

Assoc. Prof. MERYEM SENA AKKUŞ

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: B-1838-2019

ScopusID: 57194592088

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Biography

Meryem Sena AKKUS is currently an Associate Professor at Ankara Yıldırım Beyazıt University, Department of Energy Systems Engineering (since 2023). She completed her doctorate at the Department of Chemical Engineering at Gazi University in Turkey in 2017. Her studies focused mostly on hydrogen technologies, synthesizing various boron compounds, and developing catalysts for use in the energy field.

Education

Doctorate, Gazi University, Fen Bilimleri Enstitüsü, Chemical Engineering, Turkey 2012 - 2017

Postgraduate, Gazi University, Fen Bilimleri Enstitüsü, Chemical engineering, Turkey 2010 - 2012

Undergraduate, Selcuk University, Faculty Of Engineering-Architecture, Chemical Engineering, Turkey 2005 - 2010

Foreign Languages

English, C2 Mastery

Dissertations

Doctorate, Hydrogen production conditions from sodium borohydride and sodium amidoborane, Gazi University, Fen Bilimleri Enstitüsü, Chemical Engineering, 2017

Postgraduate, Investigation of applicability of some amino and chloro antraquinone structured dyes in G-H liquid crystal displays, Gazi University, Fen Bilimleri Enstitüsü, Kimya Mühendisliği, 2012

Research Areas

Fuels and Combustion Technology

Academic Positions

Lecturer PhD, Ankara Yıldırım Beyazıt University, Rektörlük Merkezi, -, 2018 - Continues

Courses

Doctorate

Organic Electronic Systems and Applications , Doctorate, 2019 - 2020

Postgraduate

Organic Electronic Systems and Applications , Postgraduate, 2020 - 2021, 2019 - 2020

Undergraduate

general chemistry, Undergraduate, 2019 - 2020

Journal articles indexed in SCI, SSCI, and AHCI

- I. **TiO₂-coated thin films: A catalyst for sustainable hydrogen production from potassium borohydride**
Şeşe A., AKKUŞ M. S.
International Journal of Hydrogen Energy, 2025 (SCI-Expanded)
- II. **Examination of the catalytic effect of Ni, NiCr, and NiV catalysts prepared as thin films by magnetron sputtering process in the hydrolysis of sodium borohydride**
AKKUŞ M. S.
International Journal of Hydrogen Energy, vol.48, no.60, pp.23055-23066, 2023 (SCI-Expanded)
- III. **The Catalytic Performance of Nanorod Nickel Catalyst in the Hydrolysis of Lithium Borohydride and Dimethylamine Borane**
AKKUŞ M. S.
Catalysts, vol.13, no.3, 2023 (SCI-Expanded)
- IV. **Investigation of Hydrogen Production Performance Using Nanoporous NiCr and NiV Alloys in KBH4 Hydrolysis**
AKKUŞ M. S.
Energies, vol.15, no.24, 2022 (SCI-Expanded)
- V. **Modified Proline Metabolism and Prolidase Enzyme in COVID-19**
Ergin Tuncay M., Neselioglu S., Asfuroglu Kalkan E., Inan O., Sena Akkus M. S., Ates I., Erel Ö.
Lab Medicine, vol.53, no.5, pp.453-458, 2022 (SCI-Expanded)
- VI. **A sensitive indicator for the severity of covid-19: Thiol**
EREL Ö., NEŞELİOĞLU S., ERGİN TUNÇAY M., Fırat Oğuz E., Eren F., AKKUŞ M. S., Güner R., Ateş İ.
Turkish Journal of Medical Sciences, vol.51, no.3, pp.921-928, 2021 (SCI-Expanded)
- VII. **The effects of operating conditions on hydrogen production from sodium borohydride using Box-Wilson optimization technique**
ÖZKAN G., Akkus M. S., ÖZKAN G.
INTERNATIONAL JOURNAL OF HYDROGEN ENERGY, vol.44, no.20, pp.9811-9816, 2019 (SCI-Expanded)
- VIII. **Hydrogen production from the methanolysis of ammonia borane by Pd-Co/Al₂O₃ coated monolithic catalyst**
Murathan H. B., Özkan G., Akkuş M. S., Özgür D. Ö., Özkan G.
International Journal of Hydrogen Energy, vol.43, no.23, pp.10728-10733, 2018 (SCI-Expanded)
- IX. **The Hydrolysis of ammonia borane by using Amberlyst-15 supported catalysts for hydrogen generation**
Özgür D. Ö., Şimşek T., Özkan G., Akkuş M. S., Özkan G.
International Journal of Hydrogen Energy, vol.43, no.23, pp.10765-10772, 2018 (SCI-Expanded)
- X. **New insights on the mechanism of vapour phase hydrolysis of sodium borohydride in a fed-batch reactor**
Akkuş M. S., Murathan H. B., Özgür D. Ö., Özkan G., Özkan G.
International Journal of Hydrogen Energy, vol.43, no.23, pp.10734-10740, 2018 (SCI-Expanded)
- XI. **Comparison of Guest-Host Liquid Crystal Systems Doped with Azo or Anthraquinone Dyes**
Gürlük M., Altındış Abdulkadir H., Akkuş M. S., Akkurt F., Alicilar A.

