Assoc. Prof. SAMET ŞAHİN

Personal Information

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Education Information

Doctorate, University of Newcastle Upon Tyne, Kimya Mühendisliği, England 2012 - 2017
Postgraduate, Hacettepe University, Fen Bilimleri Enstitüsü, Kimya Mühendisliği (Yl) (Tezli), Turkey 2009 - 2011
Undergraduate, Hacettepe University, Mühendislik Fakültesi, Kimya Mühendisliği Bölümü, Turkey 2006 - 2009

Dissertations

Doctorate, Development of Enzymatic Biouel Cells with Pyranose-2-Oxidase, University of Newcastle Upon Tyne, Kimya Mühendisliği, 2017
Postgraduate, Ozon gazının dört zamanlı motorlarda güç ve yakıt verimine etkisi, Hacettepe University, Fen Bilimleri Enstitüsü, Kimya Mühendisliği (Yl) (Tezli), 2011

Research Areas

Engineering and Technology

Academic and Administrative Experience

Bilecik Seyh Edebali University, 2018 - Continues

Courses

BYT5999 Bilim Etiği ve Araştırma Teknikleri, Postgraduate, 2020 - 2021
ESM5002 Biyolojik Yakıt Hücreleri, Postgraduate, 2020 - 2021
BYT6012 Enzimatik Yakıt Hücreleri, Doctorate, 2020 - 2021
BYT5020 Enzimoloji, Postgraduate, 2020 - 2021
BYT604 Enzimatik Yakıt Hücreleri, Doctorate, 2019 - 2020
MBG319 Enzimoloji, Undergraduate, 2019 - 2020
MBG220 Biyoetik, Undergraduate, 2019 - 2020
TOS221 Yazışma ve Rapor Hazırlama, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018

MMM110 Genel Kimya II, Undergraduate, 2019 - 2020
KSM315 Biyoteknolojiye Giriş, Undergraduate, 2019 - 2020, 2018 - 2019, 2017 - 2018
MMM317 Elektrokimya, Undergraduate, 2019 - 2020
ESM574 Biyolojik Yakıt Hücreleri, Postgraduate, 2019 - 2020
BYT520 Enzimoloji, Postgraduate, 2019 - 2020, 2018 - 2019
MMM214 Kütle ve Enerji Denklikleri, Undergraduate, 2019 - 2020
TOS211 Mühendislik Etiği, Undergraduate, 2018 - 2019, 2017 - 2018
KSM408 Kimya Mühendisliği Laboratuvarı II, Undergraduate, 2017 - 2018
Stability and Sustainability of Materials , Postgraduate, 2016 - 2017, 2015 - 2016
CME 1020: Chemistry Stage 1 Laboratories , Undergraduate, 2015 - 2016, 2014 - 2015, 2013 - 2014

Advising Theses

ŞAHİN S., Glikoz ve insülin tayini için karbon destekli mezoporoz silika ve altın elektrotlar kullanılarak enzimatik ve aptamer temelli elektrokimyasal biyosensör geliştirilmesi, Postgraduate, Ş.KAYA(Student), 2023
Şahin S., Biyokütleden karbonize iletken elektrot malzemesi üretimi ve biyoelektronik uygulamalarda kullanımı, Postgraduate, Ş.FURKAN(Student), 2023
SAMET Ş., Kanamisin tayini için moleküler baskılanmış sensör hazırlanması ve uygulaması, Postgraduate, D.IŞIK(Student), 2020

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Aptamer-based impedimetric label-free detection of bisphenol A from water samples using a gold nanoparticle-modified electrochemical nanofilm platform**
Saygılı-Canlıdinç R., ÇAĞLAYAN M. O., KARİPER İ. A., Üstündağ Z., ŞAHİN S.
Journal of Applied Electrochemistry, vol.53, no.11, pp.2239-2248, 2023 (SCI-Expanded)

II. **The effect of different immobilization strategies on the electrochemical performance of enzymatic carbonaceous electrodes developed using carbonized biomass sources**
Küçükayar Ş. F., ŞİMŞEK V., ÇAĞLAYAN M. O., Üstündağ Z., ŞAHİN S.
Microchemical Journal, vol.193, 2023 (SCI-Expanded)

