

## Dr. Öğr. Üyesi MEHMET KARAKAYA

### Kişisel Bilgiler

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Publons / Web Of Science ResearcherID: AAE-1622-2019

ScopusID: 55953559600

Yoksis Araştırmacı ID: 258979

### Eğitim Bilgileri

Doktora, Clemson University, Fizik, Amerika Birleşik Devletleri 2011 - 2015

Lisans, Selçuk Üniversitesi, Fen-Edebiyat Fakültesi, Fizik Bölümü, Türkiye 2000 - 2004

### Yabancı Diller

İngilizce, C1 İleri

### Sertifika, Kurs ve Eğitimler

Mesleki Eğitim, Eğitimcilerin Eğitimi Sertifika Programı, Gazi University, 2023

### Yaptığı Tezler

Doktora, Scalable synthesis and energy applications of defect engineered nano materials, Clemson University, Fizik, 2015

### Araştırma Alanları

Temel Bilimler, Mühendislik ve Teknoloji

### Akademik Unvanlar / Görevler

Dr. Öğr. Üyesi, Gazi Üniversitesi, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2017 - Devam Ediyor

Araştırma Görevlisi Dr., Gazi Üniversitesi, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2016 - 2017

### Akademik İdari Deneyim

Bölüm Başkan Yardımcısı, Gazi Üniversitesi, 2020 - 2021

## Verdiği Dersler

Analog Electronics I, Lisans, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021  
Optoelectronics, Lisans, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019  
Bilimsel Araştırma Yöntemleri ve Etik, Yüksek Lisans, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021  
Analog Electronic II, Lisans, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2020 - 2021, 2019 - 2020  
Communication Electronics, Lisans, 2023 - 2024, 2022 - 2023, 2020 - 2021, 2019 - 2020

## Yönetilen Tezler

Karakaya M., Yürüyen dalga tüpleri için ayarlanabilir pozitif ve negatif gerilimli geniş bant ızgara modülatör tasarımı, Yüksek Lisans, N.ŞAHİNDOKUYUCU(Öğrenci), 2022  
Karakaya M., İskender İ., SENTETİK AÇIKLIKLI RADAR UYDULARI İÇİN YENİ BİR İNDİRİCİ VE YÜKSELTİCİ TİPTE GÜÇ ÇEVİRGEÇİNİN TASARIMI VE GERÇEKLEŞTİRİLMESİ, Doktora, İ.GENCER(Öğrenci), 2021  
Karakaya M., İskender İ., İki farklı dağıtım transformatörün sonlu elemanlar yöntemi ile manyetik alan ve termal analizi, Yüksek Lisans, H.AMALIA(Öğrenci), 2021  
TAPLAMACIOĞLU M. C., KARAKAYA M., Yenilenebilir ve nükleer enerji santrallerinin frekans kontrolüne etkisinin çok bölgesel model üzerinde incelenmesi, Yüksek Lisans, M.FURKAN(Öğrenci), 2019

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

- I. **Improved transport properties of MgB<sub>2</sub> superconducting round wires via minute addition of gold nanoparticles**  
ÜLGEN A. T., KARABOĞA F., KARAKAYA M., Podila R., Rao A. M., BELENLİ İ.  
CERAMICS INTERNATIONAL, cilt.45, sa.1, ss.1031-1036, 2019 (SCI-Expanded)
- II. **Optimizing thermal conduction in bulk polycrystalline SrTiO<sub>3</sub>- ceramics via oxygen non-stoichiometry**  
Dehkordi A. M., Bhattacharya S., Darroudi T., KARAKAYA M., Kucera C., Ballato J., Adebisi R., Gladden J. R., Podila R., Rao A. M., et al.  
MRS COMMUNICATIONS, cilt.8, sa.4, ss.1470-1476, 2018 (SCI-Expanded)
- III. **Polymer-Derived Silicon Oxycarbide Ceramics as Promising Next-Generation Sustainable Thermoelectrics**  
Kousaalya A. B., Zeng X., KARAKAYA M., Trit T., Pilla S., Rao A. M.  
ACS APPLIED MATERIALS & INTERFACES, cilt.10, sa.3, ss.2236-2241, 2018 (SCI-Expanded)
- IV. **A micro-Raman study of exfoliated few-layered n-type Bi-2 Te<sub>2.7</sub>Se<sub>0.3</sub>**  
Liu F., Hu L., KARAKAYA M., Puneet P., Rao R., Podila R., Bhattacharya S., Rao A. M.  
SCIENTIFIC REPORTS, cilt.7, 2017 (SCI-Expanded)
- V. **Impact absorption properties of carbon fiber reinforced bucky sponges**  
Thevamaran R., Saini D., KARAKAYA M., Zhu J., Podila R., Rao A. M., Daraio C.  
NANOTECHNOLOGY, cilt.28, sa.18, 2017 (SCI-Expanded)
- VI. **Defect-Engineered Graphene for High-Energy- and High-Power-Density Supercapacitor Devices**  
Zhu J., Childress A. S., KARAKAYA M., Dandeliya S., Srivastava A., Lin Y., Rao A. M., Podila R.  
ADVANCED MATERIALS, cilt.28, sa.33, ss.7185-7193, 2016 (SCI-Expanded)
- VII. **A facile and scalable approach to fabricating free-standing polymer-Carbon nanotube composite electrodes**  
Arcila-Velez M. R., Emmett R. K., KARAKAYA M., Podila R., Diaz-Orellana K. P., Rao A. M., Roberts M. E.  
SYNTHETIC METALS, cilt.215, ss.35-40, 2016 (SCI-Expanded)
- VIII. **Tuning the electronic structure of graphene through nitrogen doping: experiment and theory**  
Ketabi N., de Boer T., KARAKAYA M., Zhu J., Podila R., Rao A. M., Kurmaev E. Z., Moewes A.

