

## **Asst. Prof. LÜTFİ ERDEN**

### **Personal Information**

**Office Phone:** [+90 286 416 7705](tel:+902864167705)

**Fax Phone:** [+90 286 416 3733](tel:+902864163733)

**Email:** [lutfi.erden@comu.edu.tr](mailto:lutfi.erden@comu.edu.tr)

**Web:** <https://avesis.comu.edu.tr/lutfi.erden>

### **International Researcher IDs**

ORCID: 0000-0003-3314-7925

ScopusID: 57201277979

Yoksis Researcher ID: 269811

### **Education Information**

Post Doctorate, Vrije Universiteit Brussel, Faculty of Engineering, Department of Chemical Engineering, Belgium 2019 - 2020

Post Doctorate, University of South Carolina, Faculty of Engineering, Department of Chemical Engineering, United States Of America 2016 - 2016

Doctorate, University of South Carolina, Faculty of Engineering, Department of Chemical Engineering, United States Of America 2010 - 2016

Postgraduate, Mugla Sıtkı Kocman University, Faculty Of Arts And Sciences, Department Of Chemistry, Turkey 2006 - 2009

Undergraduate, Ege University, Faculty of Engineering, Department of Chemical Engineering, Turkey 2000 - 2005

### **Foreign Languages**

English, B2 Upper Intermediate

### **Dissertations**

Postgraduate, Hidrojen depolanması için nanokompozit kıl materyal geliştirilmesi ve mikro-yapı özelliklerinin incelenmesi, Mugla Sıtkı Kocman University, Fen Bilimleri Enstitüsü, Kimya, 2009

### **Research Areas**

Process Design, Separation Operations

### **Academic Titles / Tasks**

Assistant Professor, Canakkale Onsekiz Mart University, Çan Meslek Yüksekokulu, Elektrik ve Enerji, 2022 - Continues

Research Assistant PhD, Usak University, Faculty Of Engineering, Department of Chemical Engineering, 2017 - 2022

Researcher, Vrije Universiteit Brussel, Faculty of Engineering, Department of Chemical Engineering, 2019 - 2020

Researcher, University of South Carolina, Faculty of Engineering, Department of Chemical Engineering, 2016 - 2016

Research Assistant, University of South Carolina, Faculty of Engineering, Department of Chemical Engineering, 2010 - 2016

Research Assistant, Mugla Sıtkı Koçman University, Faculty Of Arts And Sciences, Department Of Chemistry, 2006 - 2010

## Courses

Hidrojen Enerjisi ve Yakıt Pili Teknolojisi, Undergraduate, 2022 - 2023

Proje Hazırlama Teknikleri, Associate Degree, 2022 - 2023

Thermodynamics and Heat Transfer, Associate Degree, 2023 - 2024, 2022 - 2023

Differential Equations, Undergraduate, 2023 - 2024, 2022 - 2023

Occupational Health and Safety I, Undergraduate, 2023 - 2024

Isı Transferi, Associate Degree, 2023 - 2024

Biokütle Enerjisi ve Uygulamaları, Associate Degree, 2023 - 2024

Temel Bilgi Teknolojisi Kullanımı, Undergraduate, 2023 - 2024, 2022 - 2023

Ekserji Analizi, Associate Degree, 2022 - 2023

Process Control, Undergraduate, 2023 - 2024

Biokütle Enerjisi ve Uygulamaları, Associate Degree, 2023 - 2024

Bor ve Hidrojen Teknolojisi, Associate Degree, 2023 - 2024

Sayısal Yöntemler, Undergraduate, 2022 - 2023

Isı Transferi, Associate Degree, 2023 - 2024

Termodinamik, Associate Degree, 2022 - 2023

Occupational Health and Safety II, Undergraduate, 2022 - 2023

Hidrojen Enerjisi ve Yakıt Pilleri, Associate Degree, 2022 - 2023

Biokütle Enerjisi ve Uygulamaları, Associate Degree, 2022 - 2023

## Jury Memberships

Academic Staff Examination, Academic Staff Examination, Çanakkale Onsekiz Mart Üniversitesi, January, 2023

Doctoral Examination, Doctoral Examination, Muğla Sıtkı Koçman Üniversitesi, December, 2022

Doctoral Examination, Doctoral Examination, Muğla Sıtkı Koçman Üniversitesi, December, 2022

Doctoral Examination, Doctoral Examination, Muğla Sıtkı Koçman Üniversitesi, December, 2022

