

## Prof.Dr. İSHAK KARAKAYA

### Kişisel Bilgiler

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### Uluslararası Araştırmacı ID'leri

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Yoksis Araştırmacı ID: 4464

### Eğitim Bilgileri

Doktora, McGill University, Metalurji Mühendisliği, Kanada 1981 - 1985  
Yüksek Lisans, McGill University, Metalurji Mühendisliği, Kanada 1979 - 1981  
Lisans, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji Ve Malzeme Mühendisliği Bölümü, Türkiye 1973 - 1978

### Yabancı Diller

İngilizce, C1 İleri

### Araştırma Alanları

Teknik Bilimler, Metalurji ve Malzeme Mühendisliği, Üretim Metalurjisi, Demir Dışı Metal Üretimi, Elektrolitik Kaplama, Elektrometalurji

### Akademik Unvanlar / Görevler

Prof.Dr., Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji Ve Malzeme Mühendisliği Bölümü, 1994 - Devam Ediyor  
Doç.Dr., Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji Ve Malzeme Mühendisliği Bölümü, 1988 - 1994  
Yrd.Doç.Dr., Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji Ve Malzeme Mühendisliği Bölümü, 1987 - 1988

### Akademik İdari Deneyim

Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Metalurji ve Malzeme Mühendisliği Bölümü, 2003 - 2006

## Verdiği Dersler

Materials Processing, Lisans, 2018 - 2019

## Yönetilen Tezler

- KARAKAYA İ., FORMATION OF Au-Ag-Cu TERNARY ALLOYS BY ELECTROCHEMICAL DEPOSITION, Yüksek Lisans, B.ÇAĞAN(Öğrenci), 2021
- KARAKAYA İ., Electroless deposition of oxidation resistant high temperature coatings in molten salt, Yüksek Lisans, İ.EMRE(Öğrenci), 2021
- KARAKAYA İ., Erimiş tuz içerisinde elektrokimyasal yöntemle al-sc alaşımı oluşturulması., Yüksek Lisans, Ç.Polat(Öğrenci), 2019
- KARAKAYA İ., Yüksek yoğunluklu poliüretan yüzeylerin metalizasyonu., Yüksek Lisans, B.Aykaç(Öğrenci), 2019
- KARAKAYA İ., Değerli Parçacık Gömülü Kompozit Atıkların Entegre Geri Dönüşümü, Yüksek Lisans, T.GÖYNÜK(Öğrenci), 2019
- KARAKAYA İ., Molibden refrakter metal tozlarının elektrokimyasal üretimi, Yüksek Lisans, B.Akpınar(Öğrenci), 2019
- KARAKAYA İ., Bakır üzerine kaplanan gümüşün yüzey özelliklerine darbe parametrelerinin etkisi., Yüksek Lisans, C.Başaran(Öğrenci), 2019
- KARAKAYA İ., Değerli parçacık gömülü kompozit atıkların entegre geri dönüşümü., Yüksek Lisans, T.Göynük(Öğrenci), 2019
- KARAKAYA İ., Electroformation and characterization of Al<sub>2</sub>O<sub>3</sub> embedded nickel matrix composite coatings, Yüksek Lisans, O.YILMAZ(Öğrenci), 2018
- KARAKAYA İ., Formation and characterization of electroformed cylindrical accordion geometry, Yüksek Lisans, B.ÇETİNÖZ(Öğrenci), 2018
- KARAKAYA İ., Electrochemical production of tungsten refractory metal powders, Yüksek Lisans, F.ÖZDEMİR(Öğrenci), 2017
- KARAKAYA İ., Cathodic Protection of Steel Components of Armoured Amphibious Vehicles in Marine Environment, Yüksek Lisans, R.AKSU(Öğrenci), 2017
- KARAKAYA İ., Cathodic protection of aluminum components of armoured amphibious vehicles in marine environment, Yüksek Lisans, R.ONUR(Öğrenci), 2017
- KARAKAYA İ., Computer simulation of processes involving multicomponent multiphase equilibria, Yüksek Lisans, M.SERDAL(Öğrenci), 2016
- KARAKAYA İ., EFFECTS OF ANODIZING PARAMETERS ON THE FORMATION OF TITANIUM DIOXIDE NANOTUBE ARRAYS ON Ti6Al4V ALLOY, Yüksek Lisans, Z.AYÇA(Öğrenci), 2015
- KARAKAYA İ., Ti6Al4V alaşımı üzerinde anodik oksitleme yöntemi ile oluşturulan titanyum oksit nanotüplerini etkileyen oksitleme değişkenleri., Yüksek Lisans, Z.Ayça(Öğrenci), 2015
- KARAKAYA İ., Formation of Indium Solder Material by Electrochemical Methods, Yüksek Lisans, O.ORKUT(Öğrenci), 2014
- KARAKAYA İ., Electrochemical formation of brazing alloys on metal substrates, Yüksek Lisans, F.JULU(Öğrenci), 2014
- KARAKAYA İ., ELECTROCHEMICAL FORMATION OF COLD SHIELD FOR OPTOELECTRONIC DEVICES, Yüksek Lisans, B.ARSLAN(Öğrenci), 2014
- KARAKAYA İ., KALKANLI A., Liquid phase sintering of tungsten-nickel-cobalt heavy alloys, Yüksek Lisans, O.DİNÇER(Öğrenci), 2014
- KARAKAYA İ., Electrocodeposition of molybdenum disulfide particles in nickel matrix, Doktora, E.SARALOĞLU(Öğrenci), 2013
- KARAKAYA İ., In-situ Formation of Mg-Ni Intermetallics, Yüksek Lisans, F.ERDEN(Öğrenci), 2013
- KARAKAYA İ., Recovery of tungsten from tungsten bearing compounds, Doktora, M.ERDOĞAN(Öğrenci), 2013
- KARAKAYA İ., Effect of chromium on the oxidation of steels used in the construction of petroleum refinery heaters, Doktora, A.SULTAN(Öğrenci), 2013
- KARAKAYA İ., Production of Tungsten by Pulsed Potential Electroreduction, Yüksek Lisans, O.GÖKÇE(Öğrenci), 2011
- KARAKAYA İ., Reduction of silicon dioxide by electrochemical deoxidation, Yüksek Lisans, E.ERGÜL(Öğrenci), 2010

