



Kişisel Bilgiler

E-posta: erdem.talha@agu.edu.tr

Web: <https://avesis.agu.edu.tr/erdem.talha>

Uluslararası Araştırmacı ID'leri

ScholarID: H_J1YXAAAAAJ

ORCID: 0000-0003-3905-376X

Publons / Web Of Science ResearcherID: A-1323-2012

ScopusID: 35320823900

Yoksis Araştırmacı ID: 302533



Biyografi

Dr. Talha Erdem received his BS, MS, and PhD degrees all in Electrical and Electronics Engineering from Bilkent University in 2009, 2011, and 2016, respectively. During his MS and PhD he worked on the design and optimization of high-quality light-emitting diodes. After his PhD he was awarded the Newton International Fellowship by the Royal Society and moved to the University of Cambridge as a Newton International Fellow. At Cambridge, he worked on the smart self-assembly of nanomaterials for photonic applications. In April 2019 he moved to Abdullah Gül University as an Assistant Professor and established the Smart Nanophotonics Research Group. His current research interests are the design of stable nano-emitters, DNA-driven self-assembly of colloidal nanoparticles, and their photonic applications.

Araştırma Alanları

Dielektrik Malzeme ve Aygıtlar , Optik Malzeme ve Aygıtlar , Optoelektronik Malzeme ve Aygıtlar , Yarı İletken Malzeme ve Aygıtlar , Mühendislik ve Teknoloji

Akademik Unvanlar / Görevler

Dr.Öğr.Üyesi, Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2019 - Devam Ediyor

Verdiği Dersler

Nano- ve Mikroboyut Sistem Tasarımı Kapsülü, Lisans, 2022 - 2023

Sensör Sistemleri Tasarımı Kapsülü, Lisans, 2022 - 2023

AGU Ways, Lisans, 2022 - 2023

Nanofotonik, Yüksek Lisans, 2021 - 2022

SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler

- I. Effects of silver nanowires and their surface modification on electromagnetic interference, transport and mechanical properties of an aerospace grade epoxy

- Özkutlu Demirel M., Öztürkmen M. B., SAVAŞ M., MUTLUGÜN E., ERDEM T., Öz Y.
Journal of Composite Materials, 2024 (SCI-Expanded)
- II. Numerical analysis and experimental verification of optical scattering from microplastics
Genç S., Icoz K., Erdem T.
ROYAL SOCIETY OPEN SCIENCE, cilt.10, sa.8, ss.1-11, 2023 (SCI-Expanded)
- III. Use of Confocal Microscopy to Monitor Structural Transformations in Nanopillars Based on DNA and CdSe/CdZnSe/ZnS Quantum Dots
Motevich I., ERDEM T., Akrema A., Maskevich S., Strekal N.
Journal of Applied Spectroscopy, cilt.90, sa.3, ss.576-581, 2023 (SCI-Expanded)
- IV. Toward sustainable optoelectronics: solution-processed quantum dot photodetector fabrication using a surgical blade
SAVAŞ M., Yazlcl A. F., BİÇER A., MUTLUGÜN E., ERDEM T.
Optical Engineering, cilt.62, sa.2, 2023 (SCI-Expanded)
- V. Magnetically controlled anisotropic light emission of DNA-functionalized supraparticles
ERDEM T., Zupkauskas M., O'Neill T., Cassagli A., Xu P., ALTINTAS Y., MUTLUGÜN E., Eiser E.
MRS BULLETIN, cilt.47, sa.11, ss.1084-1091, 2022 (SCI-Expanded)
- VI. Color Enrichment Solids of Spectrally Pure Colloidal Quantum Wells for Wide Color Span in Displays
ERDEM T., SORAN ERDEM Z., Isik F., Shabani F., YAZICI A. F., MUTLUGÜN E., Gaponik N., DEMİR H. V.
ADVANCED OPTICAL MATERIALS, cilt.10, sa.14, 2022 (SCI-Expanded)
- VII. Transparent Colloidal Crystals With Structural Colours
Erdem T., O'Neill T., Zupkauskas M., Caciagli A., Xu P., Lan Y., Boesecke P., Eiser E.
FRONTIERS IN PHYSICS, cilt.10, 2022 (SCI-Expanded)
- VIII. Optical detection of microplastics in water
Iri A. H., Shahrah M. H. A., Ali A. M., Qadri S. A., ERDEM T., ÖZDÜR İ. T., İÇÖZ K.
ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH, cilt.28, sa.45, ss.63860-63866, 2021 (SCI-Expanded)
- IX. Tuning optical properties of self-assembled nanoparticle network with external optical excitation
Senel Z., İÇÖZ K., ERDEM T.
JOURNAL OF APPLIED PHYSICS, cilt.129, sa.15, 2021 (SCI-Expanded)
- X. Osmotic-Pressure-Induced Nematic Ordering in Suspensions of Laponite and Carboxy Methyl Cellulose
Xu P., YAZICI A. F., ERDEM T., Lekkerkerker H. N. W., MUTLUGÜN E., Eiser E.
JOURNAL OF PHYSICAL CHEMISTRY B, cilt.124, sa.42, ss.9475-9481, 2020 (SCI-Expanded)
- XI. A simple approach to prepare self-assembled, nacre-inspired clay/polymer nanocomposites
Xu P., Erdem T., Eiser E.
SOFT MATTER, cilt.16, sa.23, ss.5497-5505, 2020 (SCI-Expanded)
- XII. Transparent Films Made of Highly Scattering Particles
Erdem T., Yang L., Xu P., ALTINTAS Y., O'Neil T., Caciagli A., Ducati C., MUTLUGÜN E., Scherman O. A., Eiser E.
LANGMUIR, cilt.36, sa.4, ss.911-918, 2020 (SCI-Expanded)
- XIII. Multiplexed patterning of cesium lead halide perovskite nanocrystals by additive jet printing for efficient white light generation
ALTINTAS Y., TÖRUN İ., YAZICI A. F., Beskazak E., ERDEM T., ÖNSES M. S., MUTLUGÜN E.
CHEMICAL ENGINEERING JOURNAL, cilt.380, 2020 (SCI-Expanded)
- XIV. Ultrathin Highly Luminescent Two-Monolayer Colloidal CdSe Nanoplatelets
Delikanli S., Yu G., Yeltik A., Bose S., ERDEM T., Yu J., Erdem O., Sharma M., Sharma V. K., Quliyeva U., et al.
ADVANCED FUNCTIONAL MATERIALS, cilt.29, sa.35, 2019 (SCI-Expanded)
- XV. Brightly Luminescent Cu-Zn-In-S/ZnS Core/Shell Quantum Dots in Salt Matrices
Lox J. F., Eichler F., Erdem T., Adam M., Gaponik N., Demir H. V., Lesnyak V., Eychmüller A.
Zeitschrift fur Physikalische Chemie, cilt.233, sa.1, ss.23-40, 2019 (SCI-Expanded)
- XVI. Color-Enrichment Semiconductor Nanocrystals for Biorhythm-Friendly Backlighting
ERDEM T., Demir H. V.
ZEITSCHRIFT FUR PHYSIKALISCHE CHEMIE-INTERNATIONAL JOURNAL OF RESEARCH IN PHYSICAL CHEMISTRY

