

## **Asst. Prof. GÖKÇEN AKGÜL**

### **Personal Information**

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### **Education Information**

Doctorate, Karlsruhe Institute Of Technology, Institut Für Technische Chemie-Chemische Physikalische Verfahren, Germany 2004 - 2007

Postgraduate, Akdeniz University, Fen Bilimleri Enstitüsü, Kimya, Turkey 1999 - 2001

Undergraduate, Akdeniz University, Fen Fakültesi, Kimya, Turkey 1994 - 1998

### **Foreign Languages**

German, B1 Intermediate

English, B2 Upper Intermediate

### **Certificates, Courses and Trainings**

Vocational Course, Seminar with Practice, DECHEMA Frankfurt, 2003

Vocational Course, Radioisotope course, Forschungszentrum Karlsruhe, 2003

Other, International Seminar with Practice, Universitaet Karlsruhe, 2003

### **Dissertations**

Doctorate, Kinetic investigation of the Water-Gas Shift Reaction at Hydrothermal Conditions, Universitaet Karlsruhe, Institut für Technische Chemie-Chemische Physikalische Verfahren, 2007

### **Research Areas**

Engineering and Technology

### **Academic Titles / Tasks**

Assistant Professor, Recep Tayyip Erdogan University, Mühendislik Ve Mimarlık Fakültesi, Enerji Sistemleri Mühendisliği, 2018 - Continues

Assistant Professor, Recep Tayyip Erdogan University, Mühendislik Fakültesi, Enerji Sistemleri Mühendisliği Bölümü, 2013 - 2018

## Academic and Administrative Experience

Assistant Director of the Institute, Recep Tayyip Erdogan University, Fen Bilimleri Enstitüsü, 2017 - 2020

## Courses

Yakıtlar ve Yanma, Undergraduate, 2019 - 2020  
Enerji Sistemleri Mühendisliğine Giriş, Undergraduate, 2019 - 2020  
iklim değişikliği, Undergraduate, 2017 - 2018  
Mühendislik Termodinamiği, Undergraduate, 2017 - 2018  
Proje ve Kalite yönetimi, Undergraduate, 2016 - 2017  
Elektrokimyasal çevrim ve enerji depolama, Postgraduate, 2016 - 2017  
Enerji için Bor, Postgraduate, 2016 - 2017  
yakıt pilleri, Postgraduate, 2015 - 2016  
Biyoenjerji, Postgraduate, 2015 - 2016

## Advising Theses

AKGÜL G., Biyokütle temelli karbon yarı iletken enerji depolama malzemelerinin geliştirilmesi ve diyet uygulamaları, Postgraduate, S.Sözer(Student), Continues  
Akgül G., Bor katkılı ve biyokütle temelli karbon süperkapasitör enerji depolama malzemelerinin geliştirilmesi, Postgraduate, A.Gündoğdu(Student), 2021  
Akgül G., Çay atığı biyokütlesinden türetilen biyokömürün yüksek performans karbon olarak süperkapasitör uygulamalarına uygunluğunun araştırılması, Postgraduate, T.Bolat(Student), 2020  
AKGÜL G., Çay atığı biyokütlesinden türetilen biyokömürün yüksek performans karbon olarak transistor uygulamalarına uygunluğunun araştırılması, Postgraduate, S.Nur(Student), 2019  
AKGÜL G., Biyokömür Yakıtı Kullanılan Doğrudan Karbon Yakıt Piline Modellenmesi, Postgraduate, F.Gül(Student), 2019

