

# Prof. YUSUF ULUDAĞ

## Personal Information

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## Education Information

Doctorate, University Of California, Davis, Kimya Mühendisliği, United States Of America 1996 - 2001

Postgraduate, Middle East Technical University, Graduate School of Natural and Applied Sciences, Kimya Mühendisliği (YI) (Tezli), Turkey 1992 - 1995

Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, Turkey 1987 - 1992

## Foreign Languages

English, C1 Advanced

## Research Areas

Fluid Mechanics, Heat Transfer, Momentum Transport, Transport Events

## Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2009 - Continues

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2002 - 2009

Lecturer PhD, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 2001 - 2002

Research Assistant, University Of California, Davis, Mühendislik, Kimya Mühendisliği Ve Malzeme Bilimleri Bölümü, 1996 - 2001

Research Assistant, Middle East Technical University, Faculty of Engineering, Department of Chemical Engineering, 1992 - 1996

## Advising Theses

ULUDAĞ Y., Modelling and simulation of thin film semiconductor metal oxide gas sensor response, Postgraduate, B.Atman(Student), 2019

ULUDAĞ Y., Particle size characterization of suspensions using ultrasonic method, Postgraduate, E.Özçelik(Student), 2019

ULUDAĞ Y., Mathematical modeling and simulation of suspension droplet drying, Postgraduate, A.Furkan(Student), 2019

KARAKAŞ G., ULUDAĞ Y., Mathematical and computational modelling of chemical heat pumps, Postgraduate, T.GÜNEŞ(Student), 2018

KALIPÇILAR H., ULUDAĞ Y., Experimental and theoretical aspects of membrane based water cooling system, Postgraduate, H.KULAÇ(Student), 2017

ULUDAĞ Y., Modeling effects of material properties and composition on ultrasound propagation, Doctorate, O.ÖZKÖK(Student), 2017

ULUDAĞ Y., Computational investigation of hydrodynamics of viscoelastic fluids flowing around square cylinder and complex fluid rheology via magnetic resonance imaging, Doctorate, G.BENGÜSU(Student), 2016

ULUDAĞ Y., Theoretical and Experimental Investigation of Ultrasound Propagation in Packed Beds, Postgraduate, Z.KARAKAŞ(Student), 2016

ULUDAĞ Y., Investigation of fluid rheology effects on ultrasound propagation, Postgraduate, O.ÖZKÖK(Student), 2012

ULUDAĞ Y., Experimental investigation of agitation hydrodynamics and mixing-time of non-Newtonian solutions, Postgraduate, B.ŞEN(Student), 2011

KARAKAŞ G., ULUDAĞ Y., Mathematical modeling of adsorption/desorption systems for chemical heat pumps, Postgraduate, A.ONUR(Student), 2011

ULUDAĞ Y., Experimental and theoretical investigation of complex flows by ultrasound doppler velocimetry, Doctorate, V.KÖSELİ(Student), 2009

KARASÖZEN B., ULUDAĞ Y., Numerical investigation of the viscoelastic fluids, Doctorate, K.YAPICI(Student), 2008

BAYRAM G., ULUDAĞ Y., Production and development of de/anti icing fluids for aircraft, Postgraduate, B.ERDOĞAN(Student), 2008

ÖZGEN S., ULUDAĞ Y., Development of de-icing and anti-icing solutions for aircraft on ground and analysis of their flow instability characteristics, Postgraduate, D.SİNAN(Student), 2008

ULUDAĞ Y., Experimental investigation of the agitation of complex fluids, Postgraduate, Ö.YAZICIOĞLU(Student), 2006

ULUDAĞ Y., Modeling and numerical analysis of single droplet drying, Postgraduate, N.DALMAZ(Student), 2005

ÇALIK P., ULUDAĞ Y., Obtaining durable enzyme powder via spray drying, Postgraduate, A.NAMALDI(Student), 2005

ULUDAĞ Y., Experimental investigation of drag reduction effects of polymer additives on turbulent pipe flow, Postgraduate, Ş.Zeybek(Student), 2005

BAYRAM G., ULUDAĞ Y., Experimental investigation of drag reduction effects of polymer additives on turbulent pipe flow, Postgraduate, Ş.ZEYBEK(Student), 2005

ULUDAĞ Y., Numerical investigation of stirred tank hydrodynamics, Postgraduate, K.YAPICI(Student), 2003

## Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- I. **Numerical and Experimental Investigation of Newtonian Flow around a Confined Square Cylinder**  
Tezel G. B. , YAPICI K., ULUDAĞ Y.  
PERIODICA POLYTECHNICA-CHEMICAL ENGINEERING, vol.63, no.1, pp.190-199, 2019 (Journal Indexed in SCI)
- II. **Flow Characterization of Viscoelastic Fluids around Square Obstacle**  
Tezel G. B. , YAPICI K., ULUDAĞ Y.  
PERIODICA POLYTECHNICA-CHEMICAL ENGINEERING, vol.63, no.1, pp.246-257, 2019 (Journal Indexed in SCI)
- III. **DEPENDENCY OF NANOFUID RHEOLOGY ON PARTICLE SIZE AND CONCENTRATION OF VARIOUS METAL OXIDE NANOPARTICLES**  
YAPICI K., Osturk O., ULUDAĞ Y.  
BRAZILIAN JOURNAL OF CHEMICAL ENGINEERING, vol.35, no.2, pp.575-586, 2018 (Journal Indexed in SCI)
- IV. **Rheological characterization of polyethylene glycol based TiO<sub>2</sub> nanofluids**  
YAPICI K., KEKLİKCİOĞLU ÇAKMAK N., İlhan N., ULUDAĞ Y.  
KOREA-AUSTRALIA RHEOLOGY JOURNAL, vol.26, no.4, pp.355-363, 2014 (Journal Indexed in SCI)
- V. **Utilization of I-Q signals of ultrasound Doppler velocimeter to obtain 1-D turbulence quantities in pipe flow**  
KÖSELİ V., ULUDAĞ Y.  
FLOW MEASUREMENT AND INSTRUMENTATION, vol.39, pp.25-34, 2014 (Journal Indexed in SCI)
- VI. **Theoretical and experimental investigation of fluid rheology effects on modulated ultrasound propagation**

- Ozkok O., ULUDAĞ Y.  
ULTRASONICS, vol.54, no.7, pp.2034-2041, 2014 (Journal Indexed in SCI)
- VII. **Experimental investigation of drag reduction effects of polymer additives on turbulent pipe flow using ultrasound Doppler velocimetry**  
Zeybek Vural S., BAYRAM G., ULUDAĞ Y.  
TURKISH JOURNAL OF CHEMISTRY, vol.38, no.1, pp.142-151, 2014 (Journal Indexed in SCI)
- VIII. **Computational analysis of hydrodynamics of shear-thinning viscoelastic fluids in a square lid-driven cavity flow**  
YAPICI K., ULUDAĞ Y.  
KOREA-AUSTRALIA RHEOLOGY JOURNAL, vol.25, no.4, pp.243-260, 2013 (Journal Indexed in SCI)
- IX. **FINITE VOLUME SIMULATION OF 2-D STEADY SQUARE LID DRIVEN CAVITY FLOW AT HIGH REYNOLDS NUMBERS**  
YAPICI K., ULUDAĞ Y.  
BRAZILIAN JOURNAL OF CHEMICAL ENGINEERING, vol.30, no.4, pp.923-937, 2013 (Journal Indexed in SCI)
- X. **Modeling and computational simulation of adsorption based chemical heat pumps**  
YURTSEVER A. O. , KARAKAŞ G., ULUDAĞ Y.  
APPLIED THERMAL ENGINEERING, vol.50, no.1, pp.401-407, 2013 (Journal Indexed in SCI)
- XI. **Numerical Analysis of Viscoelastic Fluids in Steady Pressure-Driven Channel Flow**  
YAPICI K., KARASÖZEN B., ULUDAĞ Y.  
JOURNAL OF FLUIDS ENGINEERING-TRANSACTIONS OF THE ASME, vol.134, no.5, 2012 (Journal Indexed in SCI)
- XII. **Theoretical investigation of effects of flow oscillations on ultrasound Doppler velocity measurements**  
Koseli V., ULUDAĞ Y.  
ULTRASONICS, vol.52, no.2, pp.244-254, 2012 (Journal Indexed in SCI)
- XIII. **Finite volume simulation of viscoelastic laminar flow in a lid-driven cavity**  
Yapici K., KARASÖZEN B., ULUDAĞ Y.  
JOURNAL OF NON-NEWTONIAN FLUID MECHANICS, vol.164, pp.51-65, 2009 (Journal Indexed in SCI)
- XIV. **Crosslinked DADMAC polymers as cationic super absorbents**  
Korpe S., Erdogan B., BAYRAM G., ÖZGEN S., ULUDAĞ Y., Bicak N.  
REACTIVE & FUNCTIONAL POLYMERS, vol.69, no.9, pp.660-665, 2009 (Journal Indexed in SCI)
- XV. **Numerical investigation of the effect of the Rushton type turbine design factors on agitated tank flow characteristics**  
Yapici K., KARASÖZEN B., Schaefer M., ULUDAĞ Y.  
CHEMICAL ENGINEERING AND PROCESSING, vol.47, no.8, pp.1346-1355, 2008 (Journal Indexed in SCI)
- XVI. **Heat and mass transfer mechanisms in drying of a suspension droplet: A new computational model**  
Dalmaz N., Ozbelge H. O. , Eraslan A. N. , Uludag Y.  
DRYING TECHNOLOGY, vol.25, pp.391-400, 2007 (Journal Indexed in SCI)
- XVII. **Effects of spray drying temperature and additives on the stability of serine alkaline protease powders**  
Namaldi A., Calik P., Uludag Y.  
DRYING TECHNOLOGY, vol.24, no.11, pp.1495-1500, 2006 (Journal Indexed in SCI)
- XVIII. **Online viscosity measurement of complex solutions using ultrasound Doppler velocimetry**  
Koseli V., Zeybek S., Uludag Y.  
TURKISH JOURNAL OF CHEMISTRY, vol.30, no.3, pp.297-305, 2006 (Journal Indexed in SCI)
- XIX. **Numerical method for optimizing stirrer configurations**  
Schaefer M., KARASÖZEN B., ULUDAĞ Y., YAPICI K., Ugur O.  
COMPUTERS & CHEMICAL ENGINEERING, vol.30, no.2, pp.183-190, 2005 (Journal Indexed in SCI)
- XX. **Effects of periodic flow fluctuations on magnetic resonance flow images**  
Uludag Y., Powell R., McCarthy M.  
AIChE JOURNAL, vol.50, no.8, pp.1662-1671, 2004 (Journal Indexed in SCI)
- XXI. **Polymer melt rheology by magnetic resonance imaging**