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

- I. **Highly selective oxidation of glucose to formic acid over synthesized hydrotalcite-like catalysts under base free mild conditions**  
Kilic H. A., Kilic E., Erden L., Gok Y.  
RESEARCH ON CHEMICAL INTERMEDIATES, vol.48, no.10, pp.4079-4103, 2022 (SCI-Expanded)
- II. **Equilibrium Theory Analysis of Pressure Equalization Steps in Pressure Swing Adsorption**  
Fakhari-Kisomi B., Erden L., Ebner A. D., Ritter J. A.  
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.60, no.27, pp.9928-9939, 2021 (SCI-Expanded)
- III. **A reference high-pressure CO<sub>2</sub> adsorption isotherm for ammonium ZSM-5 zeolite: results of an interlaboratory study**  
Nguyen H. G. T., Espinal L., van Zee R. D., Thommes M., Toman B., Hudson M. S. L., Mangano E., Brandani S., Broom D. P., Benham M. J., et al.  
ADSORPTION-JOURNAL OF THE INTERNATIONAL ADSORPTION SOCIETY, vol.24, no.6, pp.531-539, 2018 (SCI-Expanded)
- IV. **Separation of Landfill Gas CH<sub>4</sub> from N<sub>2</sub> Using Pressure Vacuum Swing Adsorption Cycles with**

## **Heavy Reflux**

Erden L., Ebner A. D., Ritter J. A.

ENERGY & FUELS, vol.32, no.3, pp.3488-3498, 2018 (SCI-Expanded)

## **Articles Published in Other Journals**

### **I. Comparison of Adsorption Isotherm Models for Methane and Carbon Dioxide Adsorption onto Activated Carbon**

Erden L., Erden H.

International Journal of Innovative Approaches in Science Research, vol.7, no.1, pp.25-36, 2023 (Peer-Reviewed Journal)

### **II. On the Use of Multi-Site Langmuir Model for Prediction of Non-Ideal Gas Mixture Adsorption Isotherms**

Erden H., Erden L.

Usak University Journal of Material Sciences, vol.6, no.1-2, pp.7-14, 2017 (Peer-Reviewed Journal)

## **Refereed Congress / Symposium Publications in Proceedings**

### **I. Biyogaz Zenginleştirme için Basınç Salımlı Adsorpsiyon (PSA) Prosesi Tasarımı ve Modellenmesi**

ERDEN H., ERDEN L.

15. Ulusal Kimya Mühendisliği Kongresi, Çanakkale, Turkey, 4 - 07 September 2023

### **II. ACTIVATED CARBON BASED MONOLITHIC ADSORBENTS FOR CO<sub>2</sub> CAPTURE**

ERDEN L., ERDEN H.

ASES III. INTERNATIONAL SCIENTIFIC RESEARCH CONFERENCE, Trabzon, Turkey, 28 - 29 January 2023

### **III. On the Use of the Dual Process Langmuir Model for Gas Mixture Components That Exhibit Single Process or Linear Isotherms**

james R. A., ebner a. d., ERDEN L., Bullmiller K.

AIChE Annual Meeting, 28 October - 02 November 2018

### **IV. On the Development of a PSA Process for Natural Gas Purification**

james R. A., ebner a. d., ERDEN L., Ho J.

AIChE Annual Meeting, 29 October - 03 November 2017

### **V. Carbon Dioxide Capture from Flue Gas By a PSA Process Utilizing a Structured Adsorbent: Full Scale Simulation with Model Validated at the Bench Scale**

Mohammadi N., Ebner A. D., Ritter J. A., ERDEN L.

2016 AIChE Annual Meeting, 13 - 18 November 2016

### **VI. CO<sub>2</sub> Capture from Flue Gas By PSA: Bench Scale Demonstration of a Novel Structured Adsorbent**

Ritter J. A., Ebner A. D., Rahman A., Mohammadi N., ERDEN L., Nicholson M. A., Hossain M. I.

2015 AIChE Annual Meeting Proceedings, 8 - 13 November 2015

### **VII. Novel Structured Adsorbent and Flowsheet for CO<sub>2</sub> Capture from Flue Gas By PSA**

Ritter J. A., Ebner A. D., Mohammadi N., Nicholson M. A., ERDEN L.

2014 AIChE Annual Meeting, 16 - 21 November 2014

### **VIII. On the Variability and Reproducibility of Equilibrium Adsorption Isotherm Measurements From Different Laboratories**

ERDEN L., Ebner A. D., Nicholson M. A., Holland C. E., Ritter J. A., Diep T., Shapiro A., Knox J. C., Mitchell L. A., LeVan M. D.