KARAKAYA İ., ÖZTÜRK T., Ferroboron production by electrodeoxidation, Yüksek Lisans, T.ÖRS(Öğrenci), 2008  
KARAKAYA İ., Tungsten production by electrodeoxidation, Yüksek Lisans, M.ERDOĞAN(Öğrenci), 2007  
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KARAKAYA İ., High temperature corrosion of steels used in petroleum refinery heaters, Yüksek Lisans, A.SULTAN(Öğrenci), 2005  
KARAKAYA İ., Hydrometallurgical treatment of Beylikahır rare earth preconcentrate, Doktora, M.KUL(Öğrenci), 2003  
KARAKAYA İ., Yiterbiyum-baryum-bakır oksit süperiletken şeritlerin sol-jel metodu ile üretimi ve karakterizasyonu, Doktora, H.OKUYUCU(Öğrenci), 2002  
KARAKAYA İ., Development of a computer program for multi-element predominance area diagrams, Yüksek Lisans, E.KONCA(Öğrenci), 2000  
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KARAKAYA İ., Molten salt electrolysis of magnesium and its hydrodynamics, Yüksek Lisans, G.DEMİRCİ(Öğrenci), 1998  
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KARAKAYA İ., Kalay-bizmut sisteminin termodinamiği, Yüksek Lisans, H.OKUYUCU(Öğrenci), 1997  
TOPKAYA Y. A. , KARAKAYA İ., Recovery of lead and cadmium from cinkur waelz oxide by using chloridizing volatilization method., Doktora, M.Can(Öğrenci), 1996  
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KARAKAYA İ., Recovery of germanium and other metals from the leach residue of Çinkur, Yüksek Lisans, M.Can(Öğrenci), 1991

## SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- I. **A Novel and Eco-friendly Approach for the Simultaneous Recovery of Copper and Diamond from Waste Cutting Segments via Electrodeposition/Deposition**  
Kul M., Erden F., OSKAY K. O. , Karasungur O., ŞİMŞİR M., Kumruoglu L. C. , KARAKAYA İ.  
JOURNAL OF SUSTAINABLE METALLURGY, cilt.7, sa.3, ss.1224-1240, 2021 (SCI-Expanded)
- II. **Metallisation of high density polyurethane surfaces**  
Unlu B., Oz Y., ERDOĞAN M., KARAKAYA İ.  
INTERNATIONAL JOURNAL OF SURFACE SCIENCE AND ENGINEERING, cilt.15, sa.3, ss.242-264, 2021 (SCI-Expanded)
- III. **Effects and characterisations of pulse electrodeposition parameters of silver in terms of scattering parameter and surface roughness for waveguides operating at high frequencies**  
Başaran C., KARAKAYA İ.  
International Journal of Surface Science and Engineering, cilt.15, sa.2, ss.118-130, 2021 (SCI-Expanded)
- IV. **Combined effects of ALS and SLS on Al<sub>2</sub>O<sub>3</sub> reinforced composite nickel coatings**  
Yilmaz O., Erdogan M., Karakaya I.  
SURFACE ENGINEERING, cilt.36, sa.5, ss.477-484, 2020 (SCI-Expanded)
- V. **Effects of fabrication method on initial powder characteristics and liquid phase sintering behaviour of tungsten**  
Erol M., Erdogan M., Karakaya İ.  
INTERNATIONAL JOURNAL OF REFRACTORY METALS & HARD MATERIALS, cilt.77, ss.82-89, 2018 (SCI-Expanded)
- VI. **Removal of Trace Amounts of Copper from Concentrated Hydrochloric Acid Solutions**  
Erdogan M., Karakaya E., Aras M. S. , Karagul S. C. , Ersoy M. K. , Öztürk A., Karakaya İ.

- INTERNATIONAL JOURNAL OF ELECTROCHEMICAL SCIENCE, cilt.13, ss.10934-10947, 2018 (SCI-Expanded)
- VII. **Formation and characterization of infrared absorbing copper oxide surfaces**  
Arslan B., Demirci G., Erdogan M., Karakaya İ.  
APPLIED SURFACE SCIENCE, cilt.402, ss.218-224, 2017 (SCI-Expanded)
- VIII. **Investigation of the tribological behaviour of electrocodeposited Ni-MoS<sub>2</sub> composite coatings**  
Güler E. S. , Konca E., KARAKAYA İ.  
International Journal of Surface Science and Engineering, cilt.11, sa.5, ss.418-432, 2017 (SCI-Expanded)
- IX. **Processing and microstructural characterization of liquid phase sintered tungsten-nickel-cobalt heavy alloys**  
DINCER O., PEHLIVANOĞLU M. K. , CALISKAN N. K. , KARAKAYA İ., KALKANLI A.  
INTERNATIONAL JOURNAL OF REFRACTORY METALS & HARD MATERIALS, cilt.50, ss.106-112, 2015 (SCI-Expanded)
- X. **On the Preparation of Mg<sub>2</sub>Ni by Combining Electrodeoxidation and Electrolysis Techniques**  
ERDEN F., KARAKAYA İ., Erdogan M.  
INTERNATIONAL JOURNAL OF ELECTROCHEMICAL SCIENCE, cilt.9, sa.11, ss.6627-6639, 2014 (SCI-Expanded)
- XI. **Effects of current density, coating thickness, temperature, pH and particle concentration on internal stress during Ni-MoS<sub>2</sub> electrocodeposition**  
Guler E. S. , KARAKAYA İ., KONCA E.  
SURFACE ENGINEERING, cilt.30, sa.2, ss.109-114, 2014 (SCI-Expanded)
- XII. **Effect of Electrodeposition Parameters on the Current Density of Hydrogen Evolution Reaction in Ni and Ni-MoS<sub>2</sub> Composite Coatings**  
Gueler E. S. , KONCA E., KARAKAYA İ.  
INTERNATIONAL JOURNAL OF ELECTROCHEMICAL SCIENCE, cilt.8, sa.4, ss.5496-5505, 2013 (SCI-Expanded)
- XIII. **On the Electrochemical Reduction Mechanism of CaWO<sub>4</sub> to W Powder**  
Erdogan M., KARAKAYA İ.  
METALLURGICAL AND MATERIALS TRANSACTIONS B-PROCESS METALLURGY AND MATERIALS PROCESSING SCIENCE, cilt.43, sa.4, ss.667-670, 2012 (SCI-Expanded)
- XIV. **Influence of water vapour on high temperature oxidation of steels used in petroleum refinery heaters**  
Sultan A., KARAKAYA İ., Erdogan M.  
MATERIALS AND CORROSION-WERKSTOFFE UND KORROSION, cilt.63, sa.2, ss.119-126, 2012 (SCI-Expanded)
- XV. **Electrochemical decomposition of SiO<sub>2</sub> pellets to form silicon in molten salts**  
Ergul E., KARAKAYA İ., Erdogan M.  
JOURNAL OF ALLOYS AND COMPOUNDS, cilt.509, sa.3, ss.899-903, 2011 (SCI-Expanded)
- XVI. **Direct synthesis of Mg-Ni compounds from their oxides**  
Tan S., Aydinol K., ÖZTÜRK T., KARAKAYA İ.  
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- XVII. **Electrochemical Reduction of Tungsten Compounds to Produce Tungsten Powder**  
ERDOĞAN M., KARAKAYA İ.  
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- XVIII. **Synthesis of Fe-4.6 wt% B alloy via electro-deoxidation of mixed oxides**  
Ors T., Tan S., ÖZTÜRK T., KARAKAYA İ.  
JOURNAL OF MATERIALS SCIENCE, cilt.44, sa.13, ss.3514-3519, 2009 (SCI-Expanded)
- XIX. **Synthesis of FeTi from mixed oxide precursors**  
Tan S., Oers T., AYDINOL M. K. , ÖZTÜRK T., KARAKAYA İ.  
JOURNAL OF ALLOYS AND COMPOUNDS, cilt.475, ss.368-372, 2009 (SCI-Expanded)
- XX. **Electrolytic magnesium production and its hydrodynamics by using an Mg-Pb alloy cathode**  
Demirci G., KARAKAYA İ.  
JOURNAL OF ALLOYS AND COMPOUNDS, cilt.465, ss.255-260, 2008 (SCI-Expanded)
- XXI. **Rare earth double sulfates from pre-concentrated bastnasite**

