

**Assoc. Prof. Mehmet Emin  
ARZUTUĞ**



### Personal Information

**Office Phone:** [+90 442 231 4559](tel:+904422314559)

**Web:** <https://avesis.atauni.edu.tr/arzutug>

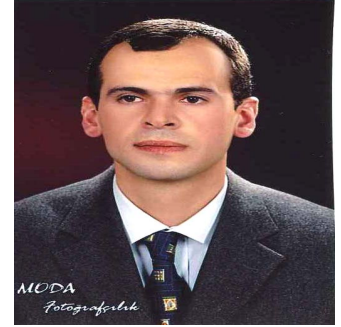
**Address:** Atatürk Üniversitesi Mühendislik Fakültesi Kimya Müh. Bölümü 25100-  
Yakutiye / ERZURUM

### International Researcher IDs

ScholarID: ixOeaA4AAAAJ

ORCID: 0000-0002-4364-2834

Yoksis Researcher ID: 47540



### Education Information

Doctorate, Atatürk University, Fen Bilimleri, Kimya Mühendisliği, Turkey 1996 - 2003

Postgraduate, Atatürk University, Fen Bilimleri, Kimya Mühendisliği, Turkey 1993 - 1996

Undergraduate, Atatürk University, Mühendislik Fakültesi, Kimya Mühendisliği, Turkey  
1989 - 1993

### Foreign Languages

English, B1 Intermediate

### Certificates, Courses and Trainings

IT, Sertifikalı KVKK Eğitimi', Atatürk University- Continuing Education Application and Research Center, 2022

### Dissertations

Doctorate, Çarpan Swirl Jetlerde Kütle Transferi, Atatürk Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği, 2003

Postgraduate, AMONYAK GAZI İLE DOYURULMUŞ AMONYAK ÇÖZELTİLERİNDE MALAHİT CEVHERİNİN  
ÇÖZÜNÜRLÜĞÜNÜN İNCELENMESİ, Atatürk Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği, 1996

### Research Areas

Chemical Engineering and Technology, Basic Operations and Thermodynamics, Fluid Mechanics, Heat Transfer, Mass  
Transfer, Transport Events, Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Atatürk University, Mühendislik Fakültesi, Kimya Mühendisliği, 2016 - Continues

Assistant Professor, Ataturk University, Mühendislik Fakültesi, Kimya Mühendisliği, 2004 - 2016  
Research Assistant PhD, Ataturk University, Mühendislik Fakültesi, Kimya Mühendisliği, 2003 - 2004  
Research Assistant, Ataturk University, Mühendislik Fakültesi, Kimya Mühendisliği, 1995 - 2003

## Academic and Administrative Experience

Visiting Scholar, University of Waterloo, Engineering Faculty, Chemical Engineering Department , 2008 - 2010

## Courses

Yakıt Pilleri, Postgraduate, 2022 - 2023  
Transport Phenomena-2, Doctorate, 2022 - 2023  
Kütle ve Enerji Denklikleri, Undergraduate, 2023 - 2024  
Mass Transfer, Undergraduate, 2022 - 2023  
Fuel Cells, Postgraduate, 2023 - 2024  
Isı Transferi, Undergraduate, 2022 - 2023  
Fuel Cells, Postgraduate, 2021 - 2022  
Mass Transfer, Undergraduate, 2021 - 2022  
Isı Transferi (Heat Transfer), Undergraduate, 2021 - 2022  
Yakıt Pilleri (Fuel Cells), Postgraduate, 2021 - 2022  
Kütle Transferi (Mass Transfer), Undergraduate, 2020 - 2021  
Bitirme Projesi-2, Undergraduate, 2020 - 2021  
Kimya Mühendisliği Laboratuvarı-1, Undergraduate, 2020 - 2021  
Transport Phenomena-2, Doctorate, 2019 - 2020  
Fuel Cells, Postgraduate, 2019 - 2020  
Genel Kimya, Undergraduate, 2020 - 2021  
Akışkanlar Mekaniği, Undergraduate, 2020 - 2021  
Separation Processes-2, Undergraduate, 2019 - 2020  
Fuel Cells, Postgraduate, 2020 - 2021  
Genel Kimya, Undergraduate, 2020 - 2021  
Chemical Engineering Lab.-1, Undergraduate, 2019 - 2020  
Taşınım Olayları-II, Doctorate, 2018 - 2019  
Yakıt Pilleri, Postgraduate, 2018 - 2019  
Kimya Mühendisliği Termodinamiği, Undergraduate, 2017 - 2018  
Isı Transferi, Undergraduate, 2016 - 2017  
Kütle Transferi, Undergraduate, 2015 - 2016  
Kimya Mühendisliği Tasarım-I, Undergraduate, 2015 - 2016  
Analitik Kimya, Undergraduate, 2013 - 2014  
Kimyasal Reaksiyonlu Kütle Transferi, Doctorate, 2013 - 2014  
İleri kimya Müh. Termodinamiği, Postgraduate, 2012 - 2013  
Mühendislik Termodinamiği, Undergraduate, 2011 - 2012  
Elektrokimya, Undergraduate, 2005 - 2006