Articles Published in Other Journals

- I. **Advances in Synthesis and Energy Applications of Conductive Polymers**
AKKUŞ M. S., YEŞİLATA B.
Journal of Optimization and Decision Making, vol.2, no.2, pp.373-280, 2023 (Peer-Reviewed Journal)
- II. **KBH4 hidrolizinde ince film nikel katalizörünü kullanarak hidrojen üretimi ve proses optimizasyonu**
AKKUŞ M. S.
ENGINEERING SCIENCES, vol.11, no.4, pp.1097-1102, 2022 (Peer-Reviewed Journal)
- III. **Yeni Nesil Dizileme Verilerinin Analizinde Bulut Teknolojisi**
KARABUDAK S., AKKUŞ M. S.
Nevşehir Bilim ve Teknoloji Dergisi, vol.11, no.1, pp.1-10, 2022 (Peer-Reviewed Journal)
- IV. **İleri Mühendislik Çalışmaları ve Teknolojileri Dergisi**
Karabudak S., Akkuş M. S.
İleri Mühendislik Çalışmaları ve Teknolojileri Dergisi, vol.1, no.2, pp.188-197, 2021 (Peer-Reviewed Journal)
- V. **Investigation of basic principles and technologies of solar cells**
Gündoğdu K., Özel M. T., AKKUŞ M. S.
Selcuk University Journal of Engineering Sciences, vol.20, no.2, pp.50-55, 2021 (Peer-Reviewed Journal)
- VI. **Hydrogen production by photocatalytic hydrolysis of ammonia borane: a review**
AKKUŞ M. S.
Selcuk University Journal of Engineering Sciences, vol.20, no.2, pp.46-49, 2021 (Peer-Reviewed Journal)
- VII. **Technologies based on energy savings for OLED devices**
Albaba M., AKKUŞ M. S.
Manas Journal of Engineering, vol.9, no.1, pp.55-65, 2021 (Peer-Reviewed Journal)
- VIII. **NEW GENERATION GROUNDBREAKING TECHNOLOGY: ORGANIC SUPERCONDUCTORS**
EREL M. S., AKKUŞ M. S.
Selçuk-Teknik Dergisi, pp.133-141, 2020 (Peer-Reviewed Journal)
- IX. **NEXT GENERATION DISPLAY TECHNOLOGY: TRANSPARENT ORGANIC LIGHT EMITTING DIODES**
Albaba M., AKKUŞ M. S.
Selçuk Teknik Dergisi, pp.168-180, 2020 (Peer-Reviewed Journal)
- X. **Biyoproses Çalışmalarında Deneysel Tasarım Yönteminin Uygulanması**
AKKUŞ M. S., KARABUDAK S.
İleri Mühendislik Çalışmaları ve Teknolojileri Dergisi, vol.1, no.2, pp.188-197, 2020 (Peer-Reviewed Journal)
- XI. **KORONAVİRÜS VE COVID-19**
AKKUŞ M. S.
Aksaray Üniversitesi Tıp Bilimleri Dergisi, vol.1, no.2, pp.15-20, 2020 (Peer-Reviewed Journal)
- XII. **Investigation of Synthesis of Sodium Aminodiborane in One Step and Its Reaction Kinetics**
AKKUŞ M. S., ÖZKAN G.
Molekul, vol.15, no.3, pp.219-227, 2020 (Scopus)

Papers Presented at Peer-Reviewed Scientific Conferences

- I. **Realization of hydrogen production from hydrolysis of various metal borahydrates using thin-film nickel and its alloys**
AKKUŞ M. S.
7 th International Webinar on Chemistry and Pharmaceutical Chemistry, Kingston, Canada, 23 - 24 February 2023,
(Summary Text)
- II. **Important roles of conductive polymers in energy harvesting and energy storage applications**