RSC ADVANCES, cilt.6, sa.61, ss.56721-56727, 2016 (SCI-Expanded)

- IX. **Enhancing Thermoelectric Properties of Si<sub>80</sub>Ge<sub>20</sub> Alloys Utilizing the Decomposition of NaBH<sub>4</sub> in the Spark Plasma Sintering Process**  
Lahwal A., Zeng X., Bhattacharya S., Zhou M., Hitchcock D., KARAKAYA M., He J., Rao A. M., Tritt T. M.  
ENERGIES, cilt.8, sa.10, ss.10958-10970, 2015 (SCI-Expanded)
- X. **Self-Assembled Recyclable Hierarchical Bucky Aerogels**  
KARAKAYA M., Saini D., Podila R., Skove M. J., Rao A. M., Thevamaran R., Daraio C.  
ADVANCED ENGINEERING MATERIALS, cilt.17, sa.7, ss.990-994, 2015 (SCI-Expanded)
- XI. **Modulation of the Electrostatic and Quantum Capacitances of Few Layered Graphenes through Plasma Processing**  
Narayanan R., Yamada H., KARAKAYA M., Podila R., Rao A. M., Bandaru P. R.  
NANO LETTERS, cilt.15, sa.5, ss.3067-3072, 2015 (SCI-Expanded)
- XII. **Dopant-configuration controlled carrier scattering in graphene**  
Anand B., KARAKAYA M., Prakash G., Sai S. S. S., Philip R., Ayala P., Srivastava A., Sood A. K., Rao A. M., Podila R.  
RSC ADVANCES, cilt.5, sa.73, ss.59556-59563, 2015 (SCI-Expanded)
- XIII. **Influence of carbon nanomaterial defects on the formation of protein corona**  
Sengupta B., Gregory W. E., Zhu J., Dasetty S., KARAKAYA M., Brown J. M., Rao A. M., Barrows J. K., Sarupria S., Podila R.  
RSC ADVANCES, cilt.5, sa.100, ss.82395-82402, 2015 (SCI-Expanded)
- XIV. **Anomalous impact and strain responses in helical carbon nanotube foams**  
Thevamaran R., KARAKAYA M., Meshot E. R., Fischer A., Podila R., Rao A. M., Daraio C.  
RSC ADVANCES, cilt.5, sa.37, ss.29306-29311, 2015 (SCI-Expanded)
- XV. **Roll-to-roll production of spray coated N-doped carbon nanotube electrodes for supercapacitors**  
KARAKAYA M., Zhu J., Raghavendra A. J., Podila R., Parler S. G., Kaplan J. P., Rao A. M.  
APPLIED PHYSICS LETTERS, cilt.105, sa.26, 2014 (SCI-Expanded)
- XVI. **Can Faradaic Processes in Residual Iron Catalyst Help Overcome Intrinsic EDLC Limits of Carbon Nanotubes?**  
Emmett R. K., KARAKAYA M., Podila R., Arcila-Velez M. R., Zhu J., Rao A. M., Roberts M. E.  
JOURNAL OF PHYSICAL CHEMISTRY C, cilt.118, sa.46, ss.26498-26503, 2014 (SCI-Expanded)
- XVII. **Roll-to-roll synthesis of vertically aligned carbon nanotube electrodes for electrical double layer capacitors**  
Arcila-Velez M. R., Zhu J., Childress A., KARAKAYA M., Podila R., Rao A. M., Roberts M. E.  
NANO ENERGY, cilt.8, ss.9-16, 2014 (SCI-Expanded)
- XVIII. **Preferential Scattering by Interfacial Charged Defects for Enhanced Thermoelectric Performance in Few-layered n-type Bi<sub>2</sub>Te<sub>3</sub>**  
Puneet P., Podila R., KARAKAYA M., Zhu S., He J., Tritt T. M., Dresselhaus M. S., Rao A. M.  
SCIENTIFIC REPORTS, cilt.3, 2013 (SCI-Expanded)