III. **Spectroscopic ellipsometry-based aptasensor platform for bisphenol a detection**
ŞAHİN S., Üstündağ Z., ÇAĞLAYAN M. O.
Talanta, vol.253, 2023 (SCI-Expanded)

IV. **An Overview of Biosensors for the Detection of Patulin Focusing on Aptamer-Based Strategies**
KÜÇÜK N., ŞAHİN S., ÇAĞLAYAN M. O.
Critical Reviews in Analytical Chemistry, 2023 (SCI-Expanded)

V. **Investigation of Graphene Oxide/Mesoporous Silica Supports for Enhanced Electrochemical Stability of Enzymatic Electrodes**
Kaya Ş., ŞİMŞEK V., ŞAHİN S.
Catalysis Letters, 2023 (SCI-Expanded)

VI. **A bioresorbable peripheral nerve stimulator for electronic pain block**
Lee G., Ray E., Yoon H., Genovese S., Choi Y. S., Lee M., Şahin S., Yan Y., Ahn H., Bandodkar A. J., et al.
Science Advances, vol.8, no.40, 2022 (SCI-Expanded)

VII. **Determination of nitrite on manganese dioxide doped reduced graphene oxide modified glassy carbon by differential pulse voltammetry**
Yılmaz-Alhan B., Çelik G., Oguzhan Caglayan M., ŞAHİN S., Üstündağ Z.
Chemical Papers, vol.76, no.8, pp.4919-4925, 2022 (SCI-Expanded)

VIII. **An electrochemical signal switch–based (on–off) aptasensor for sensitive detection of insulin on gold-deposited screen-printed electrodes**

ŞAHİN S., Kaya Ş., Üstündağ Z., ÇAĞLAYAN M. O.
Journal of Solid State Electrochemistry, vol.26, no.4, pp.907-915, 2022 (SCI-Expanded)

IX. **Spectroscopic ellipsometry methods for brevetoxin detection**
ÇAĞLAYAN M. O., Üstündağ Z., ŞAHİN S.
Talanta, vol.237, 2022 (SCI-Expanded)

X. **An Overview of Aptamer-Based Sensor Platforms for the Detection of Bisphenol-A**
ÇAĞLAYAN M. O., ŞAHİN S., Üstündağ Z.
Critical Reviews in Analytical Chemistry, 2022 (SCI-Expanded)

XI. **Sensor and Bioimaging Studies Based on Carbon Quantum Dots: The Green Chemistry Approach**
ÇAĞLAYAN M. O., MİNDİVAN F., ŞAHİN S.
Critical Reviews in Analytical Chemistry, vol.52, no.4, pp.814-847, 2022 (SCI-Expanded)

XII. **Detection Strategies of Zearalenone for Food Safety: A Review**
ÇAĞLAYAN M. O., ŞAHİN S., Üstündağ Z.
Critical Reviews in Analytical Chemistry, vol.52, no.2, pp.294-313, 2022 (SCI-Expanded)

XIII. **An electrochemical label-free DNA impedimetric sensor with AuNP-modified glass fiber/carbonaceous electrode for the detection of HIV-1 DNA**
Yeter E. Ç., ŞAHİN S., ÇAĞLAYAN M. O., Üstündağ Z.
Chemical Papers, vol.75, no.1, pp.77-87, 2021 (SCI-Expanded)

XIV. **Electrochemical impedimetric detection of kanamycin using molecular imprinting for food safety**
Işık D., ŞAHİN S., ÇAĞLAYAN M. O., Üstündağ Z.
Microchemical Journal, vol.160, 2021 (SCI-Expanded)

XV. **A review on nanostructure-based mercury (II) detection and monitoring focusing on aptamer and oligonucleotide biosensors**
ŞAHİN S., ÇAĞLAYAN M. O., Üstündağ Z.
Talanta, vol.220, 2020 (SCI-Expanded)

XVI. **Recent advances in aptamer-based sensors for breast cancer diagnosis: special cases for nanomaterial-based VEGF, HER2, and MUC1 aptasensors**
ŞAHİN S., ÇAĞLAYAN M. O., Üstündağ Z.
Microchimica Acta, vol.187, no.10, 2020 (SCI-Expanded)