- Kul M., TOPKAYA Y. A. , KARAKAYA İ.  
HYDROMETALLURGY, cilt.93, ss.129-135, 2008 (SCI-Expanded)
- XXII. **Collection of magnesium in an Mg-Pb alloy cathode placed at the bottom of the cell in MgCl<sub>2</sub> electrolysis**  
Demirci G., Karakaya I.  
JOURNAL OF ALLOYS AND COMPOUNDS, cilt.439, ss.237-242, 2007 (SCI-Expanded)
- XXIII. **ELECTROLYSIS OF MGCL<sub>2</sub> WITH A TOP INSERTED ANODE AND AN MG PB CATHODE**  
GUDEN M., KARAKAYA İ.  
JOURNAL OF APPLIED ELECTROCHEMISTRY, cilt.24, sa.8, ss.791-797, 1994 (SCI-Expanded)
- XXIV. **The Ag Se Silver Selenium System**  
KARAKAYA İ., Thompson W. T.  
Bulletin of Alloy Phase Diagrams, cilt.11, ss.266-271, 1990 (SCI-Expanded)
- XXV. **The Ag Mn Silver Manganese System**  
KARAKAYA İ.  
Bulletin of Alloy Phase Diagrams, cilt.11, ss.480-486, 1990 (SCI-Expanded)
- XXVI. **The Ag N Silver Nitrogen System**  
KARAKAYA İ.  
Bulletin of Alloy Phase Diagrams, cilt.11, ss.486-487, 1990 (SCI-Expanded)
- XXVII. **The Ag B Silver Boron System**  
KARAKAYA İ.  
Bulletin of Alloy Phase Diagrams, cilt.11, ss.547, 1990 (SCI-Expanded)
- XXVIII. **ADVICE SYSTEM ON HIGH-TEMPERATURE ALLOY CORROSION**  
JOHN R., THOMPSON W., KARAKAYA I.  
MATERIALS PERFORMANCE, cilt.28, sa.1, ss.69-73, 1989 (SCI-Expanded)
- XXIX. **PARTIAL MOLAR PROPERTIES OF MGCL<sub>2</sub> IN MGCL<sub>2</sub>-KCL-CACL<sub>2</sub> MELTS**  
ZHU J., KARAKAYA I., THOMPSON W.  
JOURNAL OF THE ELECTROCHEMICAL SOCIETY, cilt.135, sa.1, ss.122-126, 1988 (SCI-Expanded)
- XXX. **The Ag P Silver Phosphorus System**  
KARAKAYA İ.  
Bulletin of Alloy Phase Diagrams, cilt.9, ss.232-236, 1988 (SCI-Expanded)
- XXXI. **The Ag Re Silver Rhenium System**  
KARAKAYA İ.  
Bulletin of Alloy Phase Diagrams, cilt.9, ss.243-244, 1988 (SCI-Expanded)
- XXXII. **The Ag Pb Silver Lead System**  
KARAKAYA İ.  
Bulletin of Alloy Phase Diagrams, cilt.8, ss.326-334, 1987 (SCI-Expanded)
- XXXIII. **A THERMODYNAMIC STUDY OF THE SYSTEM MGCL<sub>2</sub>-NACL-CACL<sub>2</sub>**  
KARAKAYA İ., THOMPSON W.  
CANADIAN METALLURGICAL QUARTERLY, cilt.25, sa.4, ss.307-317, 1986 (SCI-Expanded)
- XXXIV. **THERMODYNAMIC PROPERTIES OF MGCL<sub>2</sub>-NACL MELTS FROM EMF-MEASUREMENTS**  
KARAKAYA İ., thompson w.  
JOURNAL OF THE ELECTROCHEMICAL SOCIETY, cilt.133, sa.4, ss.702-706, 1986 (SCI-Expanded)
- XXXV. **Thermodynamic properties of 1 x MgCl<sub>2</sub> xCaCl<sub>2</sub> melts**  
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- XXXVI. **The Ag Os Silver Osmium System**  
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- XXXVII. **The Ag Ir Silver Iridium System**  
KARAKAYA İ.  
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- XXXVIII. **Introduction of boundary conditions in the Pelton Flengas Gibbs Duhem Integration for ternary solutions**  
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- XXXIX. **Correction**  
KARAKAYA İ., thompson w.  
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- XL. **Thermodynamic properties of SnO in SnO TiO<sub>2</sub> melts**  
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Canadian Metallurgical Quarterly, cilt.22, ss.61-65, 1983 (SCI-Expanded)