## Jury Memberships

Post Graduate, tez savunma, Cumhuriyet Üniversitesi, January, 2013

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

- I. **Adaptive neuro-fuzzy interference system modelling for chlorpyrifos removal with walnut shell biochar**  
Tulun Ş., Akgül G., Alver A., Çelebi H.  
Arabian Journal of Chemistry, vol.14, no.12, pp.103443, 2021 (Journal Indexed in SCI Expanded)
- II. **Supercritical conversion of wastes from wine industry: Effects of concentration, temperature and group 1A carbonates**  
Gökkaya D., Akgül G., Sağlam M., Yüksel M., Ballice L.  
Journal Of Supercritical Fluids, vol.176, no.176, pp.105319, 2021 (Journal Indexed in SCI Expanded)
- III. **Optical and electrical properties of refined carbon derived from industrial tea waste**  
Akgul G., Bicakci S. N.  
MATERIALS RESEARCH EXPRESS, vol.7, no.4, 2020 (Journal Indexed in SCI)
- IV. **Biochar-iron composites as electromagnetic interference shielding material**  
Akgul G., Demir B., Gundogdu A., TÜRK A. S. , Sozer S.  
MATERIALS RESEARCH EXPRESS, vol.7, no.1, 2020 (Journal Indexed in SCI)

- V. **Valorization of Tea-Waste Biochar for Energy Storage**  
Akgul G., Iglesias D., Ocon P., Moreno Jimenez E.  
BIOENERGY RESEARCH, vol.12, no.4, pp.1012-1020, 2019 (Journal Indexed in SCI)
- VI. **Modification of tea biochar with Mg, Fe, Mn and Al salts for efficient sorption of PO<sub>4</sub><sup>3-</sup> and Cd<sup>2+</sup> from aqueous solutions**  
Akgul G., Maden T. B. , Diaz E., Moreno Jimenez E.  
JOURNAL OF WATER REUSE AND DESALINATION, vol.9, no.1, pp.57-66, 2019 (Journal Indexed in SCI)
- VII. **Biochar modification to enhance sorption of inorganics from water**  
Sizmur T., Fresno T., Akgul G., Frost H., Moreno-Jimenez E.  
BIORESOURCE TECHNOLOGY, vol.246, pp.34-47, 2017 (Journal Indexed in SCI)
- VIII. **A biochar-modified carbon paste electrode**  
Bal Altuntas D., Akgul G., YANIK J., ANIK Ü.  
TURKISH JOURNAL OF CHEMISTRY, vol.41, no.3, pp.455-465, 2017 (Journal Indexed in SCI)
- IX. **Modification of natural zeolite with NaOH for removal of manganese in drinking water**  
ATEŞ A., Akgul G.  
POWDER TECHNOLOGY, vol.287, pp.285-291, 2016 (Journal Indexed in SCI)
- X. **Hydrothermal Liquefaction - Upgrading**  
Hornung U., Kruse A., Akgul G.  
TRANSFORMATION OF BIOMASS: THEORY TO PRACTICE, pp.175-187, 2014 (Journal Indexed in SCI)
- XI. **Supercritical Conversion of Biomass**  
Akgul G.  
TRANSFORMATION OF BIOMASS: THEORY TO PRACTICE, pp.189-202, 2014 (Journal Indexed in SCI)
- XII. **Hydrothermal gasification of Rosa Damascena residues: Gaseous and aqueous yields**  
Akgul G., GÜNGÖREN MADENOĞLU T., CENGİZ N., GÖKKAYA D., Sağlam M., Yuksel M.  
JOURNAL OF SUPERCRITICAL FLUIDS, vol.85, pp.135-142, 2014 (Journal Indexed in SCI)
- XIII. **Hydrothermal disproportionation of formaldehyde at subcritical conditions**  
Akgül G., Kruse A.  
Journal of Supercritical Fluids, vol.73, pp.43-50, 2013 (Journal Indexed in SCI)
- XIV. **Influence of salts on the subcritical water-gas shift reaction**  
Akgül G., Kruse A.  
Journal of Supercritical Fluids, vol.66, pp.207-214, 2012 (Journal Indexed in SCI)
- XV. **Viscosities, apparent molar volumes, expansivities and isentropic compressibilities of some fatty acids and their triglycerides in benzene at (20, 30, 40 and 60) degrees C**  
Akgul G., Bayram E., Ayranci E.  
JOURNAL OF SOLUTION CHEMISTRY, vol.35, no.12, pp.1655-1671, 2006 (Journal Indexed in SCI)
- XVI. **Apparent molar volumes and viscosities of lauric, palmitic, and stearic acids in 2-butanol at (20, 30, 40, and 60) degrees C**  
AYRANCI E., Akgul G.  
JOURNAL OF CHEMICAL AND ENGINEERING DATA, vol.48, no.1, pp.56-60, 2003 (Journal Indexed in SCI)

