

## Dr. Öğr. Üyesi MESUDE AVCI

### Kişisel Bilgiler

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### Uluslararası Araştırmacı ID'leri

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Publons / Web Of Science ResearcherID: AAA-7503-2020

ScopusID: 55004097700

Yoksis Araştırmacı ID: 293762

### Eğitim Bilgileri

Doktora, University of Oklahoma, Amerika Birleşik Devletleri 2010 - 2015

Yüksek Lisans, Rice University, Amerika Birleşik Devletleri 2008 - 2010

Lisans, İnönü Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Türkiye 2002 - 2006

### Yaptığı Tezler

Doktora, Computational Investigation of Turbulent Blood Flow and Hemolysis in Biomedical Devices, University Of Oklahoma, 2015

Yüksek Lisans, Modeling Vapor-Liquid-Solid Phase Behavior in Natural Gas Systems, Rice University, 2010

### Araştırma Alanları

Biyomedikal Mühendisliği, Kimya Mühendisliği ve Teknolojisi

### Akademik Unvanlar / Görevler

Dr. Öğr. Üyesi, Sivas Cumhuriyet Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği, 2019 - Devam Ediyor

Öğretim Görevlisi, Sivas Cumhuriyet Üniversitesi, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2018 - 2019

### Verdiği Dersler

Kim. Müh. Lab. - I, Lisans, 2019 - 2020

Kimyasal Teknoloji Laboratuvarı, Lisans, 2019 - 2020

Malzeme, Lisans, 2019 - 2020

### SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

1. Hemolysis estimation in turbulent flow for the FDA critical path initiative centrifugal blood pump  
AVCI M., Heck M., O'Rear E. A., Papavassiliou D. V.

- BIOMECHANICS AND MODELING IN MECHANOBIOLOGY, cilt.20, sa.5, ss.1709-1722, 2021 (SCI-Expanded)
- II. **Modeling natural gas-carbon dioxide system for solid-liquid-vapor phase behavior**  
AVCI M., Panuganti S. R., Gong K., Cox K. R., Vargas F. M., Chapman W. G.  
Journal of Natural Gas Science and Engineering, cilt.45, ss.738-746, 2017 (SCI-Expanded)
  - III. **An Approach for Assessing Turbulent Flow Damage to Blood in Medical Devices**  
AVCI M., Papavassiliou D. V., O'Rear E. A.  
Journal of Biomechanical Engineering, cilt.139, sa.1, 2017 (SCI-Expanded)
  - IV. **Hemolysis Related to Turbulent Eddy Size Distributions Using Comparisons of Experiments to Computations**  
AVCI M., O'Rear E. A., Papavassiliou D. V.  
Artificial Organs, cilt.39, sa.12, 2015 (SCI-Expanded)
  - V. **Hemodynamics of the renal artery ostia with implications for their structural development and efficiency of flow**  
Mcintosh W. H., AVCI M., Down L. A., Papavassiliou D. V., O'Rear E. A.  
Biorheology, cilt.52, sa.4, ss.257-268, 2015 (SCI-Expanded)
  - VI. **Studies of methyldiethanolamine process simulation and parameters optimization for high-sulfur gas sweetening**  
Qiu K., Shang J., AVCI M., Li T., Chen S., Zhang L., Gu X.  
Journal of Natural Gas Science and Engineering, cilt.21, ss.379-385, 2014 (SCI-Expanded)
  - VII. **A simulation study on the impact of operating conditions on desulphurisation selectivity in high-sulphur gas sweetening**  
Qiu K., Zhu L., Bagajewicz M., Kim S. Y., AVCI M.  
International Journal of Oil, Gas and Coal Technology, cilt.6, sa.3, ss.348-366, 2013 (SCI-Expanded)

