

## **Prof. HASAN MERDUN**

### **Personal Information**

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**Address:** Akdeniz Üniversitesi, Mühendislik Fakültesi, Çevre Mühendisliği Bölümü, 07058 ANTALYA.

### **International Researcher IDs**

ORCID: 0000-0002-6280-2004

Publons / Web Of Science ResearcherID: C-4293-2016

ScopusID: 6506563659

Yoksis Researcher ID: 200063

### **Education Information**

Doctorate, Clemson University, School Of Life Sciences, Fisheries And Agriculture, Crop And Soil Environmental Sciences, United States Of America 1996 - 2002

Masters (Non-Thesis), Clemson University, Faculty Of Engineering, Agricultural And Biological Engineering, United States Of America 1994 - 1996

Undergraduate, Ankara University, Ziraat Fakültesi, Tarımsal Yapılar Ve Sulama, Turkey 1988 - 1992

### **Foreign Languages**

English, C1 Advanced

### **Dissertations**

Doctorate, Using Macro to simulate preferential flow in structured and non-structured soils, Clemson University, School Of Life Sciences, Fisheries And Agriculture, Crop And Soil Environmental Sciences, 2002

### **Research Areas**

Environmental Engineering, Environmental Sciences, Mechanical Engineering, Energy, Renewable Energy Systems, Alternative Energy Resources, Hydrogen Technologies and Fuel Cells , Engineering and Technology

### **Academic Titles / Tasks**

Professor, Akdeniz University, Faculty of Engineering, Department of Environmental Engineering, 2014 - Continues

Associate Professor, Akdeniz University, Faculty of Engineering, Department of Environmental Engineering, 2010 - 2014

Associate Professor, Kahramanmaraş Sutcu Imam University, Faculty Of Agriculture, Department Of Agricultural Structures And Irrigation, 2008 - 2010

Research Assistant PhD, Kahramanmaraş Sutcu Imam University, Faculty Of Agriculture, Department Of Agricultural

Structures And Irrigation, 2003 - 2008

Research Assistant, Clemson University, Ziraat Fakültesi, Bitki Ve Toprak Çevre Bilimleri, 1999 - 2003

Research Assistant, Clemson University, Faculty of Engineering, İnşaat Mühendisliği, 1996 - 1999

Research Assistant, Clemson University, Faculty of Engineering, Ziraat Ve Biyoloji Bilimleri Mühendisliği, 1994 - 1996

Research Assistant, Kahramanmaraş Sutcu Imam University, Faculty Of Agriculture, Department Of Agricultural Structures And Irrigation, 1993 - 1994

## Academic and Administrative Experience

Akdeniz University, Faculty of Engineering, Çevre Mühendisliği, 2016 - Continues

Akdeniz University, Faculty of Engineering, Çevre Mühendisliği, 2010 - 2019

Akdeniz University, Faculty of Engineering, 2015 - 2016

Akdeniz University, Faculty of Engineering, Çevre Mühendisliği, 2012 - 2015

## Courses

Mühendislikte İstatistik, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2014 - 2015, 2013 - 2014, 2011 - 2012

İklim Değişikliği ve Çevresel Etkileri, Postgraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2015 - 2016, 2014 - 2015, 2013 - 2014

Enerji ve Çevre, Undergraduate, 2014 - 2015, 2013 - 2014

Çevre Yönetimi, Undergraduate, 2013 - 2014, 2011 - 2012

Hidroloji, Undergraduate, 2013 - 2014, 2012 - 2013

Çevresel Etki Değerlendirmesi, Undergraduate, 2013 - 2014, 2012 - 2013

## Advising Theses

MERDUN H., Biyokütleli hızlı piroliz parametrelerinin optimizasyonu ve katalizörün ürünlere etkileri, Doctorate, Z.BOUBACAR(Student), 2020

MERDUN H., Sera atıklarından hızlı piroliz ile elde edilen biyoyağın cevap yüzey yöntemi ile optimizasyonu, Postgraduate, C.ÇORBACIOĞLU(Student), 2020

MERDUN H., Sera atıklarından katalitik hızlı piroliz yöntemi ile elde edilen sıvı ürünün kalitesinin incelenmesi, Postgraduate, F.Seçil(Student), 2019

MERDUN H., Ters osmoz konsantre sularının denize deşarjının çevresel etkilerinin araştırılması, Postgraduate, M.Can(Student), 2018

