determination of Almond Mass and Homogeneity in Coating Applications with Chocolate Added Almond Pieces, 2023 - 2024

Peer Reviews in Scientific Publications

- I. ENERGY, SCI Journal, March 2024
- II. WASTE MANAGEMENT, SCI Journal, October 2023
- III. POLYMER BULLETIN, SCI Journal, October 2021

Scientific Research / Working Group Memberships

- I. Waste Biorefinery Technologies For Accelerating Sustainable Energy Processes (Wire), COST - European Cooperation in Science and Technology, Belçika, <https://www.cost.eu/actions/CA20127/>, 2023 - Continues
- II. Multidisciplinary Nanoscience Technology , İstanbul University-Cerrahpaşa, Türkiye, <https://avesis.istanbulc.edu.tr/arastirma-grubu/mnst>, 2021 - Continues

Metrics

Publication: 46
Citation (WoS): 92
Citation (Scopus): 107
H-Index (WoS): 4
H-Index (Scopus): 5

Invited Talks

- I. 1st International Two Dimensional Nanomaterial Conference , Conference, Maltepe University, Turkey, May 2022

Awards

- I. Insel M. A., Academic Performance Award, Yıldız Teknik Üniversitesi, March 2024
- II. Insel M. A., Academic Performance Award, Yıldız Teknik Üniversitesi, April 2023
- III. Insel M. A., 1st Rank in Department of Chemical Engineering (Undergraduate), Yıldız Teknik Üniversitesi (Yıldız Technical University), July 2018
- IV. Insel M. A., 2nd Rank in Faculty of Chemical Metallurgical (Undergraduate), Yıldız Teknik Üniversitesi, July 2018