## **Diğer Dergilerde Yayınlanan Makaleler**

- I. **Investigation of Au-Ag-Cu Alloy Electrodeposition to Electromechanical Systems**  
Çağan B., Erdoğan M., Yılmaz C., Yurdakul B., Karakaya I.  
ECS Transactions, cilt.97, sa.7, ss.485-490, 2020 (Scopus)
- II. **Effects of Pulse Electroplating Parameters on Return Loss (S<sub>11</sub>) and Surface Roughness of Silver Coatings**  
Başaran C., KARAKAYA İ.  
ECSArxiv, 2019 (Hakemli Dergi)
- III. **ERİMİŞ TUZ İÇİNDE ELEKTROKİMYASAL İNDİRGEME YÖNTEMİYLE SİLİSYUM ÜRETİMİ**  
ERDOĞAN M., Ergül E., KARAKAYA İ.  
Selçuk Üniversitesi Mühendislik Bilim ve Teknoloji Dergisi, 2017 (Hakemli Dergi)
- IV. **Katı Molibden Bileşiklerinin Elektrokimyasal İndirgenmesiyle Molibden Üretimi**  
ERDOĞAN M., Akpınar B., KARAKAYA İ.  
Çukurova Üniversitesi Mühendislik Mimarlık Fakültesi Dergisi, 2017 (Hakemli Dergi)
- V. **Friction Reducing Composite Plating in Rocket Launchers. International Journal of Engineering Research Development**  
SARALOĞLU GÜLER E., KARAKAYA İ.  
International Journal of Engineering Research Development, 2017 (Hakemli Dergi)
- VI. **Oxidation of Low Chromium Steels in Dry and Moist Atmospheres**  
ERDOĞAN M., SULTAN a., KARAKAYA İ.  
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- VII. **Taguchi Design of Internal Stress and Friction Measurements during Electrodeposition**  
SARALOĞLU GÜLER E., KARAKAYA İ.  
Journal of Material Science Engineering, cilt.6, 2017 (Hakemli Dergi)
- VIII. **The Role of Electrolyte Composition on Codeposited Ag and Cu**  
ulu f., Demici G., ERDOĞAN M., KARAKAYA İ.  
ECS Transactions, cilt.72, ss.35-44, 2016 (Scopus)
- IX. **A Pulse Voltage Application in Electrochemical Reduction of Solid CaWO<sub>4</sub> Powder**  
Goksu O. G., ERDOĞAN M., KARAKAYA İ.  
ECS Transactions, cilt.72, ss.31-39, 2016 (Scopus)
- X. **Formation of gold plated electroformed copper structures**  
ARSLAN B., Demirci G., KARAKAYA İ., ERDOĞAN M.  
Advances in Materials and Processing Technologies, cilt.1, ss.384-393, 2016 (Scopus)
- XI. **Formation of Titanium Dioxide Nanotube Arrays by Anodizing Ti6Al4V Alloy**  
KARAKAYA İ., ERDOĞAN M.  
ECS Transactions, cilt.58, ss.45-52, 2014 (Scopus)
- XII. **The Ag C Silver Carbon System**  
KARAKAYA İ., William T T.