## Articles Published in Other Journals

- I. **Çay atıklarından türetilen yüksek performans karbonun transistörde iletim kanal materyali olarak uygulanması**  
Bıçakçı S. N. , AKGÜL G.  
JOURNAL OF POLYTECHNIC-POLITEKNİK DERGISI, vol.23, no.3, pp.909-914, 2020 (International Refereed University Journal)
- II. **Application of biochar derived from industrial tea waste into the fuel cell-a novel approach**  
Akgul G., Turan Z.  
PAMUKKALE UNIVERSITY JOURNAL OF ENGINEERING SCIENCES-PAMUKKALE UNIVERSITESI MUHENDISLIK

BILIMLERİ DERGİSİ, vol.26, no.1, pp.122-126, 2020 (Journal Indexed in ESCI)

III. **ATIK YAĞLARDAN BİYODİZEL ÜRETİMİNDE YENİLİKÇİBİYOKÖMÜR KATALİZÖRÜ**

AKGÜL G., Sözer S., Culfa M.

TÜBAV Bilim Dergisi, vol.10, no.4, pp.29-38, 2017 (Other Refereed National Journals)

IV. **BİYOKÖMÜR: ÜRETİMİ ve KULLANIM ALANLARI**

AKGÜL G.

Selçuk Üniversitesi Mühendislik Bilim ve Teknoloji Dergisi, vol.5, no.4, pp.485-499, 2017 (Other Refereed National Journals)

V. **Production and characterisation of biochar from tea waste and its nickel removal capacity from aqueous solutions**

AKGÜL G., ATEŞ A., Yasar G., Hatipoglu H.

Progress in Industrial Ecology, vol.11, no.2, pp.105-117, 2017 (Refereed Journals of Other Institutions)

VI. **Biyokütle Teknolojisi**

ÜÇGÜL İ., AKGÜL G.

YEKARUM e-dergi, vol.1, no.1, pp.3-11, 2010 (Other Refereed National Journals)

VII. **İklimlendirme için Güneş Enerjili Ejektörlü Soğutma Sistemi Uygulamasının Termodinamik Çevresel ve Ekonomik Analizi**

ÜÇGÜL İ., AKGÜL G.

YEKARUM e-dergi, vol.1, no.1, pp.12-23, 2010 (Other Refereed National Journals)

## Books & Book Chapters

I. **Hydrothermal Liquefaction – Upgrading**

URSEL H., ANDREA K., AKGÜL G.

in: Transformation of Biomass Theory to Practice, Andreas Hornung, Editor, Wiley, pp.175-183, 2014

II. **Supercritical Conversion of Biomass**

AKGÜL G.

in: Transformation of Biomass Theory to Practice, Andreas Hornung, Editor, Wiley, pp.189-199, 2014

## Refereed Congress / Symposium Publications in Proceedings

I. **Biomass derived carbon for electrical energy storage.**

Akgül G.

bioenergy symposium, Samsun, Turkey, 20 - 21 May 2021, pp.1

II. **Çay Atığı Biyokütlesinden Türetilen Yüksek Performans Karbonun Transistör Uygulamalarına Uygunluğunun Araştırılması**

Bıçakçı S. N. , Akgül G.

4th International Energy Engineering Congress, Gaziantep, Turkey, 24 - 25 October 2019, pp.54-55

III. **Biyokütleden Bor Katkılı Süperkapasitör Enerji Depolama Malzemelerinin Geliştirilmesi**

Gündoğdu A., Akgül G.

4th International Energy Engineering Congress, Gaziantep, Turkey, 24 - 25 October 2019

IV. **Yenilenebilir Karbonun Elektrik Devresinde Uygulanabilirliğinin Araştırılması**

Aydin İ. N. , Akgül G.

