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Education Information

Doctorate, University College London, Biyokimya Mühendisliği, United Kingdom 2004 - 2010

Undergraduate, University College London, Biyokimya Mühendisliği, United Kingdom 2000 - 2004

Foreign Languages

English, C2 Mastery

Research Areas

Biochemical Reaction Engineering, Bioprocess Separation Processes, Biotechnological Processes and Fermentation Technology

Academic Titles / Tasks

Associate Professor, Marmara University, Faculty of Engineering, Bioengineering, 2017 - Continues

Assistant Professor, Marmara University, Faculty Of Engineering, Bioengineering, 2012 - 2017

Research Assistant, University Of Exeter, Mühendislik, Sistem Biyoloji, 2011 - 2012

Research Assistant, University College London, Mühendislik, Biyokimya Mühendisliği, 2004 - 2008

Courses

Bilimsel Programlama, Undergraduate, 2018 - 2019, 2019 - 2020

Advising Theses

Sayar N. A. , Multi-objective optimization at a crude novel lipase catalyzed fame production: Kriging as an alternative to RSM, Doctorate, C.KULA(Student), 2018

Sayar N. A. , Biochemical characterization of newly identified lipases for utilization in lipase-catalysed reactions, Postgraduate, D.ELİF(Student), 2016

Sarıyar Akbulut B., SAYAR N. A. , Effect of temperature on osmolyte regulation strategy using engineering tools, Postgraduate, H.MANGAOĞLU(Student), 2013

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

- I. **Potentiating the activity of berberine for Staphylococcus aureus in a combinatorial treatment with thymol**
Aksoy C. S. , Avci F. G. , Ugurel O. M. , Atas B., SAYAR N. A. , Akbulut B.
MICROBIAL PATHOGENESIS, vol.149, 2020 (Journal Indexed in SCI)
- II. **Assessment of different carbon and salinity level on growth kinetics, lipid, and starch composition of Chlorella vulgaris SAG 211-12**
Kaplan E., SAYAR N. A. , KAZAN D., SAYAR A. A.
INTERNATIONAL JOURNAL OF GREEN ENERGY, vol.17, no.4, pp.290-300, 2020 (Journal Indexed in SCI)
- III. **Process simulation-integrated optimization of lignocellulolytic enzyme production**
Yilmaz-Sercinoglu Z., SAYAR N. A.
Biochemical Engineering Journal, vol.153, 2020 (Journal Indexed in SCI)
- IV. **Techno-economic analysis of caffeine and catechins production from black tea waste**
SAYAR N. A. , DURMAZ ŞAM S., PİNAR O., Serper D., SARIYAR AKBULUT B., KAZAN D., SAYAR A. A.
Food And Bioproducts Processing, vol.118, pp.1-12, 2019 (Journal Indexed in SCI)
- V. **Multi-objective optimization of a novel crude lipase-catalyzed fatty acid methyl ester (FAME) production using low-order polynomial and Kriging models**
KULA C., SAYAR N. A.
INTERNATIONAL JOURNAL OF GREEN ENERGY, vol.16, no.8, pp.657-665, 2019 (Journal Indexed in SCI)
- VI. **Bioethanol Production From Turkish Hazelnut Husk Process Design and Economic Evaluation**
SAYAR N. A. , PİNAR O., KAZAN D., SAYAR A. A.
WASTE AND BIOMASS VALORIZATION, vol.10, no.4, pp.909-923, 2019 (Journal Indexed in SCI)
- VII. **What Are the Multi-Omics Mechanisms for Adaptation by Microorganisms to High Alkalinity? A Transcriptomic and Proteomic Study of a Bacillus Strain with Industrial Potential**
ALTINIŞIK KAYA F. E. , Avci F. G. , SAYAR N. A. , KAZAN D., SAYAR A. A. , SARIYAR AKBULUT B.
OMICS-A JOURNAL OF INTEGRATIVE BIOLOGY, vol.22, no.11, pp.717-732, 2018 (Journal Indexed in SCI)
- VIII. **Manually modified design of experiments for early biocatalyst evaluation - lipase-catalysed fatty acid methyl ester production**
Kula C., Sayar N. A.
NEW BIOTECHNOLOGY, vol.44, 2018 (Journal Indexed in SCI)
- IX. **Retro-techno-economic evaluation of acetic acid production using cotton stalk as feedstock**
SAYAR N. A. , KAZAN D., PİNAR O., SARIYAR AKBULUT B., SAYAR A. A.
JOURNAL OF MATERIAL CYCLES AND WASTE MANAGEMENT, vol.20, no.4, pp.2077-2088, 2018 (Journal Indexed in SCI)
- X. **Targeting a hidden site on class A beta-lactamases**
Avci F. G. , ALTINIŞIK KAYA F. E. , Karacan I., Karagoz D. S. , Ersahin S., Eren A., SAYAR N. A. , Ulu D. V. , ÖZKIRIMLI ÖLMEZ E., SARIYAR AKBULUT B.
JOURNAL OF MOLECULAR GRAPHICS & MODELLING, vol.84, pp.125-133, 2018 (Journal Indexed in SCI)
- XI. **An OMIC approach to elaborate the antibacterial mechanisms of different alkaloids**
Avci F. G. , SAYAR N. A. , Akbulut B.
PHYTOCHEMISTRY, vol.149, pp.123-131, 2018 (Journal Indexed in SCI)
- XII. **Assessment of hazelnut husk as a lignocellulosic feedstock for the production of fermentable sugars and lignocellulolytic enzymes**
PİNAR O., Karaosmanoglu K., SAYAR N. A. , KULA C., KAZAN D., SAYAR A. A.
3 BIOTECH, vol.7, 2017 (Journal Indexed in SCI)
- XIII. **Response of Escherichia coli to Prolonged Berberine Exposure**
Gokgoz N. B. , Avci F. G. , Yoneten K. K. , Alaybeyoglu B., ÖZKIRIMLI ÖLMEZ E., SAYAR N. A. , KAZAN D., SARIYAR AKBULUT B.
MICROBIAL DRUG RESISTANCE, vol.23, no.5, pp.531-544, 2017 (Journal Indexed in SCI)
- XIV. **Organic solvent stable lipase from Cryptococcus diffluens D44 isolated from petroleum sludge**

