

AYŞE ASLAN CANPOLAT

ASSISTANT PROFESSOR

E-Mail Address : ayseaslan@gtu.edu.tr
Address : Gebze Teknik Üniversitesi Enerji Teknolojileri Ens.41400 Kocaeli

Education

Doctoral 2009 14/Mart/2014	Thesis name: The production of polymer/nanocomposite proton conducting membranes for polymer electrolyte membrane fuel cell (pemfc) applications (2013) Thesis Advisor:(PROF. DR. AYHAN BOZKURT)
Master (Thesis) 2007 6/Haziran/2009	Thesis name: The production of anhydrous proton conducting biomembranes for polymer electrolyte membrane fuel cell application (2009) Thesis Advisor:(DOÇ. DR. AYHAN BOZKURT)
Bachelor's Degree 2002 10/Haziran/2006	

Academic Title

ASSISTANT PROFESSOR 20.04.2015 GEBZE TECHNICAL UNIVERSITY/MÜHENDİSLİK FAKÜLTESİ/BİYOMÜHENDİSLİK BÖLÜMÜ/BİYOMALZEME ANABİLİM DALI

Supervised Theses:

Yüksek Lisans

2017

1. DENİZ AYŞE BETÜL, (2017). PEM yakıt hücreleri için kompozit membran üretimi, Gebze Teknik Üniversitesi->Fen Bilimleri Enstitüsü->Malzeme Bilimi ve Mühendisliği Ana Bilim Dalı (Tamamlandı)

Doktora

2023

2. KAPTAN USUL SEDEF, (2023). Nanobiyomalzemelerin sentezi, karakterizasyonu ve biyoteknolojik uygulamaları, Yıldız Teknik Üniversitesi->Fen Bilimleri Enstitüsü->Biyomühendislik Ana Bilim Dalı (Tamamlandı)

Positions in Projects:

1. Anti-kanser Tedavileri İçin Fonksiyonel Gözenekli Silika Kaplı Demir Oksit Nanokompozitlerinin Tasarlanması
, Scientific Research Project Supported by Higher Education Institutions, Araştırmacı:Sedef Kaptan Usul, Yürütücü:AYŞE ASLAN CANPOLAT, , 10/10/2019 - 10/10/2020 (NATIONAL)
3D yazıcı malzemesi tasarlayarak dental malzeme üretimi, Other Public Organisations (except for

- Higher Education Institutions), Yürütücü:AYŞE ASLAN CANPOLAT, , 08/06/2015 - 24/10/2016 (NATIONAL)
PROTON DEĞİŞİM MEMBRANLI YAKIT HÜCRELERİ (PEMEC) İÇİN NANOKOMPOZİT MEMBRANLARIN HAZIRLANMASI VE TESTLERİ, Scientific Research Project Supported by Higher Education Institutions, Yürütücü:ASLAN AYŞE,Araştırmacı:gümüşdereli eda, , 09/08/2016 - 09/08/2017 (NATIONAL)
- Flor İçerikli Dental Kompozitlerin Sentezi ve Karakterizasyonu, Scientific Research Project Supported by Higher Education Institutions, Araştırmacı:sedef kaptan usul, Yürütücü:AYŞE ASLAN CANPOLAT, , 18/07/2022 - 18/07/2023 (NATIONAL)

Administrative Position

Head of Major Department 2021	GEBZE TECHNICAL UNIVERSITY/MÜHENDİSLİK FAKÜLTESİ/BİYOMÜHENDİSLİK BÖLÜMÜ/BİYOMALZEME ANABİLİM DALI
Head of Major Department 2021	GEBZE TECHNICAL UNIVERSITY/MÜHENDİSLİK FAKÜLTESİ/BİYOMÜHENDİSLİK BÖLÜMÜ/BİYOMALZEME ANABİLİM DALI
Vice Director of Institute 01.03.2019	GEBZE TECHNICAL UNIVERSITY/ENERJİ TEKNOLOJİLERİ ENSTİTÜSÜ