4th International Energy Engineering Congress, Gaziantep, Turkey, 24 - 25 October 2019, pp.63-64

V. **Yarı İletken Karbon Materyalin Biyokütleden Geliştirilmesi Ve Diyot Uygulamaları**

Sözer S., Akgül G.

4th International Energy Engineering Congress, Gaziantep, Turkey, 24 - 25 October 2019

VI. **Biyokömür Yakıtı Kullanılan Doğrudan Karbon Yakıt Pili Modellenmesi**

Nişancı F. G. , Akgül G., Ovalı R. V.

4th International Energy Engineering Congress, Gaziantep, Turkey, 24 - 25 October 2019

**VII. Reduced graphene oxide from industrial tea waste**

Akgül G., Bıçakçı S. N.

COST Action CA 15107 Multicomp Autumn Prague Meeting, Praha, Czech Republic, 12 - 13 September 2019

**VIII. Çay atıklarından türetilen amorf karbonun grafen benzeri materyale geliştirilmesi ve transistör uygulaması.**

Bıçakçı S. N. , Akgül G.

International Congress of Energy, Economy and Security/ENSCON'xx19-Bahar, İstanbul, Turkey, 20 - 21 March 2019

**IX. Transformation of Amorphous Carbon Derived from Tea Waste to Graphene-like Carbon**

Akgül G., Fındık S., Yüzüak E.

2nd International Symposium on Multidisciplinary Studies and Innovative Technologies (ISMSIT-18), Ankara, Turkey, 19 - 21 October 2018, pp.17-18

**X. Valorization of Industrial Tea Waste Biochar in Energy Storage as Graphitic Carbon Material**

Akgül G., Iglesias D., Ocon P., Morenojimenez E., Marchesan S.

COST Bucharest CA 15107 Fall Meeting on Multi-Functional Nano-Carbon Composite Materials, Bucuresti, Romania, 6 - 07 September 2018

**XI. Greenhouse gas CO<sub>2</sub> into lithium ion batteries**

AKGÜL G., ÇANKAYA A.

International Conference on Physical Chemistry and Functional Materials (PCFM'18), 19 - 21 June 2018

**XII. Biochar composites as novel electromagnetic interference shielding materials**

AKGÜL G., Demir B., Gündoğdu A., TÜRK A. S.

International Conference on Physical Chemistry and Functional Materials (PCFM'18), 19 - 21 June 2018

**XIII. Biochar in Fuel Cell**

AKGÜL G., TURAN Z.

8th International Advanced Technologies Symposium (IATS 17), 19 - 22 October 2017, pp.151

**XIV. A Novel Amperometric Glucose Biosensor Based in Biochar -Copper Metallic Composite**

BAL ALTUNTAŞ D., AKGÜL G.

13th International Nanoscience and Nanotechnology Conference, 22 - 25 October 2017

**XV. A novel amperometric glucose biosensor based on biochar -copper metallic composite**

BAL ALTUNTAŞ D., AKGÜL G.

13th Nanoscience and Nanotechnology Conference, İstanbul, Turkey, 22 - 25 October 2017, pp.366

**XVI. Biodiesel production from waste cooking oil using biochar as catalysts**

AKGÜL G., Sözer s., MUSTAFA c., YANIK J., Diaz e., MORENOJİMENEZ E.

2nd INTERNATIONAL CONFERENCE ON CIVIL AND ENVIRONMENTAL ENGINEERING, 8 - 10 May 2017, pp.1283

**XVII. Biochar Metallic Nanocomposite Based Glassy Carbon Paste Electrode Glucose Biosensors**

BAL ALTUNTAŞ D., AKGÜL G., MORENO JİMENEZ E., Diaz E.

3rd International Congress on Biosensors, 5 - 07 October 2016

**XVIII. Çay Atıklarından Üretilen Biyokömürlerin Organik Ve İnorganik Kirleticileri Uzaklaştırma Kapasitesi**

AKGÜL G., BAL ALTUNTAŞ D., Bolat Maden T., YANIK J.