## Advising Theses

Arzutuğ M. E., Adıgüzel N., Experimental Investigation of Parameters Affecting Heat Transfer in Double Pipe Heat Exchangers with Active Techniques, Doctorate, G.GÜLDEMİR(Student), Continues  
Arzutuğ M. E., BOKSİT VE DEMİR CEVHERİNİN ÇİMENTONUN HİDRATASYON ISISI, FİZİKSEL VE MEKANİKSEL

ÖZELLİKLERİ ÜZERİNE ETKİSİNİN ARAŞTIRILMASI, Postgraduate, B.ŞEKER(Student), 2021

Arzutuğ M. E., Daldırılmamış çarpan jetlerde elektrokimyasal kaplama, Postgraduate, U.KAHRAMAN(Student), 2019

Arzutuğ M. E., Farklı açılarda Rushton türbinleri kullanılarak karıştırılan dikey silindirik ceketli reaktörlerde sınırlayıcı akım difüzyon tekniği ile cidarda ve tabanda sıcaklık dağılımının belirlenmesi, Postgraduate, M.SALMAN(Student), 2019

ARZUTUĞ M. E., DALDIRILMIŞ ÇARPAN JETLERDE KÜTLE TRANSFERİ, Postgraduate, B.Solak(Student), 2017

ARZUTUĞ M. E., KOK FIRIN GAZI PROSESLERİ ve EK TESİSLERİ, Postgraduate, M.Çakır(Student), 2006

## Jury Memberships

Doctorate, Doctorate, Atatürk Üniversitesi, December, 2022

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Atatürk Üniversitesi, August, 2022

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Atatürk Üniversitesi, January, 2022

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Atatürk Üniversitesi, June, 2021

PhD Thesis Monitoring Committee Member, PhD Thesis Monitoring Committee Member, Atatürk Üniversitesi, June, 2021