MERDUN H., Organik atıkların hızlı pirolizi ile biyoyağ üretilmesi, Postgraduate, C.ERDOĞAN(Student), 2018

MERDUN H., Katalitik hızlı pirolizin biyoyağ verim ve kalitesine etkilerinin incelenmesi, Postgraduate, B.GÜZELÇİFTÇİ(Student), 2016

MERDUN H., Katalitik hızlı pirolizin biyoyağ verim ve kalitesine etkilerinin incelenmesi, Postgraduate, B.Güzelçiftçi(Student), 2016

MERDUN H., Biyobozunur atıklardan hızlı piroliz ile yakıt üretilmesi, Postgraduate, M.FARDİNPOOR(Student), 2016

## Jury Memberships

Doctorate, Tez Savunma Jürisi, Akdeniz Üniversitesi, June, 2020

Post Graduate, Tez Savunma Jürisi, Akdeniz Üniversitesi, May, 2019

Post Graduate, Tez Savunma Jürisi, Akdeniz Üniversitesi, May, 2019

Post Graduate, Tez Savunma Jürisi, Akdeniz Üniversitesi, May, 2018

Post Graduate, Tez Savunma Jürisi, Akdeniz Üniversitesi, May, 2018

Post Graduate, Tez Savunma Jürisi, Akdeniz Üniversitesi, May, 2017

Post Graduate, Yüksek Lisans Tez Savunması Jüri Üyeliği, Akdeniz Üniversitesi, May, 2015

Post Graduate, Yüksek Lisans Tez Savunması Jüri Üyeliği, Mühendislik Fakültesi, May, 2015

Post Graduate, Tez Savunma Jürisi, Kahramanmaraş Sütçü İmam Üniversitesi, May, 2010

Post Graduate, Tez Savunma Jürisi, Kahramanmaraş Sütçü İmam Üniversitesi, May, 2010

## **Published journal articles indexed by SCI, SSCI, and AHCI**

- I. **Deep learning-based modelling of pyrolysis**  
ÖZCAN A., Kasif A., SEZGİN İ. V., Catal C., Sanwal M., MERDUN H.  
Cluster Computing, vol.27, no.1, pp.1089-1108, 2024 (SCI-Expanded)
- II. **Pyrolysis and combustion of industrial hemp, coal and their blends for thermal analysis by thermogravimetric analysis/Fourier transform infrared spectrometer**  
MERDUN H., Yıldırım M.  
Waste Management and Research, 2024 (SCI-Expanded)
- III. **Production and characterization of bio-oil from catalytic fast pyrolysis of greenhouse vegetables wastes**  
Laouge Z. B., Karademir F. S., MERDUN H.  
BIOMASS CONVERSION AND BIOREFINERY, vol.13, no.14, pp.12737-12748, 2023 (SCI-Expanded)
- IV. **Fast pyrolysis of greenhouse waste into bio-oil and optimization of process conditions using response surface methodology**  
Laouge Z. B., Corbacioglu C., MERDUN H.  
BIOMASS CONVERSION AND BIOREFINERY, vol.13, no.11, pp.9807-9819, 2023 (SCI-Expanded)
- V. **Determination of the Risk on Human Health of Heavy Metals Contained by Ship Source Bilge and Wastewater Discharged to the Sea on the Mediterranean by Monte Carlo Simulation**  
Özkaynak Ö. H., İçemer G., MERDUN H.  
Sustainability (Switzerland), vol.14, no.14, 2022 (SCI-Expanded)
- VI. **Synergistic effects on co-pyrolysis and co-combustion of sludge and coal investigated by thermogravimetric analysis**  
Merdun H., Laouge Z. B., Çiğgin A. S.  
JOURNAL OF THERMAL ANALYSIS AND CALORIMETRY, vol.146, no.6, pp.2623-2637, 2021 (SCI-Expanded)
- VII. **Investigation of thermal behavior of pine sawdust and coal during co-pyrolysis and co-combustion**  
Laouge Z. B., MERDUN H.  
ENERGY, vol.231, 2021 (SCI-Expanded)
- VIII. **Kinetic and thermodynamic analyses during co-pyrolysis of greenhouse wastes and coal by TGA**  
MERDUN H., Laouge Z. B.  
RENEWABLE ENERGY, vol.163, pp.453-464, 2021 (SCI-Expanded)
- IX. **Optimization and characterization of bio-oil from fast pyrolysis of Pearl Millet and Sida cordifolia L. by using response surface methodology**  
LAOUGE Z. B., ÇIĞGIN A. S., MERDUN H.  
FUEL, vol.274, 2020 (SCI-Expanded)
- X. **Kinetic analysis of Pearl Millet (Pennisetum glaucum (L.) R. Br.) under pyrolysis and combustion to investigate its bioenergy potential**  
Laouge Z. B., MERDUN H.  
FUEL, vol.267, 2020 (SCI-Expanded)
- XI. **Pyrolysis and combustion kinetics of Sida cordifolia L. using thermogravimetric analysis**  
Laouge Z. B., MERDUN H.  
BIORESOURCETECHNOLOGY, vol.299, 2020 (SCI-Expanded)
- XII. **Products distribution of catalytic co-pyrolysis of greenhouse vegetable wastes and coal**

