

## Assoc. Prof. MÜRŞİDE HACIİSMAİLOĞLU

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Publons / Web Of Science ResearcherID: AAH-9719-2021

ScopusID: 36482867500

Yoksis Researcher ID: 157809

### Education Information

Doctorate, Bursa Uludağ University, FEN BİLİMLERİ ENSTİTÜSÜ, Fizik (Dr), Turkey 2005 - 2010

Postgraduate, Bursa Uludağ University, FEN BİLİMLERİ ENSTİTÜSÜ, Fizik (YI) (Tezli), Turkey 2003 - 2005

Undergraduate, Bursa Uludağ University, FEN-EDEBİYAT FAKÜLTESİ, Fizik Bölümü, Turkey 1999 - 2003

### Dissertations

Doctorate, Co/Cu süperörgülerin elektrokimyasal olarak üretilmesi ve yapısal ve manyetik özelliklerinin incelenmesi, 2010

Postgraduate, Co-Cu alaşım filmlerinin elektrodepozisyonu ve özelliklerinin incelenmesi, 2005

### Research Areas

Natural Sciences

### Academic Titles / Tasks

Associate Professor, Bursa Uludağ University, FEN-EDEBİYAT FAKÜLTESİ, FİZİK, 2016 - Continues

Assistant Professor, Bursa Uludağ University, FEN-EDEBİYAT FAKÜLTESİ, FİZİK, 2012 - 2016

Research Assistant PhD, University of Bristol, 2012 - 2012

Research Assistant PhD, Bursa Uludağ University, FEN-EDEBİYAT FAKÜLTESİ, FİZİK, 2010 - 2012

Research Assistant, Bursa Uludağ University, FEN BİLİMLERİ ENSTİTÜSÜ, FEN BİLİMLERİ ENSTİTÜSÜ, 2005 - 2010

Research Assistant, Bursa Uludağ University, FEN BİLİMLERİ ENSTİTÜSÜ, FEN BİLİMLERİ ENSTİTÜSÜ, 2005 - 2005

### Academic and Administrative Experience

Deputy Head of Department, Bursa Uludağ University, Fen-Edebiyat Fakültesi, Fizik, 2019 - 2022

### Advising Theses

Şafak Hacismailoğlu M., Süperkapasitör uygulamaları için Mn-oksit filmlerin üretilmesi, Postgraduate, İ.ORHAN(Student), 2023

Şafak Hacismailoğlu M., Elektrokimyasal depozisyon yöntemi ile üretilen polipirol ve polipirol-mangan oksit filmlerin kapasitif davranışlarının araştırılması, Doctorate, D.VATANSEVER(Student), 2023

Şafak Hacismailoğlu M., İletken polimer ve metal parçacık içeren kompozit filmler, Postgraduate, A.SAÇIK(Student), 2021

Şafak Hacismailoğlu M., Hacismailoğlu M., Production of Cu<sub>2</sub>O (Copper (I) Oxide) thin films by electorchemical technique and