## **Diğer Dergilerde Yayınlanan Makaleler**

- I. **Sublethal Damage to Erythrocytes during Blood Flow**  
AVCI M., O'rear E. A., Foster K. M., Papavassiliou D. V.  
Fluids, cilt.7, sa.2, 2022 (ESCI)
- II. **Reynolds stresses and hemolysis in turbulent flow examined by threshold analysis**  
AVCI M., O'Rear E. A., Papavassiliou D. V.  
Fluids, cilt.1, sa.4, 2016 (Scopus)

## **Kitap & Kitap Bölümleri**

- I. **Metabolomics in Biomarker Identification for Cardiovascular Diseases**  
AVCI M.  
Metabolomics and Clinical Approach, Daştan, Sevgi Durna; Daştan, Taner, Editör, Nova science publisher, ss.297-308, 2023
- II. **Computational Modeling of Epigenetics**  
AVCI M.  
Epigenetics: Beyond the Genetics, Daştan, Sevgi Durna; Yurtcu, Nazan, Editör, Nova Science Publishers, New York, ss.95-104, 2022

## **Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar**

- I. **MODELING BLOOD FLOW FOR VARYING DEGREES OF STENOSIS IN VESSELS BY USING COMPUTATIONAL FLUID DYNAMICS (CFD)**

Saraçoğlu Kaya B., Avcı M.

2nd International Congress On Food Researches, ICONFOOD'23, Sivas, Türkiye, 16 - 18 Ekim 2023, ss.314-319

- II. **Investigation of Von Willebrand factor and Thrombosis in Medical Devices by using Computational Fluid Dynamics**  
ÖZTÜRK M.  
1. Uluslararası Malatya Uygulamalı Bilimler Kongresi, 20 - 22 Aralık 2019, cilt.2
- III. **Validation of a New Computational Fluid Dynamics Model to Predict Turbulent Flow Damage for the US FDA Critical Path Initiative Centrifugal Blood Pump**  
ÖZTÜRK M., O'Rear E. A., Papavassiliou D. V.  
The American Institute of Chemical Engineers (AIChE), Orlando, FL, Amerika Birleşik Devletleri, 10 - 15 Kasım 2019
- IV. **A Computational Fluid Dynamics Model to Predict Turbulent Flow Damage For The US FDA Critical Path Initiative Centrifugal Blood Pump**  
ÖZTÜRK M., O'Rear E. A., Papavassiliou D. V.  
31st Annual Cardiologist Conference, Roma, İtalya, 17 - 19 Eylül 2019, cilt.8
- V. **A Computational Fluid Dynamics Model to Predict Turbulent Flow Damage in Medical Devices**  
ÖZTÜRK M., O'Rear E. A., Papavassiliou D. V.  
The American Institute of Chemical Engineers (AIChE), San-Francisco, Kostarika, 13 - 18 Kasım 2016
- VI. **Effects of Turbulent Eddies on Hemolysis in a Centrifugal Blood Pump**  
ÖZTÜRK M., O'Rear E. A., HECK M., JAMES M. E., Papavassiliou D. V.  
The Biomedical Engineering Society (BMES), Minneapolis, MN, Amerika Birleşik Devletleri, 5 - 08 Ekim 2016
- VII. **An Empirical Model To Estimate Blood Damage In Turbulent Flow In Medical Devices**  
ÖZTÜRK M., O'Rear E. A., Papavassiliou D. V.  
The American Society for Artificial Internal Organs (ASAIO), San-Francisco, Kostarika, 15 - 18 Haziran 2016
- VIII. **Effect of Reynolds and viscous stress, and Kolmogorov length scale on hemolysis**  
ÖZTÜRK M., O'Rear E. A., Papavassiliou D. V.  
The American Institute of Chemical Engineers (AIChE), Salt Lake City, UT, Amerika Birleşik Devletleri, 8 - 13 Kasım 2015
- IX. **Effect of Reynolds Stresses on Hemolysis**  
ÖZTÜRK M., Snyder T., O'Rear E. A., Papavassiliou D. V.  
The American Society for Artificial Internal Organs (ASAIO), Chicago, IL, Amerika Birleşik Devletleri, 24 - 27 Haziran 2015
- X. **Applicability of Reynolds, Total, Viscous and Wall Shear Stresses in Different Power Law Models.**  
ÖZTÜRK M., Snyder T., O'Rear E. A., Papavassiliou D. V.  
The American Society for Artificial Internal Organs (ASAIO), Chicago, IL, Amerika Birleşik Devletleri, 24 - 27 Haziran 2015
- XI. **Eddy Analysis for Hemolysis in Turbulent Flows**  
O'Rear E. A., ÖZTÜRK M., Papavassiliou D. V.  
The International Congress of Biorheology - International Conference on Clinical Hemorheology (ISB-ISCH), Seoul, Güney Kore, 24 Mayıs - 28 Haziran 2015
- XII. **Turbulence effects on hemolysis by revisiting experiments with LES computations**  
ÖZTÜRK M., O'Rear E. A., Papavassiliou D. V.  
The American Physical Society (APS), Boston, MA, Amerika Birleşik Devletleri, 2 - 06 Mart 2015
- XIII. **Relationship between Turbulent Quantities and Hemolysis**  
ÖZTÜRK M., O'Rear E. A., Papavassiliou D. V.  
The American Institute of Chemical Engineers (AIChE), Atlanta, GA, Amerika Birleşik Devletleri, 16 - 21 Kasım 2014
- XIV. **Turbulent eddy properties from CFD and hemolysis re-examined**  
ÖZTÜRK M., O'Rear E. A., Papavassiliou D. V.  
The Biomedical Engineering Society (BMES), San-Antonio, Kuzey Mariana Adaları, 22 - 25 Ekim 2014
- XV. **Effects of Turbulent Eddy Structures on Hemolysis**  
ÖZTÜRK M., Schmidtke D., Snyder T., O'Rear E. A., Papavassiliou D. V.