MERDUN H., SEZGİN İ. V.

Energy, vol.162, pp.953-963, 2018 (SCI-Expanded)

- XIII. **Using TDR and modeling tools to investigate effects of interactive factors on preferential flow and transport in field sandy clay soil**  
Merdun H.  
ENVIRONMENTAL EARTH SCIENCES, vol.71, no.4, pp.1821-1838, 2014 (SCI-Expanded)
- XIV. **Effects of Different Factors on Water Flow and Solute Transport Investigated by Time Domain Reflectometry in Sandy Clay Loam Field Soil**  
Merdun H.  
WATER AIR AND SOIL POLLUTION, vol.223, no.8, pp.4905-4923, 2012 (SCI-Expanded)
- XV. **Investigation of Interactive Effects on Water Flow and Solute Transport in Sandy Loam Soil Using Time Domain Reflectometry**  
Merdun H.  
SENSORS, vol.12, no.7, pp.9749-9772, 2012 (SCI-Expanded)
- XVI. **Self-organizing map artificial neural network application in multidimensional soil data analysis**  
Merdun H.  
NEURAL COMPUTING & APPLICATIONS, vol.20, no.8, pp.1295-1303, 2011 (SCI-Expanded)
- XVII. **Temporal Variation of Soil Moisture Under Alley Cropping System in Pistachio in Semi-arid Region of Turkey**  
Gundogan R., Merdun H., DEMIRKIRAN A. R., Hall N., Agturk R., Erol A., Ersahin S.  
INTERNATIONAL JOURNAL OF AGRICULTURE AND BIOLOGY, vol.12, no.4, pp.601-605, 2010 (SCI-Expanded)
- XVIII. **UTILIZATION OF TWO ARTIFICIAL NEURAL NETWORK METHODS IN SURFACE WATER QUALITY MODELING**  
Merdun H., ÇINAR Ö.  
ENVIRONMENTAL ENGINEERING AND MANAGEMENT JOURNAL, vol.9, no.3, pp.413-421, 2010 (SCI-Expanded)
- XIX. **Estimation of suspended sediment concentration by acoustic equations for soil sediment**  
Meral R., SMERDON A., Merdun H., Demirkiran A. R.  
AFRICAN JOURNAL OF BIOTECHNOLOGY, vol.9, no.2, pp.171-178, 2010 (SCI-Expanded)
- XX. **ARTIFICIAL NEURAL NETWORK AND REGRESSION TECHNIQUES IN MODELLING SURFACE WATER QUALITY**  
MERDUN H., ÇINAR Ö.  
ENVIRONMENT PROTECTION ENGINEERING, vol.36, no.2, pp.95-109, 2010 (SCI-Expanded)
- XXI. **Alternative methods in the development of pedotransfer functions for soil hydraulic characteristics**  
Merdun H.  
EURASIAN SOIL SCIENCE, vol.43, no.1, pp.62-71, 2010 (SCI-Expanded)
- XXII. **Solute movement in an intact soil core under different ponding heights**  
Tonguc F., Merdun H.  
EURASIAN SOIL SCIENCE, vol.42, no.13, pp.1497-1503, 2009 (SCI-Expanded)
- XXIII. **Effects of Tillage Systems on Wheat Yield and Residue in Turkey**  
Korucu T., Merdun H.  
JOURNAL OF ANIMAL AND VETERINARY ADVANCES, vol.8, no.10, pp.1973-1978, 2009 (SCI-Expanded)
- XXIV. **Application of an unsupervised artificial neural network technique to multivariant surface water quality data**  
ÇINAR Ö., Merdun H.  
ECOLOGICAL RESEARCH, vol.24, no.1, pp.163-173, 2009 (SCI-Expanded)
- XXV. **Effect of the Initial Soil Moisture Content on the Spatial Distribution of the Water Retention**  
Merdun H., Meral R., Demirkiran A. R.  
EURASIAN SOIL SCIENCE, vol.41, no.10, pp.1098-1106, 2008 (SCI-Expanded)
- XXVI. **Effect of irrigation frequency and amount on water use efficiency and yield of sesame (Sesamum indicum L.) under field conditions**  
UCAN K., KILLI F., GENCOGLAN C., Merdun H.