- Yilmaz D. E. , Sayar N. A.
JOURNAL OF MOLECULAR CATALYSIS B-ENZYMATIC, vol.122, pp.72-79, 2015 (Journal Indexed in SCI)
- XV. **Topological analysis of carbon flux during multi-stress adaptation in Halomonas sp AAD12**
Yoruk H. M. , SAYAR N. A.
ELECTRONIC JOURNAL OF BIOTECHNOLOGY, vol.18, no.6, pp.480-485, 2015 (Journal Indexed in SCI)
- XVI. **A sigmoidal model for biosorption of heavy metal cations from aqueous media**
Ozen R, SAYAR N. A. , DURMAZ ŞAM S, SAYAR A. A.
MATHEMATICAL BIOSCIENCES, vol.265, pp.40-46, 2015 (Journal Indexed in SCI)
- XVII. **Schizosaccharomyces pombe and its Ni(II)-insensitive mutant GA1 in Ni(II) uptake from aqueous solutions: a biodynamic model**
SAYAR N. A. , DURMAZ ŞAM S, KAZAN D, SAYAR A. A.
APPLIED MICROBIOLOGY AND BIOTECHNOLOGY, vol.98, no.15, pp.6859-6869, 2014 (Journal Indexed in SCI)
- XVIII. **Enzyme mixture production from Pycnoporus sanguineus DMSZ 3024 using a lignocellulosic waste, Hazelnut husk: A case study for laccase and cellulase**
PİNAR O, Kochan B, SAYAR N. A. , Karaos-Manoglu K, KAZAN D.
NEW BIOTECHNOLOGY, vol.31, 2014 (Journal Indexed in SCI)
- XIX. **Lipase Catalyzed Esterification Reactions-A Kinetic Model**
KULA C, SAYAR N. A.
NEW BIOTECHNOLOGY, vol.31, 2014 (Journal Indexed in SCI)
- XX. **Screening of Lipase Production Among Different Microorganisms**
Yilmaz D. E. , Yalcin H. T. , SAYAR N. A.
NEW BIOTECHNOLOGY, vol.31, 2014 (Journal Indexed in SCI)
- XXI. **Assessment of Berberine as a Multi-target Antimicrobial: A Multi-omics Study for Drug Discovery and Repositioning**
Karaosmanoglu K, SAYAR N. A. , KURNAZ I, SARIYAR AKBULUT B.
OMICS-A JOURNAL OF INTEGRATIVE BIOLOGY, vol.18, no.1, pp.42-53, 2014 (Journal Indexed in SCI)
- XXII. **Biosorption of Ni (II) by Schizosaccharomyces pombe: kinetic and thermodynamic studies**
DURMAZ ŞAM S, Sayar N. A. , Topal-Sarikaya A, SAYAR A. A.
BIOPROCESS AND BIOSYSTEMS ENGINEERING, vol.34, no.8, pp.997-1005, 2011 (Journal Indexed in SCI)
- XXIII. **Modelling and simulation of a transketolase mediated reaction: Sensitivity analysis of kinetic parameters**
Sayar N. A. , Chen B. H. , Lye G. J. , Woodley J. M.
BIOCHEMICAL ENGINEERING JOURNAL, vol.47, pp.1-9, 2009 (Journal Indexed in SCI)
- XXIV. **Process modelling and simulation of a transketolase mediated reaction: Analysis of alternative modes of operation**
Sayar N. A. , Chen B. H. , Lye G. J. , Woodley J. M.
BIOCHEMICAL ENGINEERING JOURNAL, vol.47, pp.10-18, 2009 (Journal Indexed in SCI)
- XXV. **Extraction of Co(II) and Ni(II) from concentrated HCl solutions using Alamine 336**
Sayar N. A. , Filiz M, Sayar A. A.
HYDROMETALLURGY, vol.96, pp.148-153, 2009 (Journal Indexed in SCI)
- XXVI. **Simulation- and optimisation-oriented modelling considerations for the extraction of Ni(II) from its acidic aqueous chloride solutions into Alamine 336-m-xylene systems**
Sayar N. A. , Sayar A. A. , Filiz M.
HYDROMETALLURGY, vol.95, pp.280-284, 2009 (Journal Indexed in SCI)
- XXVII. **Extraction of Zn(II) from aqueous hydrochloric acid solutions into Alamine 336-m-xylene systems. Modeling considerations to predict optimum operational conditions**
Sayar N. A. , Filiz M, Sayar A. A.
HYDROMETALLURGY, vol.86, pp.27-36, 2007 (Journal Indexed in SCI)
- XXVIII. **Reaction modelling and simulation to assess the integrated use of transketolase and omega-transaminase for the synthesis of an aminotriol**
Chen B. H. , Sayar A, Kaulmann U, Dalby P. A. , Ward J. M. , Woodley J. M.