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Binary potential loop electrodeposition and corrosion resistance of Cr coatings**  
Kus E., ŞAFAK HACİSMAİLOĞLU M., ALPER M.  
Journal of Applied Electrochemistry, vol.54, no.12, pp.2871-2886, 2024 (SCI-Expanded)
- II. **Polypyrrole-oxalate and polypyrrole-sulfate electrodes for supercapacitor applications**  
Hacıismailoglu M., Vatansever D., Alper M.  
CHEMICAL PAPERS, vol.78, pp.3315-3329, 2024 (SCI-Expanded)
- III. **Pencil graphite/polypyrrole supercapacitors: The structural and chemical changes of the electrodes after capacitive measurements**  
Vatansever D., Şafak Hacıismailoğlu M.  
MATERIALS CHEMISTRY AND PHYSICS, vol.295, 2023 (SCI-Expanded)
- IV. **Electrical and optical properties of Schottky diodes fabricated by electrodeposition of Ni films on n-GaAs**  
HACİSMAİLOĞLU M. C., AHMETOĞLU M., ŞAFAK HACİSMAİLOĞLU M., ALPER M., Batmaz T.  
Sensors and Actuators A: Physical, vol.347, 2022 (SCI-Expanded)
- V. **Optical design of light guide prisms with surface roughness for automotive tail lights**  
Guney E., ALPER M., Hacıismailoglu M.  
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART D-JOURNAL OF AUTOMOBILE ENGINEERING, no.9, pp.2393-2401, 2020 (SCI-Expanded)
- VI. **Effect of NiFe layer thickness on properties of NiFe/Cu superlattices electrodeposited on titanium substrate**  
KURU H., AYTEKİN N. C., KÖÇKAR H., Hacıismailoglu M., ALPER M.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, no.19, pp.17879-17889, 2019 (SCI-Expanded)
- VII. **Electrodeposition and Characterization of Co/Cu Multilayers**  
Hacıismailoglu M., Alper M., Kockar H., Karaagac O.  
ACTA PHYSICA POLONICA A, no.4, pp.773-775, 2016 (SCI-Expanded)
- VIII. **Effects of the PPy layer thickness on Co-PPy composite films**  
Hacıismailoglu M.  
APPLIED SURFACE SCIENCE, pp.817-826, 2015 (SCI-Expanded)
- IX. **Relation between ferromagnetic layer thickness (NiCu) and properties of NiCu/Cu multilayers**  
KURU H., KÖÇKAR H., ALPER M., Hacıismailoglu M.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, no.7, pp.5014-5021, 2015 (SCI-Expanded)
- X. **The effect of ferromagnetic and non-ferromagnetic layer thicknesses on the electrodeposited CoFe/Cu multilayers**  
Tekgul A., ALPER M., KÖÇKAR H., Hacıismailoglu M.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, no.4, pp.2411-2417, 2015 (SCI-Expanded)
- XI. **Electrodeposited CoFeCu films at high and low pH levels: structural and magnetic properties**  
KÖÇKAR H., OZERGIN E., KARAAĞAÇ Ö., ALPER M., KURU H., Hacıismailoglu M.  
JOURNAL OF MATERIALS SCIENCE-MATERIALS IN ELECTRONICS, no.4, pp.2090-2094, 2015 (SCI-Expanded)
- XII. **Electrodeposition and Characterization of Co Particles on Ultrathin Polypyrrole Films**  
Hacıismailoglu M., Hacıismailoglu M. C., ALPER M., Schwarzacher W.  
JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM, no.11, pp.2599-2606, 2014 (SCI-Expanded)
- XIII. **Electrodeposited NiCoFe films from electrolytes with different Fe ion concentrations**  
KÖÇKAR H., DEMIRBAS O., KURU H., ALPER M., KARAAĞAÇ Ö., Hacıismailoglu M., OZERGIN E.  
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, pp.148-151, 2014 (SCI-Expanded)
- XIV. **Substrate type and their rotation speed controlled magnetic anisotropy of iron films evaporated by a newly designed vacuum coating system**  
Kockar H., Karaagac O., Kuru H., Karpuz A., Hacıismailoglu M., Alper M.  
OPTOELECTRONICS AND ADVANCED MATERIALS-RAPID COMMUNICATIONS, no.3-4, pp.270-273, 2014 (SCI-Expanded)
- XV. **Coating Effect on Magnetic Properties of  $\text{Fe}_{36}\text{Co}_{36}\text{B}_{19.2}\text{Si}_{4.8}\text{Mo}_3\text{W}_1$  Amorphous Ribbons**  
Perincek F., Hacıismailoglu M., Sarlar K., Hacıismailoglu M. C., Alper M., Kucuk I.  
ACTA PHYSICA POLONICA A, no.2, pp.408-410, 2014 (SCI-Expanded)