Works

Articles published in international refereed journals:

- KAPTAN USUL SEDEF,ASLAN CANPOLAT AYŞE,LÜLEÇİ HATİCE BÜŞRA,ERGÜDEN BENGÜ (2024). Effects of Hexagonal Boron Nitride and Mesoporous Silica Nanoparticles on the Morphology, Mechanical Properties and Antimicrobial Activity of Dental Composites. Journal of Cluster Science, 35, Doi: 10.1007/s10876-024-02658-1 (Publication No: 9103095)
- KAPTAN USUL SEDEF,LÜLEÇİ HATİCE BÜŞRA,DEĞİRMENCİ NURDAN SENA,ERGÜDEN BENGÜ,ASLAN CANPOLAT AYŞE,SOYDAN ALİ MURAT (2024). Differential Silica Nanoparticles Functionalized with Branched Poly(1-Vinyl-1,2,4-Triazole): Antibacterial, Antifungal, and Cytotoxic Qualities. Journal of

Articles published in international refereed journals:

Nanomaterials, 2024, Doi: 10.1155/2024/9998736 (Publication No: 8933481)

3. Aydın Hamide, Üstün Burcu, KURTAN ÜMRAN, ASLAN CANPOLAT AYŞE, KARAKUŞ SELCAN (2024). Incorporating Gadolinium Oxide (Gd₂O₃) as a Rare Earth Metal Oxide in Carbon Nanofiber Skeleton for Supercapacitor Application. *ChemElectroChem*, 11, Doi: 10.1002/celec.202300585 (Publication No: 8902058)
4. KAPTAN USUL SEDEF, BİNAY BARIŞ, SOYDAN ALİ MURAT, ASLAN CANPOLAT AYŞE (2024). A newly synthesized magnetic nanoparticle coated with glycidyl methacrylate monomer and 1,2,4-Triazole: Immobilization of α -Amylase from *Bacillus licheniformis* for more reuse, stability, and activity in the presence of H₂O₂. *Bioorganic Chemistry*, 143, Doi: 10.1016/j.bioorg.2023.107068 (Publication No: 8902050)
5. KAPTAN USUL SEDEF, luleci hatice busra, ERGÜDEN BENGÜ, ASLAN CANPOLAT AYŞE (2023). Antimicrobial Properties of Azole Functional Silica Nanocomposites. *ChemistrySelect*, 8, Doi: 10.1002/slct.202303059 (Publication No: 8871836)
6. KAPTAN USUL SEDEF, ASLAN CANPOLAT AYŞE, BİNAY BARIŞ, SOYDAN ALİ MURAT, Yüzüak Okan (2022). Immobilization of the *Bacillus licheniformis* α -Amylase on Azole Functionalized Nanoparticle: More Active, Stable, and Usability. *The Protein Journal*, 41, 671-680., Doi: 10.1007/s10930-022-10082-5 (Publication No: 7860563)
7. KAPTAN USUL SEDEF, ASLAN CANPOLAT AYŞE, luleci hatice busra, ERGÜDEN BENGÜ, ÇÖPOĞLU MUHAMMED TARIK, OFLAZ HAKAN, SOYDAN ALİ MURAT, ÖZÇİMEN DİDEM (2022). Investigation of antimicrobial and mechanical effects of functional nanoparticles in novel dental resin composites. *Journal of Dentistry*, 123, Doi: 10.1016/j.jdent.2022.104180 (Publication No: 7861423)
8. ASLAN AYŞE, gümüşdereli eda, SOYDAN ALİ MURAT (2019). PEM Yakıt Hücresi Uygulamaları İçin İmidazol Fonksiyonel Nano SiO₂/Nafyon Nanokompozit Membranların Üretilmesi. *Gazi Üniversitesi Mühendislik-Mimarlık Fakültesi Dergisi*, 34(1), Doi: 10.17341/gazimmfd.416498 (Publication No: 4721976)
9. ASLAN AYŞE, elanthikkal silviya, BOZKURT AYHAN (2018). Chitosan/hollow silica sphere nanocomposites for wound healing application. *Journal of Materials Research*, 34(2), 231-239., Doi: 10.1557/jmr.2018.430 (Publication No: 4720130)
