

Assoc. Prof. İNCİ AYRANCI TANSIK

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: ABB-8744-2020

ScopusID: 47961818400

Yoksis Researcher ID: 223370

Education Information

Doctorate, University of Alberta, Mühendislik, Kimya ve Malzeme Mühendisliği, Canada 2007 - 2012

Undergraduate, Ankara University, Faculty Of Engineering, Department Of Chemistry Engineering, Turkey 2003 - 2007

Dissertations

Doctorate, Suspension of mixtures of solids in stirred tanks: problem definition and model identification, University of Alberta, Mühendislik Fakültesi, Kimya ve Malzeme Mühendisliği, 2012

Research Areas

Fluid Mechanics

Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2021 - Continues

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2016 - 2021

Lecturer, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2014 - 2016

Courses

Chemical Engineering Laboratory III, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015

FLUID MECHANICS, Undergraduate, 2021 - 2022, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016

Chemical Engineering Laboratory I, Undergraduate, 2021 - 2022

Thermodynamics I, Undergraduate, 2020 - 2021, 2019 - 2020, 2017 - 2018, 2015 - 2016, 2014 - 2015

PROCESS CONTROL, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016

Advising Theses

- Ayrancı Tansık İ., Analysis of solids distribution in multimodal slurries at high concentrations., Doctorate, A.FIRAT(Student), Continues
- Ayrancı Tansık İ., THE EFFECT OF FEDING CONDITIONS ON THE DROP SIZE OF PICKERING EMULSIONS IN AN UNBAFFLED STIRRED TANKS, Postgraduate, Y.Özdemir(Student), Continues
- Ayrancı Tansık İ., A scale-up study of solid-liquid mixing tanks in terms of cloud height, Doctorate, E.ALTINTAŞ(Student), Continues
- AYRANCI TANSIK İ., The effect of feeding conditions on the drop size of pickering emulsions in unbaffled stirred tanks, Postgraduate, M.YAĞMUR(Student), 2022
- Ayrancı Tansık İ., Uludağ Y., ANALYSIS OF CLOUD HEIGHT IN CONCENTRATED SOLID-LIQUID MIXTURES USING ULTRASOUND DOPPLER VELOCIMETRY, Postgraduate, A.FIRAT(Student), 2021
- Ayrancı Tansık İ., THE EFFECT OF PARTICLE PROPERTIES AND SOLIDS CONCENTRATION ON THE CLOUD HEIGHT IN A TALL STIRRED TANK, Postgraduate, E.Altıntaş(Student), 2021
- Ayrancı Tansık İ., Parlaktuna M., The effect of experimental conditions on natural gas hydrate formation, Doctorate, S.LONGINOS(Student), 2020
- Ayrancı Tansık İ., EFFECT OF HYDRODYNAMICS ON THE PRODUCTION OF PICKERING EMULSIONS IN UNBAFFLED STIRRED TANKS, Postgraduate, Ö.Demirdoğan(Student), 2019
- Ayrancı Tansık İ., INVESTIGATION OF THE EFFECT OF HYDRODYNAMICS ON THE PRODUCTION OF PICKERING EMULSIONS IN BAFFLED STIRRED TANKS, Postgraduate, U.Kayode(Student), 2019
- AYRANCI TANSIK İ., The effect of dispersed phase feed rate on the production of pickering emulsions, Postgraduate, D.DÖNMEZ(Student), 2018
- Ayrancı Tansık İ., THE EFFECT OF PARTICLE SHAPE ON JUST-SUSPENDED SPEED OF MIXTURES OF SOLIDS AT HIGH CONCENTRATIONS, Postgraduate, B.Kütükcü(Student), 2017

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Analysis of core velocity in the presence of solids using UDV and improved model for cloud height in stirred tanks**
Fırat Taşkın A., ULUDAĞ Y., AYRANCI TANSIK İ.
Chemical Engineering Science, vol.285, 2024 (SCI-Expanded)
- II. **An empirical model for the prediction of cloud height**
Altintas E., AYRANCI TANSIK İ.
Chemical Engineering Research and Design, vol.202, pp.327-335, 2024 (SCI-Expanded)
- III. **Cloud height in stirred tanks: Identification of limitations and clarification of the definition**
ALTINTAŞ E., AYRANCI TANSIK İ.
Chemical Engineering Research and Design, vol.190, pp.395-406, 2023 (SCI-Expanded)
- IV. **Turbulence damping above the cloud height in suspensions of concentrated slurries in stirred tanks**
Ayrancı Tansık İ., Kresta S. M.
AIChE JOURNAL, vol.67, no.7, 2021 (SCI-Expanded)
- V. **Effect of dispersed phase feed time on the droplet size of Pickering emulsions produced in a stirred tank**
Donmez D., AYRANCI TANSIK İ.
AIChE JOURNAL, vol.66, no.6, 2020 (SCI-Expanded)
- VI. **The effect of hydrodynamic parameters on the production of Pickering emulsions in a baffled stirred tank**
Abdulrasaq U. K., Ayrancı İ.