Doctorate, Doctorate, Atatürk Üniversitesi, December, 2020

Doctorate, Doctorate, Atatürk Üniversitesi, October, 2020

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

- I. **Design of a CPU Heat Sink with Minichannel-Fins & its Thermal Analysis**  
ARZUTUĞ M. E.  
Polish Journal of Chemical Technology, vol.25, no.3, pp.89-100, 2023 (SCI-Expanded)
- II. **Hydrofluoric acid and sodium hydroxide production by bipolar membrane electro dialysis**  
Erkmen J., Yapici S., ARZUTUĞ M. E., AYDIN O. B., ATA O. N., Oner M. R.  
DESALINATION AND WATER TREATMENT, vol.57, no.43, pp.20254-20260, 2016 (SCI-Expanded)
- III. **Determination of the Morphological Properties of Electroplated Nickel Coatings Obtained Using Impinging Jet Electrode**  
ARZUTUĞ M. E.  
JOURNAL OF THE CHEMICAL SOCIETY OF PAKISTAN, vol.37, no.2, pp.395-406, 2015 (SCI-Expanded)
- IV. **Pressure drop and point mass transfer in a rectangular microchannel**  
ERGU O. B., ŞARA O. N., YAPICI S., ARZUTUĞ M. E.  
INTERNATIONAL COMMUNICATIONS IN HEAT AND MASS TRANSFER, vol.36, no.6, pp.618-623, 2009 (SCI-Expanded)
- V. **Experimental study of laminar forced convective mass transfer and pressuredrop in microtubes**  
ŞARA O. N., Ö BARLAY E., ARZUTUĞ M. E., YAPICI S.  
International Journal Of Thermal Sciences, vol.48, pp.1894-1900, 2009 (SCI-Expanded)
- VI. **Electrochemical Mass Transfer in Impinging Swirl Jets**  
ARZUTUĞ M. E., YAPICI S.  
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.48, no.3, pp.1593-1602, 2009 (SCI-Expanded)
- VII. **A comparison of mass transfer between a plate and submerged conventional and multichannel impinging jets**  
Arzutug M. E., Yapici S., KOCAKERİM M. M.  
INTERNATIONAL COMMUNICATIONS IN HEAT AND MASS TRANSFER, vol.32, no.6, pp.842-854, 2005 (SCI-Expanded)
- VIII. **Leaching of malachite ore in NH<sub>3</sub>-saturated water**  
ARZUTUĞ M. E., KOCAKERİM M. M., ÇOPUR M.  
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.43, no.15, pp.4118-4123, 2004 (SCI-Expanded)

## Articles Published in Other Journals

- I. **A new application area of electrochemical limiting diffusion current technique: measurement of mixing time and effect of some parameters**  
Aydin O., ARZUTUĞ M. E., YAPICI S.  
SN APPLIED SCIENCES, vol.1, no.11, 2019 (ESCI)
- II. **THE DEVELOPMENT OF MICROSTRUCTURE IN ELECTROLYTIC COATINGS PRODUCED USING IMPINGING JET ELECTRODE.**  
Arzutuğ M. E.  
JOURNAL OF QAFAQZ UNIVERSITY- CHEMISTRY AND BIOLOGY, vol.1, no.1, pp.14-22, 2013 (Peer-Reviewed Journal)
- III. **Konvansiyonel ve Swirl Çarpan Jetlerde Kütle Transferi**  
ARZUTUĞ M. E., YAPICI S.  
BALIKESİR ÜNİVERSİTESİ FEN BİLİMLERİ ENSTİTÜSÜ DERGİSİ, vol.9, pp.111-124, 2007 (Peer-Reviewed Journal)
- IV. **Mikro kanallarda basınç düşüşü ve ısı kütle aktarımı II Taşınım ile Isı ve kütle aktarımı**  
ŞARA O. N., YAPICI S., ARZUTUĞ M. E.  
Mühendis ve Makina, vol.48, pp.20-27, 2007 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **DEVELOPMENT of a NOVEL CPU COOLER by USING a NANOFLUID in MINICHANNEL FINS & DETERMINATION THERMAL PERFORMANCE**  
Arzutuğ M. E., Başçı A.  
ANKARA INTERNATIONAL CONGRESS ON SCIENTIFIC RESEARCH-VII, Ankara, Turkey, 2 - 04 December 2022, pp.127-134
- II. **A New Heat Sink Design for Cooling Microprocessors and Investigation of Cooling Performance**  
Arzutuğ M. E., Başçı A.  
2nd International Symposium on Applied Science and Engineering (ISASE-2021), 7 - 09 April 2021, vol.1, no.1, pp.1
- III. **Determination of the Effect of Suspended Nanosized Particles on Mass Transfer Rate in an Agitated Vessel**  
ARZUTUĞ M. E., AYDIN Ö., TORUN M., ÇALIŞKAN K.  
Proceedings of the 2nd International Conference on Fluid Flow, Heat and Mass Transfer, 30 April - 01 May 2015
- IV. **Çarpan jet tekniği kullanarak kompozit filmlerin elektrolitik olarak kaplanması**  
ARZUTUĞ M. E., EZİRMİK K. V.  
1. Uluslararası Yüzey İşlemleri Sempozyumu, Turkey, 15 - 18 June 2011
- V. **Çarpan Jet Tekniği Kullanılarak Kompozit Filmlerin Elektrolitik Olarak Kaplanması**  
ARZUTUĞ M. E., EZİRMİK K. V.  
1. Uluslararası Yüzey İşlemleri Sempozyumu 2011, İstanbul, Turkey, 15 - 18 June 2011
- VI. **PEM Yakıt hücrelerinde bulunan gaz difüzyon tabakalarının hidrofilik porozitelerinin belirlenmesi**  
ARZUTUĞ M. E., FOWLER M.  
9. Ulusal Kimya Mühendisliği Kongresi, Turkey, 22 - 25 June 2010
- VII. **The effect of clamping pressure on GDL porosity**  
ARZUTUĞ M. E., MICHAEL F.  
217th ECS Meeting MA201-01, April 25-30, 201 Vancouver, Canada, Vancouver, Canada, 25 - 30 April 2010
- VIII. **Influence of gradient PTFE coating in cathode gas diffusion layer on the performance of PEMFCs**  
ARZUTUĞ M. E., FOWLER M., SİNGARAM V., DHANUSHKODİ S.  
217th ECS Meeting MA2010-01 April 25-20, 2010, Vancouver, Canada, Vancouver, Canada, 25 - 30 April 2010
- IX. **Boraks çözeltisinin membranlı ve üç boyutlu bir hücrede elektrolizi ile sodyum hidroksit üretimi**  
ÖZ E. K., ÇOPUR M., YAPICI S., ARZUTUĞ M. E.  
8. Ulusal Kimya Mühendisliği Kongresi, Turkey, 26 - 29 August 2008