- XVI. **Properties of Electrodeposited CoFeNi/Cu Superlattices: The Effect of CoFeNi and Cu Layers Thicknesses**  
Kalsen S., ALPER M., KÖÇKAR H., Hacıismailoğlu M., KARAAĞAÇ Ö., KURU H.  
JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM, no.4, pp.813-817, 2013 (SCI-Expanded)
- XVII. **Effect of Co and Cu Layer Thicknesses on Characterization of Electrodeposited Co/Cu Multilayers**  
Hacıismailoğlu M., ALPER M., KÖÇKAR H.  
SENSOR LETTERS, no.1, pp.106-109, 2013 (SCI-Expanded)
- XVIII. **Influence of Co:Cu ratio on properties of Co-Cu films deposited at different conditions**  
KARAAĞAÇ Ö., KÖÇKAR H., ALPER M., Hacıismailoğlu M.  
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, no.22, pp.3834-3838, 2012 (SCI-Expanded)
- XIX. **Electrodeposited Ni-Co films from electrolytes with different Co contents**  
Karpuz A., KÖÇKAR H., ALPER M., KARAAĞAÇ Ö., Hacıismailoğlu M.  
APPLIED SURFACE SCIENCE, no.8, pp.4005-4010, 2012 (SCI-Expanded)
- XX. **Effect of electrolyte pH and Cu concentration on microstructure of electrodeposited Ni-Cu alloy films**  
Hacıismailoğlu M., ALPER M.  
SURFACE & COATINGS TECHNOLOGY, no.6, pp.1430-1438, 2011 (SCI-Expanded)
- XXI. **Co-Fe Films: Effect of Fe Content on Their Properties**  
KÖÇKAR H., ALPER M., Sahin T., Hacıismailoğlu M.  
JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY, no.11, pp.7639-7642, 2010 (SCI-Expanded)
- XXII. **Magneto-resistance of CoNiCu/Cu Multilayers Electrodeposited from Electrolytes with Different Ni Ion Concentrations**  
Hacıismailoğlu M., Alper M., Kockar H.  
JOURNAL OF THE ELECTROCHEMICAL SOCIETY, no.10, 2010 (SCI-Expanded)
- XXIII. **Comparison of Ni-Cu alloy films electrodeposited at low and high pH levels**  
Alper M., KÖÇKAR H., Safak M., BAYKUL M. C.  
JOURNAL OF ALLOYS AND COMPOUNDS, no.1-2, pp.15-19, 2008 (SCI-Expanded)
- XXIV. **Growth and characterisation of electrodeposited Co/Cu superlattices**  
Safak M., Alper M., KÖÇKAR H.  
JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY, no.2, pp.854-860, 2008 (SCI-Expanded)
- XXV. **Electrical properties of n-Si/Cu Schottky diodes formed by electrodeposition**  
Ahmetoğlu (Afrailov) M., Alper M., Safak M., Ertürk K., Gurpinar B., Kocak F., Hacıismailoğlu C.  
JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS, no.4, pp.818-821, 2007 (SCI-Expanded)
- XXVI. **Electrical properties of n-Si /Cu Schottky diodes formed by electrodeposition**  
AHMETOĞLU M., ALPER M., Safak M., Ertürk K., Gurpinar B., KOÇAK F., HACIİSMAİLOĞLU M. C.  
Journal of Optoelectronics and Advanced Materials, vol.9, no.4, pp.818-821, 2007 (SCI-Expanded)
- XXVII. **Parameters affecting microstructure and magneto-resistance of electrodeposited Co-Cu alloy films**  
Safak M., Alper M., KÖÇKAR H.  
JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS, no.2, 2006 (SCI-Expanded)

### Articles Published in Other Journals

- I. **PROJECTION OF SCIENCES ONTO TEXTILE AND FASHION:NANO-TECHNOLOGY AND CHARGEABLE FABRIC EXAMPLE - PART II**  
iyidoğan d., akdemir ö., jıtka e., kaplan g., çavuş m. b., ŞAFAK HACIİSMAİLOĞLU M., ALPER M., çobanoğlu ö.  
Tekstil ve Mühendis, vol.26, no.113, pp.71-80, 2019 (Scopus)

### Refereed Congress / Symposium Publications in Proceedings

- I. **Development of Spintronic Sensor By Using Ferromagnetic Superlattices**  
Kelleci T., Hacıismailoğlu M. C., Hacıismailoğlu M., Alper M.  
8. INTERNATIONAL SCIENTIFIC RESEARCH AND INNOVATION CONGRESS, Baku, Azerbaijan, 22 - 23 June 2024
- II. **Cr based coatings electrodeposited by binary potential loop and their corrosion behaviour**  
Kuş E., HACIİSMAİLOĞLU M., ALPER M.  
11th International Conference on Materials Science and Nanotechnology for Next Generation, Çanakkale, Turkey, 22 - 25 May 2024