## **Diğer Dergilerde Yayınlanan Makaleler**

- I. **PI CONTROL OF A NOVEL POWER CONVERTER BY USING HEURISTIC OPTIMIZATION**  
Tulay G., KARAKAYA M., Iskender I.  
International Journal on Technical and Physical Problems of Engineering, cilt.13, sa.4, ss.219-224, 2021 (Scopus)
- II. **Performance analysis of a distribution transformer using ansys maxwell**  
Ariani H., Iskender I., KARAKAYA M.  
International Journal on Technical and Physical Problems of Engineering, cilt.12, sa.4, ss.57-62, 2020 (Scopus)

## **Kitap & Kitap Bölümleri**

## I. Carbon Nanotube Materials to Realize High-Performance Supercapacitors

Childress A., Zhu J., Saini D., KARAKAYA M., Podila R., Rao A. M.

Nanotechnology for Energy Sustainability, Prof. Baldev Raj, Prof. Marcel Van de Voorde and Dr. Yashwant Mahajan, Editör, Wiley-VCH Verlag GmbH Co. KGaA, ss.377-390, 2017

## Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

- I. **YÜRÜYEN DALGA TÜPLERİ İÇİN AYARLANABİLİR POZİTİF VE NEGATİF GERİLİMLİ GENİŞ BANT IZGARA MODÜLATÖR TASARIMI**  
Şahindokuyucu N., Karakaya M.  
5. Uluslararası Mühendislik Bilimleri ve Multidisipliner Yaklaşımlar Kongresi, İstanbul, Türkiye, 3 Kasım - 05 Aralık 2022, ss.963
- II. **MODELING AND PERFORMANCE ANALYSIS OF 250 KVA DISTRIBUTION TRANSFORMER USING ANSYS MAXWELL**  
Ariani H. A., İSKENDER İ., KARAKAYA M.  
The 16th International Conference on "Technical and Physical Problems of Engineering", İstanbul, Türkiye, 12 Ekim 2020, ss.1-7
- III. **Modelling of automatic generation control for multi-area integrated power system equipment including renewable energy systems**  
YILMAZ M. F., GÖZDE H., KARAKAYA M., TAPLAMACIOĞLU M. C.  
Renewable Energy Sources - Research and Business (RESRB) 2019 Conference, 8 - 09 Temmuz 2019
- IV. **Raman spectroscopy of exfoliated few layered n type Bi<sub>2</sub>Te<sub>3</sub>**  
LIU F., KARAKAYA M., PUNEET P., PODILA R., BHATTACHARYA S., RAO A.  
American Physical Society (APS) March Meeting, BALTIMORE, Amerika Birleşik Devletleri, 14 - 18 Mart 2016
- V. **Biomolecular interactions of emerging two dimensional materials with aromatic amino acids**  
MALLINENI S. S. K., KARAKAYA M., PODILA R., RAO A.  
American Physical Society (APS) March Meeting, BALTIMORE, Amerika Birleşik Devletleri, 14 - 18 Mart 2016
- VI. **Defect induced multiphoton absorption and photoluminescence in BN for bio imaging**  
DONG Y., KARAKAYA M., PODILA R., RAO A.  
American Physical Society (APS) March Meeting, BALTIMORE, Amerika Birleşik Devletleri, 14 - 18 Mart 2016
- VII. **One pot electrochemical synthesis of polymer CNT metal nanoparticles for fuel cell applications**  
VENTRAPRAGADA L., ZHU J., KARAKAYA M., PODILA R., RAO A.  
American Physical Society (APS) March Meeting, BALTIMORE, Amerika Birleşik Devletleri, 14 - 18 Mart 2016
- VIII. **Study of quantum capacitance in N doped few layer graphene**  
KARAKAYA M., ZHU J., PODILA R., SRIVASTAVA A., RAO A.  
American Physical Society (APS) March Meeting, 2 - 06 Mart 2015
- IX. **Origin of the 2450 cm<sup>-1</sup> peak G band in the Raman spectrum of graphene**  
PODILA R., RAO R., KARAKAYA M., ZHU J., RAO A.  
American Physical Society (APS) March Meeting, San-Antonio, Kuzey Mariana Adaları, 2 - 06 Mart 2015
- X. **Roll to Roll Production of Spray Coated N doped Carbon Nanotube Electrodes for Supercapacitors**  
KARAKAYA M., ZHU J., RAGHAVENDRA A., PODILA R., PARLER S., KAPLAN J., RAO A.  
American Physical Society (APS) March Meeting, San-Antonio, Kuzey Mariana Adaları, 2 - 06 Mart 2015
- XI. **Roll-to-roll synthesis of vertically aligned carbon nanotube electrodes for electrical double layer capacitors**  
Arcila-Velez M. R., Zhu J., Childress A., KARAKAYA M., Podila R., Rao A. M., Roberts M. E.  
248th National Meeting of the American-Chemical-Society (ACS), San-Francisco, Kostarika, 10 - 14 Ağustos 2014, cilt.248
- XII. **Fe catalyzed carbon nanotubes for high energy density carbon based supercapacitors**  
EMMETT R., KARAKAYA M., ROBERTS M., Arcilla Velez M., PODILA R., RAO A.  
American Physical Society (APS) March Meeting, DENVER, Amerika Birleşik Devletleri, 3 - 07 Mart 2014