XVII. **A simple and sensitive hydrogen peroxide detection with horseradish peroxidase immobilized on pyrene modified acid-treated single-walled carbon nanotubes**
ŞAHİN S.
Journal of Chemical Technology and Biotechnology, vol.95, no.4, pp.1093-1099, 2020 (SCI-Expanded)

XVIII. **An Overview of Modern Thermo-Conductive Materials for Heat Extraction in Electrical Machines**
Kulan M. C., ŞAHİN S., Baker N. J.
IEEE Access, vol.8, pp.212114-212129, 2020 (SCI-Expanded)

XIX. **Characterization and catalytic performance evaluation of a novel heterogeneous mesoporous catalyst for methanol–acetic acid esterification**
ŞİMŞEK V., ŞAHİN S.
Journal of Porous Materials, vol.26, no.6, pp.1657-1665, 2019 (SCI-Expanded)

XX. **Simultaneous Electrochemical Detection of Glucose and Non-Esterified Fatty Acids (NEFAs) for Diabetes Management**
ŞAHİN S., Merotra J., Kang J., Trenell M., Catt M., Yu E. H.
IEEE Sensors Journal, vol.18, no.22, pp.9075-9080, 2018 (SCI-Expanded)

XXI. **Enzymatic fuel cells with an oxygen resistant variant of pyranose-2-oxidase as anode biocatalyst**
ŞAHİN S., Wongnate T., Chuaboon L., Chaiyen P., Yu E. H.
Biosensors and Bioelectronics, vol.107, pp.17-25, 2018 (SCI-Expanded)

XXII. **Tailoring properties of reduced graphene oxide by oxygen plasma treatment**
Kondratowicz I., Nadolska M., ŞAHİN S., Łapiński M., Prześniak-Welenc M., Sawczak M., Yu E. H., Sadowski W., Żelechowska K.
Applied Surface Science, vol.440, pp.651-659, 2018 (SCI-Expanded)

XXIII. **Electrochemical detection of plasma immunoglobulin as a biomarker for Alzheimer's disease**
Garyfallou G., Ketebu O., ŞAHİN S., Mukaetova-Ladinska E. B., Catt M., Yu E. H.
Sensors (Switzerland), vol.17, no.11, 2017 (SCI-Expanded)

Articles Published in Other Journals

I. **Electrochemical Characterization of Carbonized Typha Tassel Modified Screen-Printed Electrode and Its Enzymatic Glucose Oxidation Application**
ŞAHİN S.
Hacettepe Journal of Biology and Chemistry, vol.47, no.3, pp.287-294, 2019 (Peer-Reviewed Journal)

II. **A Self-Powered Detection of Glucose Using Glucose/Air Enzymatic Fuel Cell on a Single Chip**
ŞAHİN S.
Bilecik Şeyh Edebali Üniversitesi Fen Bilimleri Dergisi, vol.6, no.2, pp.135-146, 2019 (Peer-Reviewed Journal)

III. **Power Harvesting from Human Serum in Buckypaper-Based Enzymatic Biofuel Cell**
Güven G., ŞAHİN S., Güven A., Yu E. H.
Frontiers in Energy Research, vol.4, 2016 (Scopus)

IV. **Glucose Oxidation Using Oxygen Resistant Pyranose-2-Oxidase for Biofuel Cell Applications**
ŞAHİN S., Wongnate T., Chaiyen P., Yu E.
CHEMICAL ENGINEERING TRANSACTIONS, vol.41, pp.367-372, 2014 (Scopus)

Refereed Congress / Symposium Publications in Proceedings

I. **Production of carbonized electrode materials from biomass and its use in electrochemical biosensing applications**
Küçükayar Ş. F., ŞAHİN S., ŞİMŞEK V.
3rd International Eurasian Conference on Science, Engineering and Technology, Ankara, Turkey, 15 - 17 December 2021

II. **An electrochemical investigation of carbonized Typha tassel for enzymatic glucose oxidation**
ŞAHİN S.
3rd International Eurasian Conference onBiological and Chemical Sciences, Ankara, Turkey, 19 - 20 March 2020

III. **Enzymatic electrochemical detection of hydrogen peroxide using carbon Nano-structures**
ŞAHİN S.
International Conference on Research in Engineering, Science and Technology, Roma, Italy, 21 - 23 February 2020