- III. **Magnetic behavior of the composite films consisting of polypyrrole and cobalt particles**  
Haciismailoğlu M.  
6nd International Conference on Material Science and Technology in Cappadocia, Nevşehir, Turkey, 26 - 28 November 2021, pp.503
- IV. **Structural properties of silicon nanowires produced by metal-assisted chemical etching method**  
Bozdoğan E., HACIİSMAİLOĞLU M. C., ŞAFAK HACIİSMAİLOĞLU M., ALPER M., Erdoğan N.  
8th International conference on materials science and nanotechnology for next generation (MSNG2021), Elazığ, Turkey, 14 July 2021, pp.57
- V. **Electrodeposition of p-type Copper-oxide films from an alkaline solution**  
SUBAŞI E., HACIİSMAİLOĞLU M. C., ŞAFAK HACIİSMAİLOĞLU M., ALPER M.  
8th International conference on materials science and nanotechnology for next generation (MSNG2021), Elazığ, Turkey, 14 July 2021
- VI. **Polypyrrole thin films for supercapacitor applications**  
VATANSEVER D., ŞAFAK HACIİSMAİLOĞLU M., ALPER M.  
8th International conference on materials science and nanotechnology for next generation (MSNG2021), Nevşehir, Turkey, 14 July 2021
- VII. **THE ELECTRICAL AND OPTICAL CHARACTERIZATION OF ELECTRODEPOSITED Ni /n-GaAs SCHOTTKY BARRIER DIODES**  
Batmaz T., Kirezli B., Şafak Haciismailoğlu M., Alper M., Ahmetoğlu M.  
rd International Conference on Organic Electronic Material Technologies (OEMT2018), Kırklareli, Turkey, 20 - 22 September 2018
- VIII. **The role of polypyrrole layer on titanium substrate for electrodeposition of cobalt**  
VATANSEVER D., ŞAFAK HACIİSMAİLOĞLU M., ALPER M., KURU H., KÖÇKAR H.  
5th International conference on materials science and nanotechnology for next generation (MSNG2018, 4 - 06 October 2018
- IX. **Electrodeposition of CoNi-polypyrrole composite films and their magnetic properties**  
VATANSEVER D., ŞAFAK HACIİSMAİLOĞLU M., ALPER M., ŞARLAR K., KÜÇÜK İ.  
5th International conference on materials science and nanotechnology for next generation (MSNG2018, 4 - 06 October 2018
- X. **Electrochemical deposition of Cobalt-Polypyrrole composite films by changing Cobalt deposition potential**  
Vatansever D., ŞAFAK HACIİSMAİLOĞLU M., ALPER M., KÖÇKAR H.  
Turkish Physical Society 34th International Physics Congress, Bodrum, Turkey, 5 - 09 September 2018
- XI. **Structural, Magnetic and Magnetoresistance Properties of NiFe/Cu Superlattices Electrodeposited on Titanium Substrate Depending on Ni Fe Layer Thickness**  
KURU H., Aytekin N., ŞAFAK HACIİSMAİLOĞLU M., ALPER M., KÖÇKAR H.  
Joint European Magnetic Symposia, JEMS'09, 3 - 07 September 2018
- XII. **Structural and optical properties of electrodeposited NiO thin films**  
Epiri Ç., ŞAFAK HACIİSMAİLOĞLU M., ALPER M., HACIİSMAİLOĞLU M. C.  
12th INTERNATIONAL WORKSHOP ON ELECTRODEPOSITED NANOSTRUCTURES, Sofija, Bulgaria, 16 - 18 March 2017
- XIII. **Otomotiv Dış Aydınlatma Sistemleri İçin Işık Tüplerinin Optik Tasarımı ve Prototip İmalatı**  
ŞENTÜRK GÜNEY E., ALPER M., ŞAFAK HACIİSMAİLOĞLU M., IŞIK M., TURŞUCULAR E.  
10.ULUSALAYDINLATMAKONGRESİ, Turkey, 16 - 18 April 2015
- XIV. **Elektrodepozisyon İle Üretilen NiO İnce Filmlerin Yapısal ve Optik Karakterizasyonu Otomotiv Dış Aydınlatmada İnce Film Uygulaması**  
TÜRE Ç., ŞAFAK HACIİSMAİLOĞLU M., ALPER M.  
10.ULUSALAYDINLATMAKONGRESİ, Turkey, 16 - 18 April 2015
- XV. **Electrodeposition And Characterization Of Cocu cu Multilayers**  
ŞAFAK HACIİSMAİLOĞLU M., ALPER M., KÖÇKAR H.  
5th International Advances in Applied Physics and Materials Science Congress & Exhibition (APMAS2015), 16 - 19 April 2015
- XVI. **Deposition parameters dependence of properties of Co Mn electrodeposition films**  
KARPUZ A., KÖÇKAR H., ALPER M., KARAAĞAÇ Ö., ŞAFAK HACIİSMAİLOĞLU M.  
9th international conferences on material science and engineering, 5 - 07 March 2015
- XVII. **Dependence of Magnetoresistance in Electrodeposited CoNiCu/Cu Multilayers on Ni Composition**  
Haciismailoglu M., Alper M., Kockar H.  
Symposium on Electrodeposition of Nanoengineered Materials and Devices 3 held during the 216th Meeting of the Electrochemical-Society (ECS), Vienna, Austria, 4 - 09 October 2009, pp.87-95
- XVIII. **Electrodeposited NiCo/Cu superlattices**  
Safak M., Alper M.