Ulusal Biyoyakıtlar Sempozyumu, Turkey, 27 - 30 September 2016

**XIX. Biochar Modified Carbon Paste Electrode**

BAL ALTUNTAŞ D., AKGÜL G., YANIK J., ANIK Ü.

12th Nanoscience and Nanotechnology Conference, 3 - 05 June 2016

**XX. PRODUCTION and CHARACTERIZATION of BIOCHAR from TEA WASTE and 1 IT s NICKEL REMOVAL CAPACITY FROM AQUEOUS SOLUTIONS**

AKGÜL G., ATEŞ A., Yaşar G., HATİPOĞLU H.

ICREGA16, 8 - 10 February 2016

**XXI. Biochar from industrial tea wastes**

AKGÜL G.

3rd European Biochar Summer School, 1 - 06 March 2015

- XXII. **Modification of natural zeolite by treatment with NaOH for manganese removal in drinking water**  
ATEŞ A., AKGÜL G., UĞUR SAVAŞ T.  
2nd International Symposium on Environment and Morality, 24 - 26 October 2014
- XXIII. **Characterization of Fruit Juice Processing Wastes As Biosorbent For Heavy Metal Removal**  
AKGÜL G., TEKİNAY T.  
European Workshop on Renewable Energy Systems, 17 - 19 September 2012
- XXIV. **Isparta Gül Yağı Üretim Atıklarının Hidrotermal Gazlaştırılması**  
AKGÜL G., SAGLAM M., YUKSEL M., CENGİZ N., GÖKKAYA D., GÜNGÖREN MADENOĞLU T., ÜÇGÜL İ.  
Türkiye Mimarlar Mühendisler Odası Birliği (TMMOB), Kimya Mühendisleri Odası Bursa Şubesi, Yenilenebilir Enerji Kaynağı, Biyokütle Çalıştay ve Sergisi, Turkey, 7 - 08 October 2011
- XXV. **New results on hydrothermal reactions of C1 compounds 2 Disproportionation reactions of formaldehyde**  
AKGÜL G., KRUSE A., Olzmann M.  
6th Chemical Engineering Conference for Collaborative Research in Eastern Mediterranean Countries (EMCC-6), 7 - 12 March 2010
- XXVI. **The water gas shift reaction in the presence of NaHCO<sub>3</sub> and KHCO<sub>3</sub> in sub critical water**  
AKGÜL G., KRUSE A., Olzmann M.  
22. Ulusal Kimya Kongresi, Turkey, 6 - 10 October 2008
- XXVII. **The water gas shift reaction in sub critical water Reaction kinetics and modelling**  
AKGÜL G., Kruse A., Olzmann M.  
Proceedings European congress of Chemical Engineering (ECCE-6), 16 - 20 September 2007
- XXVIII. **The water gas shift reaction at hydrothermal conditions**  
AKGÜL G., KRUSE A., OLAMANN M.  
15th European Biomass Conference Exhibition, 7 - 11 May 2007
- XXIX. **Die Hydrothermale Wasser Gas Shift Reaktion**  
AKGÜL G., Kruse A., Olzmann M.  
FA-Sitzungen Hochdruckverfahrenstechnik und Mehrphasenströmungen, 7 - 08 March 2007
- XXX. **Untersuchungen zu Reaktionen von Wasserstoff Atomen mit Allen Internationales Seminar für Forschung und Lehre in Chemieingenieurwesen Technischer und Physikalischer Chemie**  
AKGÜL G., Bentz T., Giri B., Olzmann M., Striebel F., Unterreiner A.  
39. Internationales Seminar Wissenschaftliche Abschlussberichte, 19 July 2004, vol.39
- XXXI. **Laurik Palmitik ve Stearik asidin 2 Butanol içerisindeki viskozite ve görünür molar hacimlerinin incelenmesi**  
AKGÜL G., AYRANCI E.  
XV. Ulusal Kimya Kongresi, Turkey, 4 - 07 September 2001

## Supported Projects

AKGÜL G., Gündoğdu A., Project Supported by Higher Education Institutions, Bor katkılı ve biyokütle temelli karbon süperkapasitör enerji depolama malzemelerinin geliştirilmesi, 2019 - 2021

