

Prof. Devrim Barış Kaymak

Personal Information

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International Researcher IDs

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Publons / Web Of Science ResearcherID: ABB-5661-2020

ScopusID: 6507984359

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Education Information

Doctorate, Lehigh University, P.C. Rossin Collage of Engineering and Applied Science, Chemical Engineering, United States Of America 2000 - 2005

Postgraduate, Istanbul Technical University, Fen Bilimleri Enstitüsü, Kimya Mühendisliği (YI) (Tezli), Turkey 1998 - 2000

Undergraduate, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, Turkey 1993 - 1998

Foreign Languages

English

Research Areas

Technical Sciences, Chemical Engineering and Technology, Process and Reactor Design, Process Control, Chemical Process System Engineering, Process Design, Basic Operations and Thermodynamics, Separation Operations

Academic Titles / Tasks

Professor, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 2023 - Continues

Associate Professor, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 2013 - 2023

Assistant Professor, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 2006 - 2013

Research Assistant, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 1998 - 2006

Academic and Administrative Experience

Head of Informatics Commission, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 2021 - Continues

Fakülte Kurulu Üyesi, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 2021 - Continues

Erasmus Program Department Coordinator, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 2020 - Continues

İstanbul Teknik Üniversitesi, Kimya-Metalurji Fakültesi, 2013 - 2016

Bölüm Kalite Komisyonu Üyesi, Istanbul Technical University, Kimya-Metalurji, Kimya Mühendisliği, 2007 - 2015

Courses

Process Control, Undergraduate, 2017 - 2018, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014
Chemical Engineering Design II, Undergraduate, 2016 - 2017
Kimya Mühendisliği Tasarımı I, Undergraduate, 2017 - 2018, 2016 - 2017
Mathematical Modelling in Chemical Engineering , Undergraduate, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2013 - 2014, 2012 - 2013, 2011 - 2012, 2010 - 2011, 2009 - 2010, 2008 - 2009, 2007 - 2008
Plantwide Process Control, Postgraduate, 2016 - 2017, 2015 - 2016, 2014 - 2015, 2012 - 2013, 2010 - 2011, 2009 - 2010
Transport Phenomena I, Postgraduate, 2015 - 2016, 2014 - 2015, 2013 - 2014, 2012 - 2013, 2011 - 2012, 2010 - 2011, 2009 - 2010, 2008 - 2009
Introduction to Scientific and Engineering Computing, Undergraduate, 2013 - 2014, 2011 - 2012, 2009 - 2010, 2008 - 2009, 2007 - 2008
Proses Kontrol, Undergraduate, 2012 - 2013, 2011 - 2012, 2010 - 2011, 2009 - 2010, 2008 - 2009, 2007 - 2008
Kimya Mühendisliği Lab I, Undergraduate, 2007 - 2008
Kimya Mühendisliği Lab II, Undergraduate, 2006 - 2007
Introduction to Scientific and Engineering Computing, Undergraduate, 2006 - 2007