## Supported Projects

- AYDEMİR U., PEKSÖZ A., AKYILDIZ H. İ., TEMEL Ş. G., AKAY S. K., KARABÖRKLÜ Ö., DEMİRTAŞ M., KAPLAN H. K., ŞAFAK HACİİSMAİLOĞLU M., HAYBER Ş. E., et al., Project Supported by Higher Education Institutions, İki Boyutlu Grafen ve Metal Kalkojen Tabanlı Mikro-Nano Sistemlerin Geliştirilmesi ve Uygulamaları, 2024 - Continues
- HACİİSMAİLOĞLU M., HACİİSMAİLOĞLU M. C., VATANSEVER D., KUŞ E., ALPER M., Project Supported by Higher Education Institutions, Bitkisel ve Hayvansal Biyopolimerlerden Jel Elektrolit Yapımı ve Enerji Depolama Cihazlarında Kullanılması, 2023 - Continues
- ALPER M., VATANSEVER D., KUŞ E., BOZDOĞAN E., ORHAN İ., ŞAFAK HACİİSMAİLOĞLU M., HACİİSMAİLOĞLU M. C., GÜLTEKİN Z., SUBAŞI E., Project Supported by Higher Education Institutions, Süperkapasitör ve spinOLEDlerde kullanılan malzemelerin yapısal özelliklerinin incelenmesi ve diğer özellikler ile karşılaştırılması, 2022 - Continues
- Şafak Hacismailoğlu M., TÜBİTAK International Bilateral Joint Cooperation Program Project, Electrodeposition of Nanostructured Materials and Their Magnetic and Magnetotransport Characterisation, 2004 - 2025
- HACİİSMAİLOĞLU M., KUŞ E., Project Supported by Higher Education Institutions, NiCr Tabanlı Alaşımların Elektrodpozisyon Yöntemiyle Üretilmesi ve Karakterizasyonu, 2022 - 2024
- HACİİSMAİLOĞLU M., ORHAN İ., Project Supported by Higher Education Institutions, Süperkapasitör Uygulamaları İçin MnOksit Filmlerin Üretilmesi, 2022 - 2023
- Şafak Hacismailoğlu M., Kuş E., Project Supported by Other Private Institutions, Mikrodalga Frekans Aralığındaki Elektromanyetik Dalgalarla Etkileşimi Artırılmış, Korozif Ortamlara Dayanıklı Ni-Cr Tabanlı Metalik Alaşımların Elektrodpozisyon Yöntemi İle Üretilmesi ve Karakterizasyonu, 2021 - 2023
- Şafak Hacismailoğlu M., Vatansever D., Project Supported by Higher Education Institutions, Elektrokimyasal Depozisyon Yöntemi ile Üretilen Polipirol ve Polipirol-Mangan Filmlerin Kapasitif Davranışlarının Araştırılması, 2021 - 2023
- Hacismailoğlu M., Project Supported by Other Official Institutions, CoPd İnce Filmlerin Üretilmesi, Yapısal ve Manyetorezistans Özelliklerinin İncelenmesi , 2015 - 2017
- Şafak Hacismailoğlu M., Project Supported by Other Official Institutions, Organik Elektronik Cihazların Üretilmesi ve Karakterizasyonu, 2015 - 2017
- Şafak Hacismailoğlu M., İzgi B., Project Supported by Higher Education Institutions, Polipirol ve Co İçeren Kompozit Filmlerin Elektrokimyasal Yöntemle Sentezlenmesi ve Özelliklerinin Araştırılması, 2015 - 2016
- Şafak Hacismailoğlu M., Alper M., Industrial Thesis Project, Otomotiv Dış Aydınlatma Sistemleri İçin Farklı Geometrilere ve Homojen Işık Dağılımına Sahip Işık Tüpünün Optik Tasarımı ve Prototip İmalatı, 2013 - 2016
- ŞAFAK HACİİSMAİLOĞLU M., Project Supported by Other Private Institutions, Redox Fabrics, 2014 - 2015
- ŞAFAK HACİİSMAİLOĞLU M., ALPER M., Project Supported by Higher Education Institutions, Şekil Hafızalı Alaşımların Üretimi ve Özelliklerinin İncelenmesi, 2014 - 2015
- Küçük N., Küçük İ., Alper M., Şafak Hacismailoğlu M., Project Supported by Higher Education Institutions, Elektro Depozisyon ve Dönel Kaplama Yöntemleri ile Büyütülmüş Katkılı ve Katkısız ZnO İnce Filmlerin Termoluminesans ve Dozimetrik Özelliklerinin İncelenmesi, 2011 - 2013
- Şafak Hacismailoğlu M., Project Supported by Other Official Institutions, Nanoteknolojik Ferromanyetik Malzemelerin Elektrokimyasal Olarak Sentezlenmesi ve Karakterizasyonu, 2010 - 2013
- Şafak Hacismailoğlu M., Project Supported by Other Official Institutions, Manyetik Tek Tabaka Alaşım ve Süperörgülerde Manyetik ve Yapısal Özelliklerin İncelenmesi, 2007 - 2008
- Şafak Hacismailoğlu M., Project Supported by Other Official Institutions, Ferromanyetik Nanoteknolojik Malzemelerin Üretimi ve Karakterizasyonu, 2005 - 2007