- FIELD CROPS RESEARCH, vol.101, no.3, pp.249-258, 2007 (SCI-Expanded)
- XXVII. **Evaluation of flow and water quality monitoring network design by using Digital Elevation Model (DEM) in the GAP region of Turkey**  
APAYDIN H., OZTURK F., Merdun H.  
FRESENIUS ENVIRONMENTAL BULLETIN, vol.16, no.3, pp.272-277, 2007 (SCI-Expanded)
- XXVIII. **Comparison of artificial neural network and regression pedotransfer functions for prediction of soil water retention and saturated hydraulic conductivity**  
Merdun H., ÇINAR Ö., MERAL R., APAN M.  
SOIL & TILLAGE RESEARCH, vol.90, no.1-2, pp.108-116, 2006 (SCI-Expanded)
- XXIX. **Inverse effects of Polyacrylamide (PAM) usage in furrow irrigation on advance time and deep percolation**  
MERAL R., CEMEK B., APAN M., Merdun H.  
JOURNAL OF ENVIRONMENTAL BIOLOGY, vol.27, no.4, pp.691-694, 2006 (SCI-Expanded)
- XXX. **Assessment of irrigation schemes in Turkey with irrigation ratio and relative water supply**  
DEGIRMENCI H., BUEYUEKCANGAZ H., Merdun H.  
WATER INTERNATIONAL, vol.31, no.2, pp.259-265, 2006 (SCI-Expanded)
- XXXI. **Pedotransfer functions for point and parametric estimations of soil water retention curve**  
Merdun H.  
PLANT SOIL AND ENVIRONMENT, vol.52, no.7, pp.321-327, 2006 (SCI-Expanded)
- XXXII. **Determination of the drainage basin characteristics using vector GIS**  
APAYDIN H., OZTURK F., Merdun H., Aziz N. M.  
NORDIC HYDROLOGY, vol.37, no.2, pp.129-142, 2006 (SCI-Expanded)
- XXXIII. **Determination of ponding time and number of on-off cycles for sprinkler irrigation applications**  
GENCOGLAN C., GENCOGLAN S., Merdun H., UCAN K.  
AGRICULTURAL WATER MANAGEMENT, vol.72, no.1, pp.47-58, 2005 (SCI-Expanded)
- XXXIV. **Evaluation of MACRO model by short-term water and solute transport simulation in Maury silt loam soil**  
Merdun H., Quisenberry V. L.  
PLANT SOIL AND ENVIRONMENT, vol.51, no.3, pp.110-123, 2005 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Evaluation of bio-oil compounds of catalytic fast pyrolysis by multivariate analysis**  
MERDUN H., SEZGİN İ. V., Guzelciftci B.  
PAMUKKALE UNIVERSITY JOURNAL OF ENGINEERING SCIENCES-PAMUKKALE UNIVERSITESI MUHENDISLIK BILIMLERI DERGISI, vol.25, no.3, pp.297-303, 2019 (ESCI)
- II. **Modelling of Pyrolysis Product Yields by Artificial Neural Networks**  
MERDUN H., SEZGİN İ. V.  
INTERNATIONAL JOURNAL OF RENEWABLE ENERGY RESEARCH, vol.8, no.2, pp.1178-1188, 2018 (ESCI)

## Books & Book Chapters

- I. **Toprak kirliliği ve kontrolü**  
MERDUN H.  
in: Çevre kirliliği ve kontrolü, Çınar Ö., Editor, Nobel Yayınevi, Ankara, pp.86-112, 2008
- II. **Su kirliliği ve kontrolü**  
MERDUN H., ÇINAR Ö.  
in: Çevre kirliliği ve kontrolü, Çınar Ö., Editor, Nobel Yayınevi, Ankara, pp.2-31, 2008
- III. **Çevre Kirliliği ve Kontrolü**