10. CENGİZ ELİF CEYLAN, ERDÖL ZEYNEP, SAKAR BAHA, ASLAN AYŞE, ATA ALİ, ÖZTÜRK OSMAN, DEMİR ÇAKAN REZAN (2017). Investigation of the Effect of Using Al₂O₃-Nafion Barrier on Room-Temperature Na-S Batteries. *Journal of Physical Chemistry C*, 121(28), 15120-15126., Doi: 10.1021/acs.jpcc.7b04711 (Publication No: 3957098)
11. ERKARTAL MUSTAFA, ASLAN AYŞE, Erkilic Ufuk, DADI ŞEYMA, Yazaydin Ozgur, USTA HAKAN, ŞEN ÜNAL (2016). Anhydrous proton conducting poly(vinyl alcohol) (PVA)/poly(2-acrylamido-2-methylpropane sulfonic acid) (PAMPS)/1,2,4-triazole composite membrane. *INTERNATIONAL JOURNAL OF HYDROGEN ENERGY*, 41(26), 11321-11330., Doi: 10.1016/j.ijhydene.2016.04.152 (Publication No: 5560414)
12. ASLAN AYŞE, soydan ali murat, BOZKURT AYHAN (2015). Synthesis and characterization of novel multifunctional polymer grafted hollow silica spheres. *Journal of Materials Research*, 30(16), 2408-2416., Doi: 10.1557/jmr.2015.222 (Publication No: 2144506)
13. SİNİRLİOĞLU DENİZ, ASLAN AYŞE, MÜFTÜOĞLU ALİ EKREM, BOZKURT AYHAN (2014). Synthesis and proton conductivity studies of methacrylate methacrylamide based azole functional novel polymer electrolytes. *Journal of Applied Polymer Science*, 131(4), 39915, Doi: 10.1002/app.39915 (Publication No: 1933404)
14. ASLAN AYŞE, BOZKURT AYHAN (2014). Nanocomposite membranes based on sulfonated polysulfone and sulfated nano titania NMPA for proton exchange membrane fuel cells. *Solid State Ionics*, 255, 89-95., Doi: 10.1016/j.ssi.2013.11.054 (Publication No: 2139398)
15. ASLAN AYŞE, BOZKURT AYHAN (2013). Preparation of proton conducting membranes containing bifunctional titania nanoparticles. *Journal of Nanoparticle Research*, 15(7), Doi: 10.1007/s11051-013-1781-4 (Publication No: 2139652)
16. ASLAN AYŞE, BOZKURT AYHAN (2013). As an Alternative Membrane Functional NanoParticles Polymer Composites Membranes for Proton Exchange Membrane Fuel Cells PEMFC. *Advanced Materials Research*, 716, 98-102., Doi: 10.4028/www.scientific.net/AMR.716.98 (Publication No: 2144168)
17. ASLAN AYŞE, BOZKURT AYHAN (2013). An investigation of proton conductivity of nanocomposite membranes based on sulfated nano titania and polymer. *Solid State Ionics*, 239, 21-27., Doi: 10.1016/j.ssi.2013.03.004 (Publication No: 2139772)
18. ASLAN AYŞE, BOZKURT AYHAN (2012). Nanocomposite polymer electrolyte membranes based on poly vinylphosphonic acid TiO₂ nanoparticles. *Journal of Materials Research*, 27(24), 3090-3095., Doi: 10.1557/jmr.2012.385 (Publication No: 2140208)
19. ASLAN AYŞE, GÖLÇÜK KURTULUŞ, BOZKURT AYHAN (2012). Nanocomposite polymer electrolytes membranes based on Poly vinylphosphonic acid SiO₂. *Journal of Polymer Research*, 19(12), Doi: 10.1007/s10965-012-0022-3 (Publication No: 2140131)