- XIII. **Impact response of helically coiled carbon nanotube foams**  
DARAIO C., KARAKAYA M., RAMATHASAN T., RAO A.  
American Physical Society (APS) March Meeting, DENVER, Amerika Birleşik Devletleri, 3 - 07 Mart 2014
- XIV. **Static and dynamic response of bucky sponges**  
RAMATHASAN T., KARAKAYA M., PODILA R., DARAIO C., RAO A.  
American Physical Society (APS) March Meeting, DENVER, Amerika Birleşik Devletleri, 3 - 07 Mart 2014
- XV. **Electrochemical characterization of chemical vapor deposition grown few layer graphene**  
NARAYAN R., KARAKAYA M., PODILA R., BANDARU P., RAO A.  
American Physical Society (APS) March Meeting, DENVER, 3 - 07 Mart 2014
- XVI. **Biopolymer nanocarbon composite electrodes for use as high energy high power density electrodes**  
KARAKAYA M., ROBERTS M., ARCILLA VELEZ M., ZHU J., PODILA R., RAO A.  
American Physical Society (APS) March Meeting, DENVER, Amerika Birleşik Devletleri, 3 - 07 Mart 2014
- XVII. **Roll to Roll production of carbon nanotubes based supercapacitors**  
ZHU J., CHILDRESS A., KARAKAYA M., ROBERTS M., PODILA R., RAO A.  
American Physical Society (APS) March Meeting, 3 - 07 Mart 2014
- XVIII. **Recyclable Buckysponges for De emulsification and Oil spill cleaning**  
KARAKAYA M., Saini D., Podila R., Rao A.  
American Physical Society (APS) March Meeting, 18 - 22 Mart 2013
- XIX. **Redox electrodes comprised of polymer modified carbon nanomaterials**  
Roberts M., Emmett R., KARAKAYA M., Podila R., Rao A.  
American Physical Society (APS), 18 - 22 Mart 2013
- XX. **Thermoelectric performance of chemically exfoliated n Bi<sub>2</sub>Te<sub>3</sub>**  
Puneet P., KARAKAYA M., PODILA R., ZHU S., HE J., TRITT T., SKOVE M., RAO A.  
American Physical Society (APS) March Meeting, BALTIMORE, Amerika Birleşik Devletleri, 18 - 22 Mart 2013
- XXI. **Electron diffraction studies on CVD grown bi layered graphene**  
Lingam K., KARAKAYA M., Podila R., Quin H., Rao A.  
American Physical Society (APS) March Meeting, Baltimore, Amerika Birleşik Devletleri, 18 - 22 Mart 2013

## Metrikler

Yayın: 42

Atf (WoS): 643

Atf (Scopus): 681

H-İndeks (WoS): 12

H-İndeks (Scopus): 12

## Burslar

YLSY, Milli Eğitim Bakanlığı, 2008 - 2015