IV. **Development of carbon nanotube-ferrocene-nafion based enzymatic anodes for biofuel cell applications**
ŞAHİN S.
International Conference on Energy Materials and Interfaces, Newcastle upon Tyne, England, 29 July - 01 August 2019

V. **Development of Enzymatic Electrodes with Mutant Pyranose-2-Oxidase for Enzymatic Biofuel Cell Applications**
ŞAHİN S., Chaiyen P., YU E.
24th International Symposium on Bioelectrochemistry and Bioenergetics of the Bioelectrochemical Society, 3 - 07 July 2017

VI. **An Air-Breathing Enzymatic Fuel Cell with Mutant Pyranose-2-Oxidase and Bilirubin Oxidase**
ŞAHİN S., CHAIYEN P., YU E.
Scotland and North of England Electrochemistry Symposium, 26 April 2017

VII. **Glucose Oxidation Using Oxygen Resistant Pyranose-2-Oxidase for Biofuel Cell Applications**
ŞAHİN S., WONGNATE T., CHAIYEN P., YU E.
10th European Symposium on Electrochemical Engineering, 28 September - 02 October 2014

VIII. **Investigation the use of oxygen resistant Pyranose 2-oxidase for glucose oxidation in biofuel cell applications**
ŞAHİN S., YU E.
Chemical Engineering and Advanced Materials Postgraduate Student Research Conference, 19 - 20 May 2014

IX. **Enzymatic Biofuel Cells Developing and Optimising Enzyme Electrodes**
ŞAHİN S., YU E.
Chemical Engineering and Advanced Materials Postgraduate Student Research Conference, 20 - 21 March 2013

X. **Ozonun iki zamanlı motorların güç ve emisyon değerlerine etkisi**
ŞAHİN S., KOÇUM İ. C., TANYOLAC A.
9. Ulusal Kimya Mühendisliği Kongresi, Ankara, Turkey, 22 - 25 June 2010

XI. **The effects of ozone on power values of two stroke engines**
ŞAHİN S., KOÇUM İ. C., TANYOLAC A.
6th Chemical Engineering Conference for Collaborative Research in Eastern Mediterranean Countries, 7 - 12 March 2010

Supported Projects

ŞAHİN S., Kortizol Tayini için Sensor Geliştirilmesi, 2022 - Continues
Şahin S., Darcan C., Çağlayan M. O., Research Project of the Presidency of Turkey Health Institutes (TÜSEB), Spinal müsküler atrofi hastalığı için farmakodinamik sensör geliştirilmesi, 2023 - 2025
Şahin S., TUBITAK Project, Glikoz Seviyesi Kontrolü İçin Kendi Enerjisini Üreten Akıllı İlaç Salım Sistemi Geliştirilmesi, 2023 - 2025
Şahin S., Project Supported by Other Official Institutions, Biyokütleden Karbonize İletken Elektrot Malzemesi Üretimi ve Biyoelektronik Uygulamalarda Kullanımı, 2021 - 2022
ŞAHİN S., ÇAĞLAYAN M. O., Hassas Insülin Tayini Için Elektrokimyasal Sinyal Aç-Kapa (Signal On-Off) Aptasensör Geliştirilmesi, 2019 - 2021
ŞİMŞEK V., ŞAHİN S., Project Supported by Other Official Institutions, Silika kaynaklı mezo-gözenekli destek malzemelerin enzimatik elektrokimyasal sistemlerde kullanımının incelenmesi, 2019 - 2021
ŞAHİN S., ÇAĞLAYAN M. O., Deniz Ürünlerinde Brevetoksin Tayini İçin Aptasensörler, 2020 - 2020
ŞAHİN S., Project Supported by Higher Education Institutions, Glikoz ölçümü için kendi gücünü sağlayan biyosensör geliştirilmesi, 2018 - 2019
ŞAHİN S., Other International Funding Programs, Development of a prototype point of care micro diagnostic device for measuring reactive oxygen species and other health biomarkers, 2016 - 2017
ŞAHİN S., Other International Funding Programs, Development of three dimensional carbon nanocomposite for biosensing applications, 2016 - 2017

Scholarships

Postdoctoral Fellowship, Special Institutions and Organizations, 2021 - 2022
Doktora Bursu, Ministry of Education, 2012 - 2017