Articles published in international refereed journals:

- ASLAN AYŞE, GÖLÇÜK KURTULUŞ, BOZKURT AYHAN (2012). Nanocomposite polymer electrolytes membranes based on Poly vinylphosphonic acid SiO₂. *Journal of Polymer Research*, 19(12), Doi: 10.1007/s10965-012-0022-3 (Publication No: 2140131)
20. ASLAN AYŞE, BOZKURT AYHAN (2012). Nanocomposite polymer electrolyte membranes based on poly vinylphosphonic acid sulfated nano titania. *Journal of Power Sources*, 217, 158-163., Doi: 10.1016/j.jpowsour.2012.05.011 (Publication No: 2140318)
 21. DURMUŞ ZEHRA, KAVAS HÜSEYİN, sözeri hüseyin, toprak muhammet, ASLAN AYŞE, BAYKAL ABDULHADİ (2012). Poly vinyl phosphonic acid PVPA BaFe₁₂O₁₉ Nanocomposite. *Journal of Superconductivity and Novel Magnetism*, 25(4), 1185-1193., Doi: 10.1007/s10948-011-1396-x (Publication No: 2141358)
 22. ASLAN AYŞE, BOZKURT AYHAN (2011). Proton conducting properties of ionically cross linked poly 1 vinyl 1 2 4 triazole and poly 2 acrylamido 2 methyl 1 propanesulfonic acid electrolytes. *Polymer Bulletin*, 66(8), 1099-1110., Doi: 10.1007/s00289-010-0400-0 (Publication No: 2141728)
 23. DURMUŞ ZEHRA, ÜNAL BAYRAM, muhammet toprak, ASLAN AYŞE, BAYKAL ABDULHADİ (2011). Synthesis and characterization of poly 1 vinyl 1 2 4 triazole PVTri barium hexaferrite nanocomposite. *Physica B: Condensed Matter*, 406(11), 2298-2302., Doi: 10.1016/j.physb.2011.03.063 (Publication No: 2141664)
 24. DURMUŞ ZEHRA, ERDEMİ HAMİT, ASLAN AYŞE, muhammet toprak, hüseyin sözeri, BAYKAL ABDULHADİ (2011). Synthesis and characterization of poly vinyl phosphonic acid PVPA Fe₃O₄ nanocomposite. *Polyhedron*, 30(2), 419-426., Doi: 10.1016/j.poly.2010.11.011 (Publication No: 2142043)
 25. ASLAN AYŞE, BOZKURT AYHAN (2010). Bioinspired Blend Membranes Based on Adenine and Guanine Functional Poly glycidyl methacrylate. *Langmuir*, 26(16), 13655-13661., Doi: 10.1021/la102096y (Publication No: 2142130)
 26. KAVAS HÜSEYİN, DURMUŞ ZEHRA, BAYKAL ABDULHADİ, ASLAN AYŞE, BOZKURT AYHAN, Toprak Muhammet S (2010). Synthesis and conductivity evaluation of PVTri Fe₃O₄ nanocomposite. *JOURNAL OF NON-CRYSTALLINE SOLIDS*, 356, 484-489., Doi: 10.1016/j.jnoncrysol.2009.12.022 (Publication No: 255981)
 27. ASLAN AYŞE, ÜNÜGÜR ÇELİK SEVİM, BOZKURT AYHAN (2009). Proton conducting properties of the membranes based on poly vinyl phosphonic acid grafted poly glycidyl methacrylate. *Solid State Ionics*, 180, 1240-1245., Doi: 10.1016/j.ssi.2009.07.003 (Publication No: 2142506)
 28. DURMUŞ ZEHRA, KAVAS HÜSEYİN, toprak muhammet, BAYKAL ABDULHADİ, GÜRKAYNAK ALTINÇEKİÇ TUBA, ASLAN AYŞE, BOZKURT AYHAN, COŞGUN SEDAT (2009). L lysine coated iron oxide nanoparticles Synthesis structural and conductivity characterization. *Journal of Alloys and Compounds*, 484, 371-376., Doi: 10.1016/j.jallcom.2009.04.103 (Publication No: 2142798)
 29. ASLAN AYŞE, ŞEN ÜNAL, BOZKURT AYHAN (2009). Preparation Properties and Characterization of Polymer Electrolyte Membranes Based on Poly 1 vinyl 1 2 4 triazole and Poly styrene sulfonic acid. *Journal of The Electrochemical Society*, 156(10), 1112, Doi: 10.1149/1.3176878 (Publication No: 2143359)
 30. ASLAN AYŞE, BOZKURT AYHAN (2009). Development and characterization of polymer electrolyte membranes based on ionic cross linked poly 1 vinyl 1 2 4 triazole and poly vinylphosphonic acid. *Journal of Power Sources*, 191(2), 442-447., Doi: 10.1016/j.jpowsour.2009.02.040 (Publication No: 2142881)
 31. ASLAN AYŞE, ÜNÜGÜR ÇELİK SEVİM, ŞEN ÜNAL, Haser Resul, BOZKURT AYHAN (2009). Intrinsically proton-conducting poly(1-vinyl-1,2,4-triazole)/triflic acid blends. *ELECTROCHIMICA ACTA*, 54(11), 2957-2961., Doi: 10.1016/j.electacta.2008.12.026 (Publication No: 5559983)
 32. ÜNÜGÜR ÇELİK SEVİM, ASLAN AYŞE, BOZKURT AYHAN (2008). Phosphoric acid doped poly 1 vinyl 1 2 4 triazole as water free proton conducting polymer electrolytes. *Solid State Ionics*, 179, 683-688., Doi: 10.1016/j.ssi.2008.04.033 (Publication No: 2143437)