Uludag Y., McCarthy M., Barrall G., Powell R.

MACROMOLECULES, vol.34, no.16, pp.5520-5524, 2001 (Journal Indexed in SCI)

XXII. **Determination of heavy metal concentration in feed and permeate streams of polymer enhanced ultrafiltration process**

Muslehiddinoglu J., Uludag Y., Ozbelge H., Yilmaz L.

TALANTA, vol.46, no.6, pp.1557-1565, 1998 (Journal Indexed in SCI)

XXIII. **Effect of operating parameters on selective separation of heavy metals from binary mixtures via polymer enhanced ultrafiltration**

Muslehiddinoglu J., Uludag Y., Ozbelge H., Yilmaz L.

JOURNAL OF MEMBRANE SCIENCE, vol.140, no.2, pp.251-266, 1998 (Journal Indexed in SCI)

XXIV. **Removal of mercury from aqueous solutions via polymer-enhanced ultrafiltration**

Uludag Y., Ozbelge H., Yilmaz L.

JOURNAL OF MEMBRANE SCIENCE, vol.129, no.1, pp.93-99, 1997 (Journal Indexed in SCI)

### Articles Published in Other Journals

I. **Stress behaviour of viscoelastic flow around square cylinder**

TEZEL TANRISEVER G. B. , YAPICI K., ULUDAĞ Y.

International Journal of Chemistry and Technology, vol.3, no.1, pp.61-66, 2019 (Refereed Journals of Other Institutions)

II. **Şekil Değiştiren Uçaklar Havacılıkta Yeni Bir Devrim Yaratabilir mi?**

Yaman Y., Özgen S., Seber G., Şahin M., Bayram G., Uludağ Y., Yılmaz A.

SAvunma ve Havacılık Dergisi, vol.22, no.126, pp.125-128, 2008 (National Non-Refereed Journal)

### Refereed Congress / Symposium Publications in Proceedings

I. **Complex flow rheology analysis using Magnetic Resonance Imaging (MRI)**

TEZEL TANRISEVER G. B. , McCarthy M. J. , ULUDAĞ Y.