BIOCATALYSIS AND BIOTRANSFORMATION, vol.24, no.6, pp.449-457, 2006 (Journal Indexed in SCI)

XXIX. **Extraction of cobalt(II) from aqueous hydrochloric acid solutions into alamine 336-m-xylene mixtures**

Filiz M., Sayar N. A. , Sayar A.

HYDROMETALLURGY, vol.81, pp.167-173, 2006 (Journal Indexed in SCI)

Articles Published in Other Journals

I. **Biosorption of Co(II) by Schizosaccharomyces pombe: Kinetic and thermodynamic studies for process design.**

SAYAR A. A. , SAYAR N. A. , DURMAZ ŞAM S., ODABAŞI G.

Journal of Bioprocess and Biotechniques, 2013 (Refereed Journals of Other Institutions)

Books & Book Chapters

I. **Antibiyotik Üretimi**

AVCI F. G. , SAYAR N. A. , SARIYAR AKBULUT B.

in: FERMENTE ÜRÜNLER TEKNOLOJİSİ VE MİKROBİYOLOJİSİ, Osman Erkmen, Hüseyin Erten, Hidayet Sağlam, Editor, NOBEL, İstanbul, pp.721-738, 2020

II. **Antibiyotik Üretimi**

AVCI F. G. , SAYAR N. A. , SARIYAR AKBULUT B.

in: Fermente Ürünler Teknolojisi ve Mikrobiyolojisi, Erkmen, Osman; Erten, Hüseyin, Sağlam, Hidayet, Editor, Nobel Akademik Yayıncılık, Ankara, pp.721-738, 2020

Refereed Congress / Symposium Publications in Proceedings

I. **Propagation of Parametric Uncertainty in a Conceptually Designed Bioethanol Production Process**

Yıldız D. Z. , SAYAR N. A.

The ESCAPE 30 European Symposium on Computer Aided Process Engineering, Milan, Italy, 31 August - 02 September 2020, vol.48, pp.631-636

II. **Submerged fermentation of hazelnut husk via Pycnoporus sanguineus DMSZ 3024 for enzyme production**

Yılmaz Serçinoğlu Z., Sayar N. A.

ECOMB2019, Trabzon, Turkey, 19 - 21 September 2019

III. **Comparison of two medium optimization strategies: multi-objective pareto and global optimization for production of lignocellulolytic enzymes**

YILMAZ SERÇİNOĞLU Z., SAYAR N. A.