Advising Theses

Kaymak D. B., Effect of operating pressure on design and control of extractive distillation process separating DMC-MeOH azeotropic mixture, Postgraduate, H.SELİN(Student), 2022
Kaymak D. B., Alternatif dimetil karnonat üretim prosesinin kontrolü, Postgraduate, E.KILIÇ(Student), 2021
Kaymak D. B., Design and control of alternative triple-column pressure swing distillation processes for acetone-methanol-hexane separation, Postgraduate, T.AKINCITÜRK(Student), 2021
Kaymak D. B., Ardışık reaktif distilasyon kolonlarında gerçekleşen biyodizel üretim prosesinin tasarımı ve kontrolü, Postgraduate, E.YENER(Student), 2019
Kaymak D. B., IBE fermantasyonundan butanol ve izopropanol saflaştırma prosesinin tasarımı ve kontrolü, Postgraduate, S.DEMİRDELEN(Student), 2019
Kaymak D. B., Gliserolden 1,2-propilen glikol üretim prosesinin tasarım ve kontrolü, Postgraduate, A.ÖZCAN(Student), 2018
Kaymak D. B., İki ardışık reaksiyon içeren tek ve çift reaktif bölgesi reaktif distilasyon kolonlarının kontrolü, Postgraduate, İ.Nur(Student), 2016
Kaymak D. B., Performance monitoring of closed control loops, Postgraduate, G.Kuşoğlu(Student), 2015
Kaymak D. B., Dynamic control of alternative bioethanol purification processes, Postgraduate, D.Gizem(Student), 2015
Kaymak D. B., Adaptive control vector parameterization and move blocking strategies in model-predictive control, Postgraduate, C.Dombaycı(Student), 2013
Kaymak D. B., Kloroform/Metanol Azeotropik Karışımı İçin Basınç Değiştirmeli Ve Ekstraktif Distilasyon Yöntemlerinin Karşılaştırılması, Postgraduate, E.Hoşgör(Student), 2013
Kaymak D. B., Reaktif Distilasyon Kolonların İki Ve Üç Nokta Sıcaklık Kontrollerinin Karşılaştırılması, Postgraduate, B.Demirel(Student), 2013
Kaymak D. B., Plantwide control of a complex process involving a reactive distillation column, Postgraduate, R.Özgür(Student), 2012
Kaymak D. B., Effect of relative volatility on temperature based inferential control of ternary reactive distillation columns, Postgraduate, D.Yılmaz(Student), 2010

Published journal articles indexed by SCI, SSCI, and AHCI

1. **Control structure selection of increased-pressure extractive distillation process for DMC-MeOH azeotropic mixture**

Varyemez H. S., Kaymak D. B.

Canadian Journal of Chemical Engineering, vol.102, no.2, pp.765-780, 2024 (SCI-Expanded)

- II. **Design and control of an energy-efficient intensified process for biobutanol purification from isopropanol-butanol-ethanol (IBE) fermentation broth**
Oksal İ. N., Kaymak D. B.
Chemical Engineering and Processing - Process Intensification, vol.193, 2023 (SCI-Expanded)
- III. **Selection of eco-efficient downstream separation configuration for isopropanol-butanol-ethanol purification process**
Oksal İ. N., Kaymak D. B.
Chemical Engineering Communications, vol.210, no.12, pp.2101-2115, 2023 (SCI-Expanded)
- IV. **Design and control of an energy-efficient triple-column pressure swing distillation configuration for separation of acetone-methanol-hexane mixture**
Akinciturk T., Kaymak D. B.
COMPUTERS & CHEMICAL ENGINEERING, vol.160, 2022 (SCI-Expanded)
- V. **Effect of operating pressure on design of extractive distillation process separating DMC-MeOH azeotropic mixture**
Varyemez H. S., Kaymak D. B.
CHEMICAL ENGINEERING RESEARCH & DESIGN, vol.177, pp.108-116, 2022 (SCI-Expanded)
- VI. **Design and control of an alternative intensified process configuration for separation of butanol-butyl acetate-methyl isobutyl ketone system**
Kaymak D. B.
CHEMICAL ENGINEERING AND PROCESSING-PROCESS INTENSIFICATION, vol.159, 2021 (SCI-Expanded)
- VII. **Design and Control of an Alternative Process for Biobutanol Purification from ABE Fermentation**
Kaymak D. B.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.58, no.5, pp.1957-1965, 2019 (SCI-Expanded)
- VIII. **Design and Control of an Alternative Bioethanol Purification Process via Reactive Distillation from Fermentation Broth**
Kaymak D. B.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.58, no.4, pp.1675-1685, 2019 (SCI-Expanded)
- IX. **Dynamic controllability comparison of reactive distillation columns with single and double reactive sections for two-stage consecutive reactions**
Oksal İ. N., Kaymak D. B.
Chemical Engineering Research and Design, vol.129, pp.391-402, 2018 (SCI-Expanded)
- X. **Control Analysis of Alternative Design Configurations for Bioethanol Purification**
ARSLAN D. G., Kaymak D. B.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.56, no.11, pp.3008-3016, 2017 (SCI-Expanded)
- XI. **Control of a reactive distillation column with double reactive sections for two-stage consecutive reactions**
Kaymak D. B., UNLU H., OFKELİ T.
CHEMICAL ENGINEERING AND PROCESSING, vol.113, pp.86-93, 2017 (SCI-Expanded)
- XII. **Design and control of distillation processes for methanol-chloroform separation**
Hosgor E., KUCUK T., Oksal İ. N., Kaymak D. B.
COMPUTERS & CHEMICAL ENGINEERING, vol.67, pp.166-177, 2014 (SCI-Expanded)
- XIII. **Plantwide Control of a Complex Process Involving a Reactive Distillation Column**
Baki R. O., Kaymak D. B.
CHEMICAL ENGINEERING COMMUNICATIONS, vol.201, no.4, pp.466-481, 2014 (SCI-Expanded)
- XIV. **Control of Quaternary Reactive Distillation Columns: Effects of Number and Location of Temperature Loops**
Demirel B., Kaymak D. B.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.52, no.17, pp.5943-5950, 2013 (SCI-Expanded)
- XV. **Effect of Relative Volatilities on Inferential Temperature Control of Reactive Distillation Columns**