B. Papers presented at international scientific meetings and published in proceedings :

1. KAPTAN USUL SEDEF, ASLAN CANPOLAT AYŞE (2021). Preparation and Characterization of Azol Functionalized Nanoparticles for Amylase Immobilization. 13th International Conference on Protein Stabilization (Abstract/Oral Presentation) (Publication No: 7860768)
2. ASLAN CANPOLAT AYŞE, KAPTAN USUL SEDEF (2023). Synthesis and Characterization of Fluorine-Contained Dental Composites. 6th International Eurasian Conference on Biological and Chemical Sciences (EurasianBioChem 2023) (Abstract/Oral Presentation) (Publication No: 8945651)
3. KAPTAN USUL SEDEF, BİNAY BARIŞ, ASLAN CANPOLAT AYŞE (2023). The effect of functional groups in nanomaterials on the activation, stability and reusability of enzyme immobilization . IV. International Enzyme and Bioprocess Days EBDays 2023 (Abstract/Oral Presentation)

(Publication No: 8483830)

4. KAPTAN USUL SEDEF, ASLAN CANPOLAT AYŞE (2020). Benzimidazol-SiO₂ biyonanokompozitlerin dental uygulamaları. International Eurasian Conference on Biotechnology and Biochemistry (Full Text Publication/Oral Presentation) (Publication No: 7860699)
5. KAPTAN USUL SEDEF, ASLAN CANPOLAT AYŞE (2020). Amino fonksiyonel nanokompozitlerin sentezi ve karakterizasyonu. International Eurasian Conference on Biotechnology and Biochemistry (Abstract/Poster) (Publication No: 7860688)
6. ASLAN AYŞE, KAPTAN SEDEF (2017). As Novel Dental Composites Filler: Azol Functional SiO₂. International Symposium on Industry 4.0 and Applications (Abstract/Oral Presentation) (Publication No: 4091640)
7. ASLAN AYŞE, Erdöl Zeynep, SOYDAN ALİ MURAT (2016). preparation and characterization of azol functional SiO₂/ PVPA composite membranes for PEMFC. 12th International Nanoscience and Nanotechnology Conference, 1(1), 194-194. (Abstract/Poster) (Publication No: 3411826)
8. ASLAN AYŞE, SOYDAN ALİ MURAT (2016). Synthesis and Characterization of Functional Hollow Silica Spheres. Biomatsen 2016, 1(1) (Abstract/Oral Presentation) (Publication No: 3411921)
9. CENGİZ ELİF CEYLAN, Erdöl Zeynep, ASLAN AYŞE, ATA ALİ, DEMİR ÇAKAN REZAN (2016). Use of Al₂O₃ Nafion Membranes for Room Temperature Sodium Sulfur Na S Batteries. 229th the Electrochemical Society Meeting (Abstract/Oral Presentation) (Publication No: 3381113)
