

Res. Asst. Mert Akin İNSEL

Office Phone: [+90 212 383 4765](tel:+902123834765)

Email: makinsel@yildiz.edu.tr

Web: <https://avesis.yildiz.edu.tr/makinsel>

International Researcher IDs

ScholarID: p3jJcYwAAAAJ

ORCID: 0000-0002-4347-1190

Publons / Web Of Science ResearcherID: AAZ-4476-2020

ScopusID: 57218619024

Yoksis Researcher ID: 302209



Biography

Res. Asst. Mert Akin İNSEL graduated from YTU Chemistry Engineering undergraduate program in 2018 as the first in the department and second in the faculty (3.77/4.00). In 2020, he graduated from the Mathematical Engineering undergraduate program as his second major (3.62/4.00). In 2021, he completed his master's degree in Chemical Engineering at YTU (3.79/4.00). He currently is a Ph.D. candidate at YTU and works as a research assistant in the Department of Chemical Engineering. In his research, he works on the analysis and modeling of data obtained in energy applications under the supervision of Prof. Dr. Hasan Sadıkoğlu. He is also an active member of the Multidisciplinary Nanoscience Technology (M-NST) research group, where he publishes with researchers from several universities and different departments such as Chemistry, Mathematical Engineering, and Computer Engineering. His current aim is to implement the advanced data analysis methods in chemical engineering applications by specializing in machine learning and artificial intelligence.

Education Information

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

Academic Titles / Tasks

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

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **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)
- II. **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)
- III. **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)
- IV. **Optimizing waste-to-energy conversion: Unveiling the potential of unsupervised clustering through the new HOM classification system**
İnsel M. A., Yucel O., Sadikoğlu H.
Sustainable Energy Technologies and Assessments, vol.65, 2024 (SCI-Expanded)
- V. **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., Çalikoğlu 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)
- VI. **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)
- VII. **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)
- VIII. **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)
- IX. **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., Sadikoğlu H.
Fuel, vol.320, 2022 (SCI-Expanded)

- X. **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)
- XI. **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)
- XII. **Characterization, optimization, and evaluation of preservative efficacy of carboxymethyl cellulose/hydromagnesite stromatolite bio-nanocomposite**
Karakuş S., Insel M. A., Kahyaoglu İ. M., Albayrak F. İ., Üstün Alkan F.
Cellulose, vol.29, no.7, pp.3871-3887, 2022 (SCI-Expanded)
- XIII. **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)
- XIV. **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., Tasaltın 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 & Book Chapters

- I. **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
- II. **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
- III. **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
- IV. **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
- V. **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,

Refereed Congress / Symposium Publications in Proceedings

- I. **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
- II. **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
- III. **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
- IV. **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
- V. **Progesterone level is an alternative marker to detect ovulation time in natural cycle frozen-thawed embryo transfers**
Aydın T., Koroğlu N., Köse E., Albayrak N., Insel M. A.
39th Hybrid Annual Meeting of the ESHRE, Kobenhavn, Denmark, 25 June 2023, pp.181
- VI. **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
- VII. **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
- VIII. **Detection of the Ovulation Time via Hormone Levels in the Peripheral Blood of the Subfertile Women with Regular Menstrual Cycle**
Aydın 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
- IX. **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
- X. **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
- XI. **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

- XII. **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
- XIII. **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
- XIV. **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
- XV. **Theoretical Investigation of Significant Parameters Affecting the Platelet Formation in Microchips**
Baydar Atak G., İnsel M. A., Oruç M. E., Sadıkoğlu H.
ICESME, Girne, Cyprus (Kktc), 8 - 10 November 2019, pp.23
- XVI. **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
- XVII. **A weapon between science and mystery: An Archaeometric Review on Damascus Swords**
Ergül O., Çelik S. E., İnsel M. A., Altın E. S., Saraç H.
41st International Symposium on Archaeometry (ISA), Kalamata, Greece, 16 - 20 May 2016, pp.295-296
- XVIII. **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
- XIX. **Investigations of Scientific Studies on Byzantine Jewellery**
Altın E. S., Çelik S. E., İnsel M. A., Ergül O., Saraç H.
41st International Symposium on Archaeometry (ISA), Kalamata, Greece, 16 - 20 May 2016, pp.285-286

Supported Projects

- I. Akin A., Gerek E., İnsel M. A., TÜBİTAK 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
- II. Sadıkoğlu H., İnsel M. A., Yücel Ö., TÜBİTAK 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
- III. Vurucuoğlu A., Bodur A., İnsel M. A., TÜBİTAK Project, Simulation of Ice Cream Filling Process with Computational Fluid Dynamics Approach, 2023 - 2024
- IV. Özçelik S., Atıcı Ö. A., İnsel M. A., TÜBİTAK Project, Quality Control by Image Processing: Determination of Almond Mass and Homogeneity in Coating Applications with Chocolate Added Almond Pieces, 2023 - 2024

Scientific Refereeing

- 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: 39
Citation (WoS): 74
Citation (Scopus): 80
H-Index (WoS): 4
H-Index (Scopus): 4

Invited Talks

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

Awards

- I. İnsel M. A., Academic Performance Award, Yıldız Teknik Üniversitesi, March 2024
- II. İnsel 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