- Kaymak D. B., YILMAZ D., GURER A. Z.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.50, no.13, pp.8138-8152, 2011 (SCI-Expanded)
- XVI. **Inferential Temperature Control Structures for Different Types of Two-Reactant Reactive Distillation Systems**
Kaymak D. B., YILMAZ D., GURER A. Z.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.50, no.11, pp.6777-6793, 2011 (SCI-Expanded)
- XVII. **Effect of Feed Tray Location on Temperature-Based Inferential Control of Double Feed Reactive Distillation Columns**
Sunar G., Kaymak D. B.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.48, no.24, pp.11071-11080, 2009 (SCI-Expanded)
- XVIII. **Dynamic Control of a Column/Side-Reactor Process**
Kaymak D. B., Luyben W. L.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.47, no.22, pp.8704-8712, 2008 (SCI-Expanded)
- XIX. **Quantitative comparison of dynamic controllability between a reactive distillation column and a conventional multi-unit process**
Kaymak D. B., Luyben W. L.
COMPUTERS & CHEMICAL ENGINEERING, vol.32, no.7, pp.1456-1470, 2008 (SCI-Expanded)
- XX. **Optimum design of a column/side reactor process**
Kaymak D. B., LUYBEN W. L.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.46, no.15, pp.5175-5185, 2007 (SCI-Expanded)
- XXI. **Evaluation of a two-temperature control structure for a two-reactant/two-product type of reactive distillation column**
Kaymak D. B., LUYBEN W. L.
CHEMICAL ENGINEERING SCIENCE, vol.61, no.13, pp.4432-4450, 2006 (SCI-Expanded)
- XXII. **Comparison of two types of two-temperature control structures for reactive distillation columns**
Kaymak D. B., LUYBEN W.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.44, no.13, pp.4625-4640, 2005 (SCI-Expanded)
- XXIII. **Design of distillation columns with external side reactors**
Kaymak D. B., LUYBEN W.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.43, no.25, pp.8049-8056, 2004 (SCI-Expanded)
- XXIV. **Effect of the chemical equilibrium constant on the design of reactive distillation columns**
Kaymak D. B., LUYBEN W.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.43, no.14, pp.3666-3671, 2004 (SCI-Expanded)
- XXV. **Effect of relative volatility on the quantitative comparison of reactive distillation and conventional multi-unit systems**
Kaymak D. B., LUYBEN W., SMITH O.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.43, no.12, pp.3151-3162, 2004 (SCI-Expanded)
- XXVI. **Quantitative comparison of reactive distillation with conventional multiunit reactor/column/recycle systems for different chemical equilibrium constants**
Kaymak D. B., LUYBEN W.
INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH, vol.43, no.10, pp.2493-2507, 2004 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **A novel process design for biobutanol purification from ABE fermentation**
KAYMAK D. B.
Distillation Absorption 2018, 16 - 19 September 2018, vol.69
- II. **Design and Control of a Separation Process for Bioethanol Purification by Reactive Distillation**
Kaymak D. B.
27th European Symposium on Computer-Aided Process Engineering (ESCAPE), Barcelona, Spain, 1 - 05 October

2017, pp.1075-1080

III. Three-Point Temperature Control of Quaternary Endothermic Reactive Distillation Columns
KAYMAK D. B.

10th World Congress of Chemical Engineering, 1 - 05 October 2017

IV. Controllability of Reactive Distillation Columns with Single and Double Reactive Sections for Separation of Two Stage Consecutive Reactions

KAYMAK D. B., OKSAL I.

