

Asst. Prof. MESUDE AVCI

Personal Information

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International Researcher IDs

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

ScopusID: 55004097700

Yoksis Researcher ID: 293762

Education Information

Doctorate, University of Oklahoma, United States Of America 2010 - 2015

Postgraduate, Rice University, United States Of America 2008 - 2010

Undergraduate, Inonu University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Turkey 2002 - 2006

Dissertations

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

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

Research Areas

Biomedical Engineering, Chemical Engineering and Technology

Academic Titles / Tasks

Assistant Professor, Sivas Cumhuriyet University, Mühendislik Fakültesi, Kimya Mühendisliği, 2019 - Continues

Lecturer, Sivas Cumhuriyet University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, 2018 - 2019

Courses

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

Kimyasal Teknoloji Laboratuvarı, Undergraduate, 2019 - 2020

Malzeme, Undergraduate, 2019 - 2020

Published journal articles indexed by SCI, SSCI, and AHCI

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, vol.20, no.5, pp.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, vol.45, pp.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, vol.139, no.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, vol.39, no.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, vol.52, no.4, pp.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, vol.21, pp.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, vol.6, no.3, pp.348-366, 2013 (SCI-Expanded)

Articles Published in Other Journals

- I. **Sublethal Damage to Erythrocytes during Blood Flow**
AVCI M., O'rear E. A., Foster K. M., Papavassiliou D. V.
Fluids, vol.7, no.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, vol.1, no.4, 2016 (Scopus)

Books & Book Chapters

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

Refereed Congress / Symposium Publications in Proceedings

- 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, Turkey, 16 - 18 October 2023, pp.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 December 2019, vol.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, United States Of America, 10 - 15 November 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, Italy, 17 - 19 September 2019, vol.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, Costa Rica, 13 - 18 November 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, United States Of America, 5 - 08 October 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, Costa Rica, 15 - 18 June 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, United States Of America, 8 - 13 November 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, United States Of America, 24 - 27 June 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, United States Of America, 24 - 27 June 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, South Korea, 24 May - 28 June 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, United States Of America, 2 - 06 March 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, United States Of America, 16 - 21 November 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, Northern Mariana Islands, 22 - 25 October 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 (ASAIIO), Washington, Kiribati, 18 - 21 June 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, United States Of America, 12 - 13 April 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, Costa Rica, 3 - 08 November 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, United States Of America, 28 October - 02 November 2012

XIX. New Approach to Gas Hydraulics Calculations

ÖZTÜRK M., Hacıoğlu L., Bagajewicz M.

The American Institute of Chemical Engineers (AIChE), Pittsburgh, PA, United States Of America, 28 October - 02 November 2012

Supported Projects

Avcı M., DAŞTAN T., Other International Funding Programs, Emerging Approaches in Epigenetics, 2022 - 2023

Avcı M., Project Supported by Higher Education Institutions, Santrifüjlü Kalp Pompasında Hemoliz Hesaplanması, 2019 - 2020

Metrics

Publication: 30

Citation (WoS): 82

Citation (Scopus): 107

H-Index (WoS): 5

H-Index (Scopus): 6

Non Academic Experience

İlçe Milli Eğitim Müdürlüğü

The University of Oklahoma

The University of Oklahoma