- AICHE JOURNAL, vol.65, 2019 (SCI-Expanded)
- VII. **Application of pressure gauge measurement method beyond its limits**
Kutukcu B., AYRANCI TANSIK İ.
CHEMICAL ENGINEERING RESEARCH & DESIGN, vol.141, pp.170-180, 2019 (SCI-Expanded)
- VIII. **Applicability of the power model to mixed slurries with non-spherical particles and networking effect**
Kutukcu B., AYRANCI TANSIK İ.
CHEMICAL ENGINEERING RESEARCH & DESIGN, vol.138, pp.314-330, 2018 (SCI-Expanded)
- IX. **Negative Impact of High Stirring Speed in Laboratory-Scale Three-Phase Hydrogenations**
Ayranci İ., Kresta S., Shen J., Semagina N.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.53, no.46, pp.18091-18094, 2014 (SCI-Expanded)
- X. **Critical analysis of Zwietering correlation for solids suspension in stirred tanks**
Ayranci İ., Kresta S. M.
CHEMICAL ENGINEERING RESEARCH & DESIGN, vol.92, pp.413-422, 2014 (SCI-Expanded)
- XI. **Prediction of just suspended speed for mixed slurries at high solids loadings**
Ayranci İ., Ng T., Etchells A. W., Kresta S. M.
CHEMICAL ENGINEERING RESEARCH & DESIGN, vol.91, no.2, pp.227-233, 2013 (SCI-Expanded)
- XII. **Effect of geometry on the mechanisms for off-bottom solids suspension in a stirred tank**
Ayranci İ., Machado M. B., Madej A. M., Derksen J. J., Nobes D. S., Kresta S. M.
CHEMICAL ENGINEERING SCIENCE, vol.79, pp.163-176, 2012 (SCI-Expanded)
- XIII. **Design rules for suspending concentrated mixtures of solids in stirred tanks**
Ayranci İ., Kresta S. M.
CHEMICAL ENGINEERING RESEARCH & DESIGN, vol.89, pp.1961-1971, 2011 (SCI-Expanded)

Articles Published in Other Journals

- I. **The Effect of Length of The Baffle on The Power Number**
Ayranci Tansik İ., Gök G.
Bitlis Eren Üniversitesi Fen Bilimleri Dergisi, vol.9, no.4, pp.1641-1648, 2020 (Peer-Reviewed Journal)
- II. **The Effect of the Change of Impeller Speed on the Droplet Size Distribution of Pickering Emulsions in a Baffled Stirred Tank**
Abdulrasaq U. K., Ayranci Tansik İ.
Academic Platform-Journal of Engineering and Science, vol.8, no.1, pp.181-192, 2020 (Peer-Reviewed Journal)
- III. **The Effect of the Change of Impeller Speed on the Droplet Size Distribution of Pickering Emulsions in a Baffled Stirred Tank**
Abdulrasaq U. K., Ayranci İ.
Academic Platform-Journal of Engineering and Science, vol.8, no.1, pp.181-192, 2020 (Peer-Reviewed Journal)
- IV. **Psychrometric charts in color: An example of active learning for chemical engineering students and faculty members**
Kresta S., AYRANCI TANSIK İ.
EDUCATION FOR CHEMICAL ENGINEERS, vol.22, pp.14-19, 2018 (ESCI)

Refereed Congress / Symposium Publications in Proceedings

- I. **Tanecik Özelliklerinin ve Tanecik Konsantrasyonunun Bulut Yüksekliği Üzerindeki Etkilerinin Uzun Karıştırma Tanklarında İncelenmesi**
Altıntaş E., Ayranci Tansik İ.
Ulusal Kimya Mühendisliği Kongresi (UKMK), Konya, Turkey, 10 - 12 June 2021, pp.35
- II. **Derişik Katı-Sıvı Karışımlarında Hız Profiline Ultrasonik Doppler Hız Ölçüm Tekniği Kullanılarak**

Analizi ve Hız Profilinden Bulut Yüksekliğinin Tayini

Taşkın A. F., Uludağ Y., Ayrancı Tansık İ.