- Bulletin of Alloy Phase Diagrams, cilt.9, ss.226-227, 1988 (Hakemli Dergi)
- XIII. **The Pb Sn Lead Tin System**  
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Bulletin of Alloy Phase Diagrams, cilt.9, ss.144-152, 1988 (Hakemli Dergi)
- XIV. **A Database for the Selection of Materials for High Temperature Service**  
KARAKAYA İ., Randy C J., William T T.  
Materials & Components in Fossil Energy Applications, US Department of Energy Newsletter, ss.1-3, 1988 (Hakemli Dergi)
- XV. **The Ag Pd Silver Palladium System**  
KARAKAYA İ., William T T.  
Bulletin of Alloy Phase Diagrams, cilt.9, ss.237-243, 1988 (Hakemli Dergi)
- XVI. **The Ag Sn Silver Tin System**  
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- XVII. **The Ag Pt Silver Platinum System**  
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Bulletin of Alloy Phase Diagrams, cilt.8, ss.334-340, 1987 (Hakemli Dergi)
- XVIII. **The Ag Co Silver Cobalt System**  
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Bulletin of Alloy Phase Diagrams, cilt.7, ss.259-263, 1986 (Hakemli Dergi)
- XIX. **The Ag Ru Silver Ruthenium System**  
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Bulletin of Alloy Phase Diagrams, cilt.7, ss.365-368, 1986 (Hakemli Dergi)
- XX. **The Ag Rh Silver Rhodium System**  
KARAKAYA İ., William T T.  
Bulletin of Alloy Phase Diagrams, cilt.7, ss.362-365, 1986 (Hakemli Dergi)

## **Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar**

- I. **Metallization of High Density Polyurethane Surfaces**  
Aykaç B., KARAKAYA İ., ERDOĞAN M., Öz Y.  
237th ECS Meeting, Montreal, Kanada, 10 Mayıs 2020, cilt.97, ss.1
- II. **Formation of Mo Metal Powder By Electrochemical Reduction of CaMoO<sub>4</sub> and MoS<sub>2</sub> Compounds**  
akpınar b., ERDOĞAN M., KARAKAYA İ.  
237th ECS Meeting, Montreal, Kanada, 10 Mayıs 2020
- III. **Modeling and Experimental Validation of Critical Distance and the Maximum Depth of Galvanic Corrosion-Induced Pitting on the 2024-T3 with CFRP Joint**  
Yıldırım M. A. , Erdoğan M., Karakaya İ.  
237th ECS Meeting, Montreal, Kanada, 10 Mayıs 2020
- IV. **Effects and Characterizations of Pulse Electrodeposition Parameters of Silver on Surface Roughness and Scattering Parameters of Horn Antennas**  
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