10. ASLAN AYŞE, SOYDAN ALİ MURAT, Erdöl Zeynep (2016). FUNCTIONAL SiO₂ NANOPARTICLES /NAFION COMPOSITE MEMBRANES FOR PEMFC APPLICATION. Ingeg & Emhytec 2016 (Abstract/Oral Presentation) (Publication No: 3413028)
11. ASLAN AYŞE, SOYDAN ALİ MURAT (2016). FUNCTIONAL SiO₂ NANOPARTICLES /PVPA COMPOSITE MEMBRANES FOR PEMFC APPLICATIONS. Ingeg&Emhytec 2016 (Abstract/Poster) (Publication No: 3413020)
12. ASLAN AYŞE, SOYDAN ALİ MURAT, BOZKURT AYHAN (2016). As PEMFC Membrane: Functional TiO₂ /Nafion Nanocomposites. Ingeg&Emhytec 2016 (Abstract/Poster) (Publication No: 3413009)

D. Articles published in national refereed journals :

1. KAPTAN USUL SEDEF, ASLAN CANPOLAT AYŞE, ÖZÇİMEN DİDEM (2022). Azol fonksiyonel gözenekli ve içi boş silika nanokompozitlerin karakterizasyonu ve antifungal uygulamaları. Eurasian Journal of Biological and Chemical Sciences, Doi: 10.46239/ejbcs.1033670 (Control No: 8194391)
2. ASLAN CANPOLAT AYŞE, KAPTAN USUL SEDEF (2022). PEM TİPİ YAKIT HÜCRELERİ İÇİN İMİDAZOL FONKSİYONEL SİLİKA / POLİ (GLİSİDİL METAKRİLAT) NANOKOMPOZİT MEMBRANLARIN ÜRETİLMESİ VE KARAKTERİZASYONU. Adıyaman Üniversitesi Mühendislik Bilimleri Dergisi (Control No: 7860616)
3. ASLAN CANPOLAT AYŞE, KAPTAN USUL SEDEF (2021). DENTAL UYGULAMALAR İÇİN YENİ NESİL FONKSİYONEL NANOKOMPOZİTLERİN HAZIRLANMASI VE KARAKTERİZASYONU. İnönü Üniversitesi Sağlık Hizmetleri Meslek Yüksek Okulu Dergisi, 9, Doi: 10.33715/inonusaglik.850453 (Control No: 8953190)

E. Papers presented at national scientific meetings and published in

1. ASLAN CANPOLAT AYŞE, SOYDAN ALİ MURAT, BOZKURT AYHAN (2015). Synthesis and characterization of novel multifunctional SiO₂ nanoparticles. 10th Annual TechConnect World Innovation Conference and Expo, Held Jointly with the 18th Annual Nanotech Conference and Expo, and the 2015 National SBIR/STTR Conference, 253-256. (Abstract/Poster) (Publication No: 8953212)

Non-academic Experience

01.01.2022-
28.12.2022 Visiting Scholar University of California, Davis, (Abroad University)

Research

639806 BİDEB 2219, miRNA/siRNA İçerikli Nano İlaç Uygulamaları İçin Aptamer Fonksiyonel Nanoparçacıkların Tasarlanması, ABD, UCDAVIS UNIVERSITY, SCHOOL OF MEDICINE, Research, 30.12.2021 -29.12.2022 (International)