Ulusal Kimya Mühendisliği Kongresi (UKMK), Konya, Turkey, 10 - 12 June 2021, pp.33

- III. **Engelli Karıştırılmalı Tanklarda Hidrodinamiğin Pickering Emülsiyonları Üretimi Üzerine Etkisi**
Abdulrasaq U. K., Ayrancı Tansık İ.
13. Ulusal Kimya Mühendisliği Kongresi, Van, Turkey, 3 - 06 September 2018, pp.147
- IV. **ENGELLİ KARIŞTIRMALI TANKLARDA HİDRODİNAMİĞİN PICKERING EMÜLSİYONLARI ÜRETİMİ ÜZERİNE ETKİSİ**
Abdulrasaq U. K., AYRANCI TANSIK İ.
13. Ulusal Kimya Mühendisliği Kongresi, Turkey, 3 - 06 September 2018
- V. **HİDRODİNAMİK KOŞULLARIN ENGELSİZ TANKLARDA ÜRETİLEN PICKERING EMÜLSİYONLARI ÜZERİNE ETKİSİ**
Demirdoğan Ö., Ayrancı Tansık İ.
13. Ulusal Kimya Mühendisliği Kongresi, Van, Turkey, 3 - 06 September 2018, pp.114-115
- VI. **JUST SUSPENDED SPEED OF MIXED SLURRIES WITH NON-SPHERICAL PARTICLES**
Kütükcü B., AYRANCI İ.
10th World Congress of Chemical Engineering, 1 - 05 October 2017
- VII. **AN UNSTABILITY IN THE FORMATION OF PICKERING EMULSIONS**
AYRANCI İ., Fradette L.
NAMF (North Americal Mixing Forum), Mixing XXV, 26 June - 01 July 2016
- VIII. **SUSPENDING MIXTURES OF SOLIDS IN STIRRED TANKS COMPLEXITIES AND SOLUTIONS**
Kresta S., AYRANCI İ.
10th European Congress of Chemical Engineering, 27 September - 01 October 2015
- IX. **Limitations of the Zwietering correlation and the resulting form for a new approach based on power at just suspended speed**
Kresta S. M., AYRANCI İ.
15th European Conference of Mixing, 28 June - 03 July 2015
- X. **Mixing of viscous liquids and large concentrations of spherical particles in stirred tanks**
Lassaigne M., BRUNO B., AYRANCI İ., FRADETTE L., FRANÇOIS B.
North American Mixing Forum (NAMF) Conference Mixing XXIV, 22 - 27 June 2014
- XI. **Correlations for prediction of solids suspension in stirred tanks limitations of Zwietering correlation and path forward**
AYRANCI İ., Kresta S.
North American Mixing Forum (NAMF) Mixing XXIV, 22 - 27 June 2014
- XII. **The effect of impeller configuration and impeller speed on the yield of three phase hydrogenation reactions**
AYRANCI İ., KRESTA S., SHEN J., SEMAGINA N.
23rd Canadian Symposium on Catalysis, 11 - 14 May 2014
- XIII. **An unusual state during the production of solid stabilized emulsions in stirred tanks paste**
AYRANCI İ., FRADETTE L.
American Institute of Chemical Engineers (AIChE), 3 - 08 November 2013
- XIV. **The effect of time on the form and stability of Pickering Emulsions**
AYRANCI İ., FRADETTE L.
9th World Congress of Chemical Engineering (WCCE9), 18 August - 23 November 2013
- XV. **A design rule for prediction of the just suspended speed of mixed slurries**
AYRANCI İ., NG T., GARCÍA M., ETHELLES A. I., KRESTA S.
The American Institute of Chemical Engineers (AIChE) Annual Meeting, 16 - 21 October 2011
- XVI. **Intentional Course Design and Outcomes Assessment Shifting the Curve in Material and Energy Balances Course**
AYRANCI İ., SUZANNE K.
The American Institute of Chemical Engineers (AIChE) Annual Meeting, 16 - 21 October 2011

- XVII. **Bi modal no more shifting the curve in material and energy balances courses**
AYRANCI İ., KRESTA S.
American Society for Engineering Education (ASEE) Annual Conference and Exposition, 26 - 29 June 2011
- XVIII. **The effect of particle properties and solids loadings on suspension of mixed solids**
AYRANCI İ., KRESTA S.
The American Institute of Chemical Engineers (AIChE) Annual Meeting, 7 - 12 November 2010
- XIX. **Effect of geometry on the mechanisms for off bottom solids suspension**
AYRANCI İ., MACHADO M., DERKSEN J. J., NOBES D. S., KRESTA S.
North American Mixing Forum (NAMF) Conference Mixing XXII, 20 - 25 June 2010
- XX. **Energy Balances tools for structured problem solving and images for visual learners**
AYRANCI İ., KRESTA S.
The American Institute of Chemical Engineers (AIChE) Annual Meeting, 8 - 13 November 2009
- XXI. **Mixed slurry behavior in stirred tanks with high solids loadings**
AYRANCI İ., DERKSEN J. J., KRESTA S.
8th World Congress of Chemical Engineering (WCCE8), 23 - 27 August 2009
- XXII. **Extracting and organizing information from images structured problem solving tools**
KRESTA S., AYRANCI İ., AUBİN J.
Gordon Research Conference, Visualization in Science and Education, 26 - 31 July 2009