2013 AIChE Annual Meeting, 3 - 08 November 2013

### **IX. Pressure Vacuum Swing Adsorption Cycles for Landfill Methane Purification**

ERDEN L., Ebner A. D., Ritter J. A.

2012 AIChE Annual Meeting, 28 October - 02 November 2012

- X. **Preparation and characterization of Ti-Zr PILC as a novel catalyst for catalytic deep oxidation of trichloroethylene**  
Deveci I., Erden H., ERDEN L., Besun N.  
19th International Congress of Chemical and Process Engineering, CHISA 2010 and 7th European Congress of Chemical Engineering, ECCE-7, Prague, Czech Republic, 28 August - 01 September 2010
- XI. **Low temperature catalytic CVOC oxidation over bimetallic (Zr-PILCs) nanocomposite clay catalyst**  
Besun N., Deveci I., Erden H., ERDEN L.  
8th World Congress of Chemical Engineering: Incorporating the 59th Canadian Chemical Engineering Conference and the 24th Interamerican Congress of Chemical Engineering, Montreal, Canada, 23 - 27 August 2009
- XII. **Low temperature CVOCs oxidation reaction over bimetallic Zr-PILCs nanocomposite clay catalysts**  
BEŞÜN N., DEVECİ İ., ERDEN H., ERDEN L.  
8th World Chemical Engineering Congress, WCCE8, Montreal, Canada, 23 August 2009
- XIII. **Synthesis and Characterization of micro-mesoporous Mixed-PILCs with varying pillar density**  
BEŞÜN N., DEVECİ İ., ERDEN H., ERDEN L.  
2nd National Catalysis Conference, Erzurum, Turkey, 18 June 2008

## Supported Projects

Erden L., Denayer J., Project Supported by Public Organizations in Other Countries, New Routes for CO<sub>2</sub> capture and conversion using microwaves, electrochemistry and atmospheric plasma, 2019 - 2022

Erden L., Gök Y., Kılıç E., Project Supported by Higher Education Institutions, Türkiye'deki Tarımsal Atıkların Değerlendirilmesi ile Yüksek Safılıkta Formik Asit Üretim Yönteminin Geliştirilmesi ve Muhtemel Pilot Üretim Tesisinin Tasarım ve Simülasyonu, 2019 - 2022

Erden L., Ritter J. A., Industrial Organizations of Other Countries Supported Project, Construction and Testing of Pressure Swing Adsorption Systems and Materials Characterization for CH<sub>4</sub> and CO<sub>2</sub> Separation, 2015 - 2016

Erden L., Ritter J. A., Industrial Organizations of Other Countries Supported Project, Evaluation of CO<sub>2</sub> Adsorbents using Gravimetric and Volumetric Adsorption Techniques, 2015 - 2015

Erden L., Ritter J. A., Industrial Organizations of Other Countries Supported Project, Evaluation of CH<sub>4</sub> and CO<sub>2</sub> Separation in a Multi-Bed Pressure Swing Adsorption System, 2014 - 2015

Erden L., Ritter J. A., Project Supported by Public Organizations in Other Countries, Complex Hydrides of Lithium, Aluminum and Boron for Hydrogen Storage, 2009 - 2012

Erden L., Ritter J. A., Industrial Organizations of Other Countries Supported Project, Adsorbent Evaluation Using Thermogravimetric Cycling Analysis, 2011 - 2011

Erden L., Erden H., Akpolat O., TÜBİTAK Project, Synthesis characterization and testing of bimetallic organic inorganic clay catalyst for TCE removal, 2009 - 2010

## Scientific Refereeing

Journal of advanced research in natural and applied sciences (Online), Other Indexed Journal, January 2024

Celal Bayar Üniversitesi Fen Bilimleri Dergisi, National Scientific Refreed Journal, October 2021

Mugla Journal of Science and Technology, National Scientific Refreed Journal, July 2020

## Metrics

Publication: 19  
Citation (WoS): 80  
Citation (Scopus): 84  
H-Index (WoS): 2

H-Index (Scopus): 3

**Scholarships**

YLSY, Ministry of Education, 2010 - 2016

**Awards**

Gök Y., Erden L., Kılıç E., YÖK Üstün Başarı Ödülü, Yerel Kalkınmaya Katkı Ödülü, Yüksek Öğretim Kurulu Başkanlığı (Yök)  
, October 2023