## Patent

- Şafak Hacismailoğlu M., Vatansever D., Alper M., AYVA ÇEKİRDEĞİNDEN JEL ELEKTROLİT VE ÜRETİM YÖNTEMİ, Patent, CHAPTER G Physics, The Invention Registration Number: 2023/010451 , Standard Registration, 2024
- Şafak Hacismailoğlu M., Vatansever D., Alper M., ALOE VERADAN ELDE EDİLEN BİR JEL ELEKTROLİT, Patent, CHAPTER G Physics, The Invention Recourse Number: 2023/016183 , Standard Registration, 2023
- Şafak Hacismailoğlu M., Alper M., Kuş E., BİR KAPLAMA YÖNTEMİ, Patent, CHAPTER G Physics, The Invention Recourse Number: 2023/005578 , Standard Registration, 2023
- Şafak Hacismailoğlu M., Alper M., Vatansever D., GEL ELECTROLYTE FROM QUINCE SEED AND PRODUCTION METHOD, Patent, CHAPTER G Physics, The Invention Recourse Number: PCT/TR2023/051540 , Standard Registration, 2023

Şafak Hacismailođlu M., Alper M., Kuş E., A PLATING METHOD, Patent, CHAPTER G Physics, The Invention Recourse Number: PCT/TR2023/050524 , Standard Registration, 2023

Şafak Hacismailođlu M., Vatansever D., Alper M., PGE/PPy-Mn OKSİT ELEKTROT VE BU ELEKTRODU İÇEREN SÜPERKAPASİTÖR, Patent, CHAPTER G Physics, The Invention Recourse Number: 2022/018543 , Standard Registration, 2022

Şafak Hacismailođlu M., Vatansever D., Alper M., PGE/PPy-Mn OXIDE ELECTRODE AND SUPERCAPACITOR CONTAINING THIS ELECTRODE, Patent, CHAPTER G Physics, The Invention Recourse Number: PCT/TR2022/051507 , Standard Registration, 2022

## **Metrics**

Publication: 48

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