X. **Daldırılmış swirl ve çok kanallı çarpan jetlerde kütle transferi**

ARZUTUĞ M. E., YAPICI S.

7. Ulusal Kimya Mühendisliği Kongresi, Turkey, 5 - 08 September 2006

XI. **Daldırılmış konvansiyonel çarpan jetler ve çok kanallı çarpan jetler ile düzgün bir çarpma yüzeyi arasında kütle transferi dağılımının karşılaştırılması**

ARZUTUĞ M. E., YAPICI S.

6. Ulusal Kimya Müh. Kongresi, Turkey, 7 - 10 September 2004

## Supported Projects

ADIGÜZEL N., ARZUTUĞ M. E., GÜLDEMİR G., Project Supported by Higher Education Institutions, Çift borulu Isı değiştiricilerde Isı Transferine Etki Eden Parametrelerin Aktif Tekniklerle Deneysel Olarak İncelenmesi, 2023 - Continues  
Arzutuğ M. E., Technopark, Thermal Paste Production Used in Cooling Applications in Electronic Systems., 2023 - 2025  
Arzutuğ M. E., Technopark, Rust Converter Production for Corrosion Protection of Iron and Aluminum Surfaces., 2023 - 2025

ARZUTUĞ M. E., Project Supported by Higher Education Institutions, Sürekli Karıştırmalı Tank reaktörlerde dinamik davranışlı engel dizaynı., 2023 - 2024

ARZUTUĞ M. E., BAŞÇI A., Project Supported by Higher Education Institutions, Mikroişlemciler için Minikanallı Soğutucu Geliştirilmesi, 2022 - 2024

Arzutuğ M. E., Project Supported by Higher Education Institutions, Development of a Minichannel Heat Absorber for Microprocessor and Micro Electromechanical Systems., 2022 - 2024

Arzutuğ M. E., Technopark, Demir Nikel Metal Malzemelerinin Yerinde Kaynatılması için Termit Karışımı Üretimi, 2022 - 2024

Adıgüzel N., Arzutuğ M. E., Project Supported by Higher Education Institutions, Çift borulu Isı Değiştiricilerde Aktif Tekniklerle Isıl Performansın Artırılması, 2022 - 2023

Arzutuğ M. E., Project Supported by Other Official Institutions, Social Awareness Project, 2022 - 2022