The American Society for Artificial Internal Organs (ASAIO), Washington, Kiribati, 18 - 21 Haziran 2014

**XVI. Hemolysis in Turbulent Flow**

ÖZTÜRK M., O'Rear E. A., Papavassiliou D. V.

The American Chemical Society Annual Pentasectional Meeting (ACS), Stillwater, OK, Amerika Birleşik Devletleri, 12 - 13 Nisan 2014

**XVII. Simulation of Turbulence Effects on Red Blood Cell Trauma**

ÖZTÜRK M., O'Rear E. A., Papavassiliou D. V.

The American Institute of Chemical Engineers (AIChE), San-Francisco, Kostarika, 3 - 08 Kasım 2013

**XVIII. Gas Pipeline Leak Detection Using Rigorous Hydraulics and Global Optimization.**

ÖZTÜRK M., Kim S. Y., Bagajewicz M.

The American Institute of Chemical Engineers (AIChE), Pittsburgh, PA, Amerika Birleşik Devletleri, 28 Ekim - 02 Kasım 2012

**XIX. New Approach to Gas Hydraulics Calculations**

ÖZTÜRK M., Hacıoğlu L., Bagajewicz M.

The American Institute of Chemical Engineers (AIChE), Pittsburgh, PA, Amerika Birleşik Devletleri, 28 Ekim - 02 Kasım 2012

## **Desteklenen Projeler**

Avcı M., DAŞTAN T., Diğer Uluslararası Fon Programları, Emerging Approaches in Epigenetics, 2022 - 2023

Avcı M., Yükseköğretim Kurumları Destekli Proje, Santrifüjlü Kalp Pompasında Hemoliz Hesaplanması, 2019 - 2020

## **Metrikler**

Yayın: 30

Atf (WoS): 82

Atf (Scopus): 107

H-İndeks (WoS): 5

H-İndeks (Scopus): 6

## **Akademi Dışı Deneyim**

İlçe Milli Eğitim Müdürlüğü

The University of Oklahoma

The University of Oklahoma