2016 AIChE Annual Meeting, 13 November - 18 December 2016

V. Control of a Reactive Distillation Column with Double Reactive Sections for Two stage Consecutive Reactions

KAYMAK D. B., Ünlü H., Tuğçenaz Ö.

5th European Process Intensification Conference, France, 27 September - 01 October 2015

Supported Projects

Kaymak D. B., Oksal İ. N., Project Supported by Higher Education Institutions, IBE (İzopropanol-Bütanol-Etanol) Fermantasyonu Ürünlerini Saflaştırmak için Alternatif Proses Konfigürasyonlarının Tasarım, Kontrol ve Ekonomik Analizi, 2019 - 2021

Kaymak D. B., Yalçın M., Project Supported by Higher Education Institutions, Aseton-bütanol-etanol fermantasyonundan biyobütanol saflaştırmak için yeni bir proses tasarımı ve kontrolü, 2018 - 2019

Kaymak D. B., Project Supported by Higher Education Institutions, Biyoetanol saflaştırma için kullanılan reaktif distilasyon kolonunun tasarım ve kontrolü, 2015 - 2019

Kaymak D. B., Project Supported by Higher Education Institutions, Controllability of Reactive Distillation Columns with Single and Double Reactive Sections for Separation of Two-Stage Consecutive Reactions, 2016 - 2018

Kaymak D. B., Project Supported by Higher Education Institutions, CONTROL OF A REACTIVE DISTILLATION COLUMN WITH DOUBLE REACTIVE SECTIONS FOR TWO-STAGE CONSECUTIVE REACTIONS, 2015 - 2018

Kaymak D. B., Project Supported by Higher Education Institutions, Metanol kloroform karışımını ayırmak için basınç salınımlı distilasyon sisteminin kontrolü, 2013 - 2018

Kaymak D. B., Project Supported by Higher Education Institutions, Kloroform-Metanol Karışımı için Ekstraktif Distilasyon ve Basın Salınımlı Distilasyon Sistemlerinin Karşılaştırılması, 2012 - 2018

Kaymak D. B., Project Supported by Higher Education Institutions, Üçlü Reaktif Distilasyon Kolonları için Tasarım Değişkenleri ile Dinamik Kontrolün Etkileşimi, 2011 - 2018

Kaymak D. B., Project Supported by Higher Education Institutions, GENEL BİR REAKTİF DİSTİLYASYON KOLONUNDA PROSES TASARIMININ DİNAMİK KONTROL EDİLEBİLİRLİĞİNE ETKİSİ, 2009 - 2018

Kaymak D. B., Project Supported by Higher Education Institutions, Kolon/Yan Reaktör Prosesinin Dinamik Kontrolü, 2008 - 2018

Kaymak D. B., Project Supported by Higher Education Institutions, Harici Yan reaktörlü Distilasyon Kolonunun Optimum Tasarımı, 2007 - 2018

Kaymak D. B., Project Supported by Higher Education Institutions, İki reaktan/iki ürün tipi reaktif distilasyon kolonu için çift-sıcaklık kontrolü yapısının değerlendirilmesi, 2005 - 2018

Kaymak D. B., Project Supported by Higher Education Institutions, Kloroform-Metanol Karışımı için Basınç Salınımlı Distilasyon Sisteminin Tasarım ve Kontrolü, 2011 - 2016

Kaymak D. B., TÜBİTAK Project, Rafineri Simülasyon Platformunun Oluşturulması ve Bir Pilot Üniteye Uygulanması Projesi, 2012 - 2015

Kaymak D. B., Project Supported by Higher Education Institutions, Reaktif Distilasyon Kolonu İçeren Fabrika Ölçekli Proseslerin Tasarım ve Kontrolü, 2007 - 2015

Metrics

Publication: 33
Citation (WoS): 420
Citation (Scopus): 534
H-Index (WoS): 12
H-Index (Scopus): 13