Supported Projects

- AYRANCI TANSIK İ., DEMİRDOĞAN Ö., Project Supported by Higher Education Institutions, PICKERING EMÜLSİYONLARININ ÜRETİMİ İÇİN KARIŞTIRMALI TANK TASARIMI, 2018 - Continues
- AYRANCI TANSIK İ., TUBITAK Project, Katı-Sıvı Fazlı Karıştırmalı Tankların Tasarımı: Bulut Yüksekliği ve Tanecikli Ortam Hız Profilleri, 2019 - 2022
- AYRANCI TANSIK İ., TUBITAK Project, Doğal Gaz Hidratı Üretimi Reaktörü Tasarımı Ve Kinetik Analizi, 2017 - 2020
- AYRANCI TANSIK İ., TUBITAK Project, Pickering Emülsiyonlarının Üretimi İçin Karıştırmalı Tank Tasarımı, 2017 - 2019
- AYRANCI TANSIK İ., Dönmez D., Project Supported by Higher Education Institutions, Dağılan faz besleme hızının Pickering emülsiyonu oluşumuna etkisi, 2017 - 2019
- AYRANCI TANSIK İ., Project Supported by Higher Education Institutions, KARIŞTIRMALI TANKLARDA PICKERING EMÜLSİYONLARININ KATASTROFİK FAZ EVRİLMESİ, 2016 - 2017
- AYRANCI TANSIK İ., TUBITAK Project, İki farklı partikül fazından oluşan karışımların sıvı içindeki süspansiyonuna partikül şeklinin etkisi: minimum süspansiyon karıştırıcı hızı ve güç sayısı, 2015 - 2017
- AYRANCI TANSIK İ., Project Supported by Higher Education Institutions, FEN BİLİMLERİ ENSTİTÜSÜ/LİSANSÜSTÜ TEZ PROJESİ, 2014 - 2016

Scientific Refereeing

- CHEMICAL ENGINEERING RESEARCH AND DESIGN, Journal Indexed in SCI-E, December 2022
- Chemical Engineering Science: X, Journal Indexed in SCI-E, July 2022
- CANADIAN JOURNAL OF CHEMICAL ENGINEERING, Journal Indexed in SCI-E, May 2022
- INDUSTRIAL AND ENGINEERING CHEMISTRY RESEARCH, Journal Indexed in SCI-E, February 2022
- Chemical Engineering Science, Journal Indexed in SCI-E, December 2021
- AICHE JOURNAL, Journal Indexed in SCI-E, April 2021
- INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, Journal Indexed in SCI-E, January 2021
- CHEMICAL ENGINEERING SCIENCE, Journal Indexed in SCI-E, December 2020
- CHEMICAL ENGINEERING SCIENCE, Journal Indexed in SCI-E, September 2020
- INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, Journal Indexed in SCI-E, December 2019
- INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, Journal Indexed in SCI-E, November 2019

Canadian Journal Of Chemical Engineering, SCI Journal, November 2019
Chemical Engineering Research & Design, Journal Indexed in SCI-E, October 2019
Aiche Journal, SCI Journal, September 2019
Industrial & Engineering Chemistry Research, SCI Journal, September 2019
Particulate Science And Technology, Journal Indexed in SCI-E, September 2019
Academic Platform-Journal of Engineering and Science, National Scientific Refreed Journal, June 2019
Chemical Engineering Research & Design, SCI Journal, January 2019
Chemical Engineering Research & Design, Journal Indexed in SCI-E, November 2018
Canadian Journal Of Chemical Engineering, Journal Indexed in SCI-E, May 2018
Chemical Engineering Research & Design, Journal Indexed in SCI-E, April 2018
Chemical Engineering Research & Design, Journal Indexed in SCI-E, February 2018

Scientific Consultations

YEDİC MÜHENDİSLİK DANIŞMANLIK TİCARET LİMİTED ŞİRKETİ, Project Consultancy, Middle East Technical University,
Faculty of Engineering, Department of Chemical Engineering, Turkey, 2022 - 2023

Metrics

Publication: 40
Citation (WoS): 163
Citation (Scopus): 150
H-Index (WoS): 5
H-Index (Scopus): 4

Non Academic Experience

Polytechnique Montreal