ECOMB2019, Trabzon, Turkey, 19 - 21 September 2019

IV. **Manually modified design of experiments for early biocatalyst evaluation–lipase-catalysed fatty acid methyl ester production**

KULA C., SAYAR N. A.

18th European Congress on Biotechnology, 1 - 04 July 2018, vol.44, pp.120-121

V. **Analytical approach to understanding the interferences of compounds to lignocellulolytic enzyme activity assays**

YILMAZ Z., SAYAR N. A.

9th International Congress on Biocatalysis, 26 - 30 August 2018

VI. **Laccase production from hazelnut husk via submerged cultivation of white rot fungi**

YILMAZ Z., SAYAR N. A.

9th International Congress on Biocatalysis, 26 - 30 August 2018

- VII. **LIGNOCELLULOTIC ENZYME PRODUCTION FROM HAZELNUT HUSK VIA MULTI-STEP CATALYSIS OF WHITE-ROT FUNGI**
Yılmaz Serçinoğlu Z., Sayar N. A.
4th Multistep Enzyme Catalyzed Processes Congress (MECP18), Nord-Trøndelag, Norway, 19 - 22 March 2018
- VIII. **Beyaz Çürükçül Fungus Katalizörlüğünde Fındık Çotanağı Kullanarak Lignoselüloolitik Enzim Üretimi**
YILMAZ Z., SAYAR N. A.
19. Uluslararası Katılımlı Ulusal Biyoteknoloji Kongresi, Eskişehir, Turkey, 1 - 03 December 2017
- IX. **Growth Medium Optimization of *Cryptococcus albidus* D24 lipase by statistical design of experiments**
URAS A., PİNAR O., SAYAR N. A. , KAZAN D., SAYAR A. A.
42nd FEBS Congress, Kudus, Indonesia, 10 - 14 September 2017
- X. **Growth medium optimization of *Cryptococcus albidus* D24 lipase by statistical design of experiments**
Uras A., Pinar O., Sayar N. A. , Kazan D., Sayar A. A.
42nd Congress of the Federation-of-European-Biochemical-Societies (FEBS) on From Molecules to Cells and Back, Jerusalem, Israel, 10 - 14 September 2017, vol.284, pp.376
- XI. **Production of laccase and cellulases by *Pycnoporus sanguineus* (dmsz 3024) using hazelnut husk**
Yılmaz Serçinoğlu Z., Sayar N. A. , Kazan D.
FEMS 2017 - 7th Congress of European Microbiologists (FEMS), Valencia, Spain, 9 - 13 July 2017
- XII. **Immobilization of *Cryptococcus albidus* D24 lipase for enzymatic esterification**
Uras A., Sayar N. A. , Kazan D., Sayar A. A.
41st FEBS Congress on Molecular and Systems Biology for a Better Life, Kusadasi, Turkey, 3 - 08 September 2016, vol.283, pp.224-225
- XIII. **Biodiesel production from waste cooking oil via optimised transesterification by a locally sourced lipase**
KULA C., SAYAR N. A.
Challenges in Building a Sustainable Biobased Economy, EcoBio Conference 2016, 6 - 09 March 2016
- XIV. **The plant derived alkaloid roemerin is involved in the modulation of motility in *E. coli***
AYYILDIZ D., AVCI F. G. , ARÇA K. Y. , BÜDEYRİ GÖKGÖZ N., SAYAR N. A. , KAZAN D., WOZNY K., BRÜGGER B., SARIYAR AKBULUT B.
BIOPHYSICAL SOCIETY 60TH ANNUAL MEETING, 27 February - 02 March 2016
- XV. ***Cryptococcus diffluens* D44 lipase for biodiesel production from waste cooking oil via optimized transesterification**
KULA C., SAYAR N. A.
BEC 2015 VII. Bioengineering Congress, 19 - 21 November 2015
- XVI. **Optimization of process parameters for enzymatic hydrolysis of hazelnut husk**
YILMAZ SERÇİNOĞLU Z., PİNAR O., SAYAR N. A. , KAZAN D.
BEC 2015 VII. Bioengineering Congress, İzmir, Turkey, 19 - 21 November 2015
- XVII. **Optimization of process parameters for enzymatic hydrolysis of hazelnut husk**
YILMAZ Z., PİNAR O., SAYAR N. A. , KAZAN D.
VIIth International Bioengineering Congress (BEC 2015), İzmir, Turkey, 19 - 21 November 2015
- XVIII. **Optimization of process parameters for enzymatic hydrolysis of hazelnut husk**
YILMAZ Z., PİNAR O., SAYAR N. A. , KAZAN D.
7th International Bioengineering Congress, 19 - 21 November 2015
- XIX. **Lipase Catalyzed Esterification Reactions–A Kinetic Model**
KULA C., SAYAR N. A.
16th EUROPEAN CONGRESS ON BIOTECHNOLOGY, 13 - 16 July 2014
- XX. **Enzyme mixture production from *Pycnoporus sanguineus* DMSZ 3024 using a lignocellulosic waste, Hazelnut husk: A case study for laccase and cellulase**
PİNAR O., KOÇHAN B., SAYAR N. A. , KARAOSMANOĞLU K., KAZAN D.
16th European Congress on Biotechnology, 13 - 16 July 2014
- XXI. **Computer based synthetic metabolic pathway construction by using biological databases**