ARZUTUĞ M. E., AYDIN Ö., Project Supported by Higher Education Institutions, KARIŞTIRMALI TANK REAKTÖRLERDE KARIŞMA ZAMANININ BELİRLENMESİ, 2013 - 2017

Arzutuğ M. E., Project Supported by Higher Education Institutions, Karıştırmalı dikey silindirik ceketli reaktörlerde cidarda lokal kütle ısı transfer ölçümü, 2007 - 2009

Arzutuğ M. E., Şara O. N., TUBITAK Project, Mikro Elektrotlarla Elektrokimyasal Yöntemle Kütle Transferinin Ölçümü, 2006 - 2009

Arzutuğ M. E., Yapıcı S., Project Supported by Higher Education Institutions, Konvansiyonel çok kanallı ve swirl çarpan jetlerle kütle transferi, 1997 - 2002

## Patent

Arzutuğ M. E., Adıgüzel N., Increasing Thermal Performance with Active Techniques in Double Pipe Heat Exchangers, Patent, CHAPTER F Mechanical engineering; Lighting; Heating; Weaponry; Destroyed Materials, The Invention Recourse Number: 2023/015657 , Standard Registration, 2023

Arzutuğ M. E., Başçı A., Heat Sink with minichannel for Microprocessors , Patent, CHAPTER C Chemistry; Metallurgy, The Invention Recourse Number: 2023/017386 , Standard Registration, 2023

## Activities in Scientific Journals

Energy Recovery and Transfer Processes., First Editor, 2021 - Continues

## Memberships / Tasks in Scientific Organizations

Türk Isı Bilimi ve Tekniği Dergisi, Member, 2018 - Continues

## Scientific Refereeing

Project Supported by Higher Education Institutions, BAP Research Project, Kafkas University, Turkey, September 2022

Project Supported by Higher Education Institutions, BAP Research Project, Adana Alparslan Türkeş Science And Technology University, Turkey, September 2022

Technopark, Ataturk University, Turkey, August 2022

CHEMICAL PAPERS, SCI Journal, July 2021

TUBITAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, Ataturk University, Turkey, May 2021

Project Supported by Higher Education Institutions, BAP Research Project, Sakarya University Of Applied Sciences, Turkey, September 2020

## Scientific Consultations

Atatürk Üniversitesi / Fen Bilimleri, Other, Ataturk University, Mühendislik Fakültesi, Kimya Mühendisliği, Turkey, 2023 - Continues

Atatürk Üniversitesi/ Fen Bilimleri, Other, Ataturk University, Mühendislik Fakültesi, Kimya Mühendisliği, Turkey, 2022 - Continues

Atatürk Üniversitesi / Fen Bilimleri, Other, Ataturk University, Mühendislik Fakültesi, Kimya Mühendisliği, Turkey, 2022 - Continues

Tübitak 1507 Kobi Ar-Ge Başlangıç Destek Programı, Project Consultancy, Ataturk University, Mühendislik Fakültesi, Kimya Mühendisliği, Turkey, 2021 - 2022

## Tasks In Event Organizations

Arzutuğ M. E., Yetim A. F., Afşar F., Çalışkan B., The effect of temperature parameter in experimental researchs., Workshop Organization, Erzurum, Turkey, Kasım 2023

Arzutuğ M. E., Afşar F., Doğan T. H., Şimşek F., Combustion systems, fuels and the environment, Workshop Organization, Erzurum, Turkey, Ekim 2023

Arzutuğ M. E., Aydın M. D., Afşar F., Efficiency in Engineering System, Workshop Organization, Erzurum, Turkey, Eylül 2023

Arzutuğ M. E., Kızılca Çoruh M., Afşar F., Şimşek F., Transfer Processes in Engineering., Workshop Organization, Erzurum, Turkey, Eylül 2023

Arzutuğ M. E., Demirboğa R., Kızılca Çoruh M., Aydın Ö., POLAT R., Mass Transfer in Engineering Applications and Mass Transfer Measurement Techniques., Workshop Organization, Erzurum, Turkey, Ağustos 2023