- AKKUŞ M. S., YEŞİLATA B.
6th International Conferences on Engineering Sciences, Ankara, Turkey, 3 - 04 February 2023, pp.59, (Summary Text)
- III. **Catalytic performance of catalysts from thin-film nickel and its alloys of different thickness in the hydrolysis of KBH4**
AKKUŞ M. S.
3rd International Virtual Conference on Pharmaceutical Chemistry & Drug Design, Londrina, Brazil, 26 - 27 January 2023, (Summary Text)
- IV. **Diğer - Uluslararası Davetli Konuşmacı Davetiyleleri**
AKKUŞ M. S.
Diğer - Uluslararası Davetli Konuşmacı Davetiyleleri, 16 December 2022, (Summary Text)
- V. **Investigation Of The Performance Of Ni Catalysts Prepared As Thin Films By Magnetron Sputtering For Sodium Borohydride Hydrolysis**
AKKUŞ M. S.
“6th International Hydrogen Technologies Congress”, Çanakkale, Turkey, 23 - 26 January 2022, pp.128-130, (Full Text)
- VI. **Investigation of the Basic Principles and Technologies of the Future Technology Lithium-Ion Batteries**
Özel M. T., Gündoğdu K., AKKUŞ M. S.
3rd International Hydrogen Energy Conference and Exhibitions (IHEC 2021), Ankara, Turkey, 14 - 16 June 2021, pp.57-58, (Full Text)
- VII. **A REVIEW OF HYDROGEN PRODUCTION BY PHOTOCATALYTIC HYDROLYSIS OF AMMONIA BORANE**
AKKUŞ M. S.
International Conference on Engineering Technologies (ICENTE'20), Konya, Turkey, 19 - 21 November 2020, pp.117, (Summary Text)
- VIII. **INVESTIGATION OF SOLAR CELL BASIC PRINCIPLES AND TECHNOLOGIES**
Gündoğdu K., Özel M. T., AKKUŞ M. S.
International Conference on Engineering Technologies (ICENTE'20), Konya, Turkey, 19 - 21 November 2020, pp.128, (Summary Text)
- IX. **AMOLED DISPLAYS AND THEIR CHALLENGES**
AL KARAWİ R., Albaba M., AKKUŞ M. S.
International Conference on Engineering Technologies (ICENTE'20), Konya, Turkey, 19 - 21 November 2020, pp.72, (Summary Text)
- X. **USAGE OF LED AND OLED IN FLEXIBLE DISPLAYS AND WEARABLE TECHNOLOGY**
AL KARAWI R., Albaba M., AKKUŞ M. S.
5. International on Material Science and Technology (IMSTEC 2020), Nevşehir, Turkey, 16 - 18 October 2020, pp.224, (Summary Text)
- XI. **New Generation Groundbreaking Technology Organic Superconductors**
EREL M. S., AKKUŞ M. S.
9th International Conference on Advanced Technologies (ICAT'20), İstanbul, Turkey, 10 - 12 August 2020, pp.130, (Summary Text)
- XII. **NEXT GENERATION DISPLAY TECHNOLOGY TRANSPARENT ORGANIC LIGHT EMITTING DIODES**
Albaba M., AKKUŞ M. S.
9th International Conference on Advanced Technologies (ICAT'20), İstanbul, Turkey, 10 - 12 August 2020, pp.124, (Summary Text)
- XIII. **A Review of Quantum Dot Based Nano-Biosensors**
AKKUŞ M. S., Çayköylü E. Ü.
8. International Drug Chemistry Conference, Antalya, Turkey, 27 February - 01 March 2020, (Full Text)
- XIV. **Investigation of The Effect of the Initial Reactant Molar Ratio on the Synthesis of Sodium Amidoborane and Its Hydrogen Capacity**
AKKUŞ M. S., ÖZKAN G., ÖZKAN G.