## Refereed Congress / Symposium Publications in Proceedings

- I. **Investigation of catalysts and bio oil in co pyrolysis of greenhouse vegetable wastes and coal**  
MIRDUN H., SEZGİN İ. V.  
4th International Conference on Environmental Science and Technology (ICOEST), Ukraine, pp.153
- II. **Effects of catalysts on bio oil of fast pyrolysis of greenhouse vegetable wastes,**  
MIRDUN H., SEZGİN İ. V.  
4th International Conference on Environmental Science and Technology (ICOEST), Ukraine, pp.148
- III. **Studies on Biomass Slow Pyrolysis in Turkey and World**  
SEZGİN İ. V., MERDUN H., Laouge Z. B.  
4rd International Conference on Civil and Environmental Engineering (ICOCEE), İstanbul, Turkey, 17 - 18 June 2019
- IV. **Thermogravimetric Analysis Studies on Sludge in Turkey and World**  
MIRDUN H., SEZGİN İ. V., Laouge Z. B.  
5th International Conference on Engineering and Natural Science (ICENS) „ Prag, Czech Republic, 12 - 16 June 2019, pp.113-117
- V. **Studies on Thermochemical Conversion of Sludge for Bioenergy Production in Turkey and World**  
MIRDUN H., SEZGİN İ. V., Laouge Z. B.  
5th International Conference on Engineering and Natural Science (ICENS) „ Prag, Czech Republic, 12 - 16 June 2019, pp.58-64
- VI. **Biomass thermogravimetric analysis studies in Turkey,**  
SEZGİN İ. V., MERDUN H.  
14th International Combustion Symposium(INCOS 2018), Karabük, Turkey, 25 - 27 April 2018, pp.392-395
- VII. **Application of biochar to water treatment studies**  
SEZGİN İ. V., MERDUN H.  
14th International Combustion Symposium(INCOS 2018), Karabük, Turkey, 25 - 27 April 2018, pp.396-399
- VIII. **Investigation of energy potentials of plant biomasses in Turkey**  
SEZGİN İ. V., MERDUN H.  
3rd International Conference on Civil and Environmental Engineering (ICOCEE), İzmir, Turkey, 24 - 27 April 2018
- IX. **Soil applications of biochar obtained from biomass in Turkey**  
SEZGİN İ. V., MERDUN H.  
3rd International Conference on Civil and Environmental Engineering (ICOCEE), İzmir, Turkey, 24 - 27 April 2018

## Supported Projects

- YILMAZ E., MERDUN H., SEZGİN İ. V., MAHAMANE GALADIMA M., Project Supported by Higher Education Institutions, Tarımsal atıklardan piroliz yoluyla elde edilen biocharın bazı fizikokimyasal özelliklerinin araştırılması, 2019 - 2021
- ÇİĞGIN A. S., MERDUN H., Başbuğ Özkan N., Project Supported by Higher Education Institutions, Zeytinyağı üretim atıklarının biyolojik arıtilabilirliğine ileri oksidasyon prosesleri ile ön arıtımın etkisi, 2018 - 2020
- VAROL M., MERDUN H., ERDEM A., YENİLMEZ F., Akgül G., Project Supported by Higher Education Institutions, Chlorella vulgaris mikroalg kültürünün oksijenleme şartlarını temsil eden yüksek CO2 içerikli gaz karışımı ile fotobiyoreaktörde yetiştirilmesi ve CO2 tutma veriminin incelenmesi, 2018 - 2020
- MIRDUN H., TUBITAK Project, Piroliz ve gazlaştırma ile organik atıklardan biyoyağ ve sentez gazı üretimi, 2014 - 2015
- MIRDUN H., TUBITAK Project, Güneydoğu Anadolu'da bitkierası yem bitkileri üretiminin toprak özellikleri, sediment ve bitki besin maddesi kayıpları ve antepfıstığı verimi ve kalitesi üzerine etkileri, 2008 - 2011
- MIRDUN H., TUBITAK Project, Farklı sediment materyalleri ve su şartları için geleneksel ve akustik yöntemlerle askıda

sedimentin ölçümü ve değerlendirilmesi, 2007 - 2009

MERDUN H., TÜBİTAK Project, Değişik faktörler ve bunların interaksiyonlarının tercihli akış ve yeraltısuyu kirliliği üzerine etkilerinin araştırılması, 2005 - 2007

## **Metrics**

Publication: 49

Citation (WoS): 368

Citation (Scopus): 496

H-Index (WoS): 14

H-Index (Scopus): 15