Arzutuğ M. E., 4th International Conference on Advanced Engineering Technologies, Scientific Congress, Bayburt, Turkey, Eylül 2022

Arzutuğ M. E., 9th International Conference on Material Science and Nanotechnology for Next Generation (MSNG 2022) , Scientific Congress, Ankara, Turkey, Eylül 2022

Arzutuğ M. E., TOK 2022 Automatic Control National Congress, Scientific Congress, Elazığ, Turkey, Eylül 2022

Arzutuğ M. E., Nadaroğlu H., The World Congress on Applied Nanotechnology (W-CAN), Scientific Congress, Turkey, Kasım 2021

Arzutuğ M. E., Erdemir F., The International Küresan Multidisciplinary Studies Congress, Scientific Congress, Turkey, Ekim 2021

Arzutuğ M. E., Gürbulak B., In the First INTERNATIONAL CONGRESS ON NATURAL SCIENCES (ICNAS-2021), Scientific Congress, Erzurum, Turkey, Eylül 2021

Arzutuğ M. E., Gürbulak B., First INTERNATIONAL SYMPOSIUM ON RECENT ADVANCES IN FUNDAMENTAL AND APPLIED SCIENCES (ISFAS-2021), Scientific Congress, Erzurum, Turkey, Eylül 2021

Arzutuğ M. E., Yakuphanoglu F., 8th International Conference on Materials Science and Nanotechnology for Next Generation, Scientific Congress, Erzurum, Turkey, Ağustos 2021

Arzutuğ M. E., Aydın A. C., Yıldız E., International Congress on The Phenomenological Aspects of Civil Engineering (PACE-2021), Scientific Congress, Erzurum, Turkey, Haziran 2021

Arzutuğ M. E., Başı A., INTERNATIONAL SYMPOSIUM ON APPLIED SCIENCES & ENGINEERING, Scientific Congress, Erzurum, Turkey, Nisan 2021

## Metrics

Publication: 23

Citation (WoS): 84

Citation (Scopus): 96

H-Index (WoS): 4

H-Index (Scopus): 4

## Congress and Symposium Activities

ANKARA INTERNATIONAL CONGRESS ON SCIENTIFIC RESEARCH-VII, Moderator, Ankara, Turkey, 2022

ANKARA INTERNATIONAL CONGRESS On SCIENTIFIC RESEARCH-VII December 2-4, 2022 Ankara- TÜRKİYE, Attendee, Ankara, Turkey, 2022

1st INTERNATIONAL CONGRESS ON NATURAL SCIENCES (ICNAS-2021), Moderator, Erzurum, Turkey, 2021

INTERNATIONAL SYMPOSIUM ON APPLIED SCIENCES AND ENGINEERING, Attendee, Erzurum, Turkey, 2021

Proceedings of the 2nd International Conference on Fluid Flow, Heat and Mass Transfer, Attendee, Ottawa, Canada, 2015

1st ISTS 2011 International Surface Treatment Symposium, Attendee, İstanbul, Turkey, 2011

217th Electro Chemical Society Meeting, Attendee, Vancouver, Canada, 2010

## Entrepreneurship Activities

Other, Ener-KA, 21 January 2022, Owner

## Representation and Promotion Activities

Institutional Representation, University of Erzurum Teknik., Turkey, Erzurum, 2023 - 2023

Institutional Representation, University of Ataturk., Turkey, Erzurum, 2023 - 2023

Institutional Representation, University of Erzurum Teknik., Turkey, Erzurum, 2023 - 2023

Institutional Representation, University of Ataturk., Turkey, Erzurum, 2023 - 2023

Institutional Representation, Atatürk Üniversitesi, Alfaisal University, Erzurum Teknik Üniversitesi ve Osmaniye Korkut Ata Üniversitesi, Turkey, Erzurum, 2023 - 2023

## Non Academic Experience

ANADOLU İNOVASYON ARGE VE SAVUNMA SANAYİ TİC. LTD. ŞTİ.

Ürdün Üniversitesi

Università degli Studi di Napoli Federico II (Engineering Faculty Chemical Eng. department)

Waterloo University

Waterloo University