- 4th International Hydrogen Technologies Congress, Edirne, Turkey, 20 - 23 June 2019, pp.44-47, (Full Text)
- XV. **Power Law Kinetic Model For Synthesis of Sodium Amidoborane (NaNH₂BH₃)**
 AKKUŞ M. S., ÖZKAN G., ÖZKAN G.
 16th International Conference On Clean Energy (Icce-2018), Famagusta, Cyprus (Kktc), 9 - 11 May 2018, (Full Text)
- XVI. **High Yield Hydrogen Production From Sodium Borohydride By Non-Catalytic Steam Reforming: A Parametric Study**
 AKKUŞ M. S., MURATHAN H. B., Öncel Özgür D., ÖZKAN G., ÖZKAN G.
 2nd International Hydrogen Technologies Congress, Adana, Turkey, 15 - 18 March 2017, pp.57, (Summary Text)
- XVII. **Hydrogen Production from the Methanolysis of Ammonia Borane by Pd-Co/Al₂O₃ Coated Monolithic Catalyst**
 MURATHAN H. B., ÖZKAN G., AKKUŞ M. S., Öncel Özgür D., ÖZKAN G.
 2nd International Hydrogen Technologies Congress, Adana, Turkey, 15 - 18 March 2017, pp.53, (Summary Text)
- XVIII. **Hydrogen generation from the dehydrogenation of ammonia borane by using Amberlyst-15 supported catalysts**
 Öncel Özgür D., Şimşek T., ÖZKAN G., AKKUŞ M. S., ÖZKAN G.
 2nd International Hydrogen Technologies Congress, Adana, Turkey, 15 - 18 March 2017, pp.54, (Summary Text)
- XIX. **Energy storage key component ammonia borane: catalytic hydrolysis, and kinetic parameters**
 ÖZKAN G., Şimşek T., Öncel Özgür D., MURATHAN H. B., AKKUŞ M. S., ÖZKAN G.
 22th international congress of chemical and process engineering CHISA 2016, Prag, Czech Republic, 27 - 31 August 2016, (Summary Text)
- XX. **Amonyak boranın Pd-Co/ Al₂O₃ katalizörü eşliğinde katalitik metanolizi ile hidrojen üretimi ve kinetiği**
 MURATHAN H. B., AKKUŞ M. S., ÖZKAN G., ÖZKAN G.
 12. Ulusal Kimya Mühendisliği Kongresi, İzmir, Turkey, 23 - 26 August 2016, pp.55, (Summary Text)
- XXI. **Hidrojen Depolama Maddesi Olarak Sodyum Amido Boranın Sentez Koşullarının Belirlenmesi**
 AKKUŞ M. S., ÖZKAN G., ÖZKAN G.
 12. Ulusal Kimya Mühendisliği Kongresi, İzmir, Turkey, 23 - 26 August 2016, pp.174, (Summary Text)
- XXII. **Sodyum Borhidrürün Buhar Fazı Hidrolizinde Sıcaklık ve derişimin Hidrojen Verimine Etkisi**
 AKKUŞ M. S., ÖZKAN G., MURATHAN H. B., ÖZKAN G.
 12. Ulusal Kimya Mühendisliği Kongresi, İzmir, Turkey, 23 - 26 August 2016, pp.60, (Summary Text)
- XXIII. **Real time monitoring method for iron chelation therapy**
 EREL Ö., POLAT A., ALIŞIK M., ERGİN TUNÇAY M., AKKUŞ M. S., KOCA BİÇER C., YILMAZ F. M., AYÇİÇEK A., KOÇ A.
 36th World Congress of the International-Society-of-Hematology, Glasgow, England, 18 - 21 April 2016, vol.173, pp.160, (Summary Text)
- XXIV. **Demir şelasyon tedavisinin etkinliğinin saptanmasında, izlenmesinde ve tedavinin düzenlenmesinde yeni testler(imiz): UIBC-C, TIBC-C, FE-C VE %FE-C**
 EREL Ö., ERGİN TUNÇAY M., ALIŞIK M., AKKUŞ M. S., YILMAZ F. M., BİÇER C., POLAT A., KOÇ A., AYÇİÇEK A.
 41. Ulusal Hematoloji Kongresi, Antalya, Turkey, 21 - 24 October 2015, (Summary Text)
- XXV. **HİDROJEN DEPOLAMA MADDESİ OLARAK SODYUM AMİDOBORAN SENTEZİ ve DEPOLAMA VERİMLİLİĞİ**
 AKKUŞ M. S., Vural M., ÖZKAN G.
 27. Ulusal Kimya Kongresi, Çanakkale, Turkey, 23 - 28 August 2015, pp.300, (Summary Text)

Funded Projects

Akkuş M. S., Çelik S., Duran C., Özcan H., Toros S., TUBITAK Project, Yüksek Performanslı ve Uzun Ömürlü Perovskit Elektrotlu SOEC Hücresi Geliştirilmesi, 2025 - 2028

Metrics

Publication: 49

Citation (Scopus): 124

H-Index (Scopus): 6

Awards

Akkuş M. S., Workshop on Chemistry Undergraduate Students Research Project Training, Çomu And Tübitak-Bidep , July 2010

Akkuş M. S., The Chemical Engineering Undergraduate Honor Certificate , The Chemical Engineering Undergraduate Honor Certificate , June 2010