YILMAZ Z., Zorluğolu G., SARIYAR AKBULUT B., SAYAR N. A.

EMBL-EBI/Wellcome Trust Summer School in Bioinformatics, Cambridge, Canada, 23 - 27 June 2014

- XXII. **Characterization of Lipase Enzyme and Catalysed Esterification Reaction as a Model System**
KULA C., Yılmaz D. E. , YALÇIN H. T. , SAYAR N. A.
Enzymes for Biocatalysis, İstanbul, Turkey, 3 - 05 June 2014
- XXIII. **Characterization of Lipase Enzyme and Catalyzed Esterification Reaction as a Model System**
KULA C., yılmaz d. e. , YALÇIN H. T. , SAYAR N. A.
ENZYMES FOR BIOCATALYSIS, 3 - 05 June 2014
- XXIV. **Hydrolysis of Hazelnut Husk by Using Commercial Enzymes for the Production of Fermentable Sugar**
KARAOŞMANOĞLU K., PİNAR O., SAYAR N. A. , KAZAN D.
VIth International Bioengineering Congress (IBEC 2013), İzmir, Turkey, 12 - 15 November 2013
- XXV. **Mathematical Modelling of Ni²⁺ biosorption by Schizosaccharomyces pombe using Universal Sigmoid Approach**
Özen R., DURMAZ ŞAM S., SAYAR N. A. , SAYAR A. A.
4th World Congress on Biotechnology, Raleigh, United States Of America, 23 - 25 September 2013
- XXVI. **Developing robust and tractable in silico procedures for the discovery and assessment of novel pathways for synthetic biology**
SAYAR N. A. , Soyer O.
SB 5.0 Fifth International Meeting on Synthetic Biology, San Fransisko, United States Of America, 15 - 17 June 2011
- XXVII. **A hybrid approach to bioreaction kinetic parameter estimation**
Chen B. H. , SAYAR N. A. , Woodley J.
19th International Symposium on Chemical Reaction Engineering, Potsdam, Germany, 3 - 06 September 2006
- XXVIII. **Biocatalytic process evaluation using microscale processing techniques and process modelling**
Chen B. H. , Micheletti M., SAYAR N. A. , Dalby P., Baganz F., Lye G., Woodley J.
6th European Symposium on Biochemical Engineering Science, Salzburg, Austria, 27 - 30 August 2006
- XXIX. **Transketolase mediated carbon carbon bond formation**
Chen B. H. , SAYAR N. A. , Micheletti M., Woodley J.
Industrial Biotransformations, Barselona, Spain, 4 - 05 May 2006
- XXX. **Reaction modelling and simulation to assess the integrated use of transketolase and transaminase for the synthesis of an aminotriol**
Chen B. H. , SAYAR N. A. , Kaulmann U., Dalby P., Ward J., Woodley J.
Multistep Enzyme Catalyzed Processes, Graz, Austria, 18 - 21 April 2006

Supported Projects

Kula C., Sayar N. A. , Project Supported by Higher Education Institutions, Lipazla katalizlenen bir esterifikasyon reaksiyonu Kinetik analizi proses tasarımı ve proses metriklerinin değerlendirilmesi, 2015 - 2018

Sariyar Akbulut B., Sayar N. A. , Project Supported by Higher Education Institutions, Determination of intracellular targets of different alkaloids with antimicrobial properties by real-time polymerase chain reaction and microarray technologies , 2014 - 2017

Sariyar Akbulut B., Kazan D., Sayar N. A. , TÜBİTAK International Bilateral Joint Cooperation Program Project, Systems Biology Approach for Integrative OMICs Data Analysis to Investigate the Action of Antimicrobial Agents, 2014 - 2017

Citations

Total Citations (WOS):260

h-index (WOS):9

Invited Talks

OMICS, Conference, İstanbul Üniversitesi, Turkey, July 2013