2nd International Euroasian Conference on Biological and Chemical Sciences, 28 - 29 June 2019

II. **Theoretical and experimental investigation of ultrasound propagation through porous medium**

KARAKAŞ Z., ULUDAĞ Y.

22nd INTERNATIONAL CONGRESS OF CHEMICAL AND PROCESS ENGINEERING CHISA 2016, Prague, Czech Republic, 28 - 30 August 2016

III. **A COMBINED EXPERIMENTAL AND COMPUTATIONAL STUDY FOR THE DESIGN OF A LOW WATER CONSUMPTION COOLING TOWER**

Dogan B., Yilmaz I., Polat O., Karabulut O., Ural A., ULUDAĞ Y., ARADAĞ ÇELEBİOĞLU S.

12th ASME Biennial Conference on Engineering Systems Design and Analysis (ESDA2014), Copenhagen, Denmark, 25 - 27 June 2014

IV. **Morphing Air Vehicle Concepts**

ÖZGEN S., YAMAN Y., ŞAHİN M., GÜÇLÜ S., KÖRPE D. S. , EVREN S., ERDOĞAN TOLGA İ., ÜNLÜSOY L., BAYRAM G., ULUDAĞ Y., et al.

UVW2010, International Unmanned Vehicle Workshop, İstanbul, Turkey, 10 - 12 June 2010

V. **ODTÜ de Sürdürülen İnsansız Hava Aracı Çalışmaları**

YAMAN Y., ÖZGEN S., ŞAHİN M., GÜÇLÜ S., VOLKAN N., EVREN S., ERDOĞAN TOLGA İ., ÜNLÜSOY L., BAYRAM G., ULUDAĞ Y., et al.

TMMOB Makina Mühendisleri Odası, V. Ulusal Uçak, Havacılık ve Uzay Mühendisliği Kurultayı, Eskişehir, Turkey, 22 - 23 May 2009

VI. **Magnetic resonance imaging of polymer melt flows**

Uludag Y., McCarthy M., Powell R., Barall G.

## Supported Projects

ULUDAĞ Y., KARAKAŞ Z., Project Supported by Higher Education Institutions, METAL TUZLARININ AMONYAK ADSORPSİYON / DESORPSİYON REAKSİYONLARINDAKİ YAPSAL DEĞİŞİMLERİN İNCELENMESİ, 2018 - 2019

ULUDAĞ Y., KARAKAŞ Z., Project Supported by Higher Education Institutions, Metal Tuzları ve Amonyak Arasında Gerçekleşen Adsorplanma/Desorplanma Reaksiyon Sistemine Yapısal Değişikliklerin ve Çözücünün Etkisinin Araştırılması, 2018 - 2019

ULUDAĞ Y., KARAKAŞ Z., Project Supported by Higher Education Institutions, METAL TUZLARININ AMONYAK GAZI İLE TEPKİME TERMODİNAMİĞİNİN VE KİNETİĞİNİN KİMYASAL ISI POMPALARINDA KULLANILMASINA YÖNELİK İNCELENMESİ, 2017 - 2017

ULUDAĞ Y., ÖZKÖK O., Project Supported by Higher Education Institutions, MALZEME ÖZELLİKLERİNİN VE KOMPOZİSYONUNUN ULTRASON YAYILIMI ÜZERİNDEKİ ETKİLERİNİN MODELLENMESİ VE ÖLÇÜLMESİ, 2015 - 2015

ULUDAĞ Y., KARAKAŞ Z., Project Supported by Higher Education Institutions, Dolgulu Kolonlarda Ultrason Yayılımın Deneysel ve Teorik Olarak İncelenmesi, 2015 - 2015

ULUDAĞ Y., Project Supported by Higher Education Institutions, Newtonumsu Olmayan Çözeltilerin Karıştırma Tanklarındaki Hidrodinamiği Ve Karışma Zamanlarının Deneysel İncelenmesi, 2009 - 2009

## Patent

ULUDAĞ Y., DÜŞÜK SU TÜKETİMLİ DÖNER LÜLE SİSTEMİNE SAHİP SU SOĞUTMA KULESİ, Patent, CHAPTER F Mechanical engineering; Lighting; Heating; Weaponry; Destroyed Materials, Initial Registration, 2016

## Citations

Total Citations (WOS):519

h-index (WOS):12