Akgül G., Project Supported by Other Official Institutions, Bor katkılı süperkapasitör enerji depolama malzemelerinin geliştirilmesi, 2019 - 2020

AKGÜL G., Bıçakçı S. N., BIÇAKÇI S., Project Supported by Higher Education Institutions, Çay atığı biyokütlesinden türetilen biyokömürün yüksek performans karbon olarak transistor uygulamalarına uygunluğunun araştırılması, 2018 - 2019

AKGÜL G., TUBITAK Project, Yenilenebilir Karbonun Elektrik Devresinde Uygulanabilirliğinin Araştırılması, 2018 - 2019

AKGÜL G., TUBITAK Project, CO<sub>2</sub> Kullanarak Elektrolitik Karbonun Lityum Depolama Performansının Araştırılması, 2017 - 2018

AKGÜL G., TUBITAK Project, Amorf Karbonize Materyal Olan Biyokömürden Grafen Oksit Ve Grafen Türetilmesinin Araştırılması, 2017 - 2018

AKGÜL G., TUBITAK Project, Karbon Kompozitleri İle Elektromanyetik Koruma, 2017 - 2018  
AKGÜL G., TURAN Z., DEMİR B., Project Supported by Higher Education Institutions, YAKIT HÜCRELERİNDE BİYOKÖMÜR DESTEKLİ İNCE FİLM VERİMLİLİĞİNİN ARAŞTIRILMASI, 2017 - 2018  
AKGÜL G., Other Supported Projects, Applications of modified biochars for agro-environmental management, 2017 - 2018  
AKGÜL G., CULFA M., SÖZER S., Project Supported by Higher Education Institutions, BİYODİZEL ÜRETİMİNDE BİYOKÖMÜRLERİN KATALİZÖR OLARAK KULLANIMININ ARAŞTIRILMASI, 2016 - 2017  
ÇINAR S., ERENLER S., PIRASA N., UZUN N., ALTUN E., KÜÇÜK M., AKGÜL G., Project Supported by Higher Education Institutions, Fen Bilgisi Öğretmen Adayları STEM İle Buluşuyor, 2015 - 2017  
AKGÜL G., BAL ALTUNTAŞ D., Project Supported by Higher Education Institutions, Çay atıklarından üretilen biyokömürlerin organik-inorganik kirleticileri adsorpsiyon kapasitesinin belirlenmesi, 2014 - 2017  
BAL ALTUNTAŞ D., AKGÜL G., İSLAMOĞLU F., Erdoğan N., YOLCU M., Project Supported by Higher Education Institutions, Mikro Büyüklükte Potansiyometrik Glikoz Biyosensör Geliştirilmesi, 2015 - 2016

## **Memberships / Tasks in Scientific Organizations**

international biochar organization, Member, 2015 - 2016

## **Scientific Refereeing**

BIOMASS & BIOENERGY, Journal Indexed in SCI-E, June 2020  
CHEMOSPHERE, Journal Indexed in SCI-E, January 2018  
International Journal of Hydrogen Energy, SCI Journal, December 2017  
Energy conversion and management, SCI Journal, October 2017  
Project Supported by Higher Education Institutions, February 2017  
Project Supported by Higher Education Institutions, March 2014

## **Scientific Consultations**

Bilim Sanayi ve Teknoloji Bakanlığı, Other, Recep Tayyip Erdogan University, Mühendislik Fakültesi, Enerji Sistemleri Mühendisliği Bölümü, Turkey, 2015 - 2015

## **Edit Congress and Symposium Activities**

COST Action CA 15107 Fall Meeting on Multi-Functional Nano-Carbon Composite Materials, Attendee, Praha, Czech Republic, 2019  
COST Action CA 15107 Fall Meeting on Multi-Functional Nano-Carbon Composite Materials, Attendee, Bucuresti, Romania, 2018  
3rd biochar summer school, Attendee, Sevilla, Spain, 2015

## **Citations**

Total Citations (WOS):342  
h-index (WOS):8