- & CHEMICAL PHYSICS, cilt.232, ss.1457-1468, 2018 (SCI-Expanded)
- XVII. **Highly Luminescent CB[7]-Based Conjugated Polyrotaxanes Embedded into Crystalline Matrices**
 Erdem T., Idris M., Demir H. V., Tuncel D.
Macromolecular Materials and Engineering, cilt.302, sa.11, 2017 (SCI-Expanded)
- XVIII. **Near-Unity Emitting Copper-Doped Colloidal Semiconductor Quantum Wells for Luminescent Solar Concentrators**
 Sharma M., Gungor K., Yeltik A., Olutas M., Guzelturk B., Kelestemur Y., ERDEM T., Delikanli S., McBride J. R., Demir H. V.
ADVANCED MATERIALS, cilt.29, sa.30, 2017 (SCI-Expanded)
- XIX. **CdSe/CdSe_{1-x}Tex Core/Crown Heteronanoplatelets: Tuning the Excitonic Properties without Changing the Thickness**
 Kelestemur Y., Guzelturk B., Erdem O., Olutas M., Erdem T., Usanmaz C. F., Gungor K., Demir H. V.
JOURNAL OF PHYSICAL CHEMISTRY C, cilt.121, sa.8, ss.4650-4658, 2017 (SCI-Expanded)
- XX. **Colloidal Nanocrystals Embedded in Macrocrystals: Methods and Applications**
 Adam M., Gaponik N., Eychmueller A., ERDEM T., Soran-Erdem Z., Demir H. V.
JOURNAL OF PHYSICAL CHEMISTRY LETTERS, cilt.7, sa.20, ss.4117-4123, 2016 (SCI-Expanded)
- XXI. **High-Stability, High-Efficiency Organic Monoliths Made of Oligomer Nanoparticles Wrapped in Organic Matrix**
 Soran-Erdem Z., ERDEM T., Gungor K., Pennakalathil J., Tuncel D., Demir H. V.
ACS NANO, cilt.10, sa.5, ss.5333-5339, 2016 (SCI-Expanded)
- XXII. **Colloidal nanocrystals for quality lighting and displays: milestones and recent developments**
 ERDEM T., Demir H. V.
NANOPHOTONICS, cilt.5, sa.1, ss.74-95, 2016 (SCI-Expanded)
- XXIII. **Excitonic improvement of colloidal nanocrystals in salt powder matrix for quality lighting and color enrichment**
 ERDEM T., Soran-Erdem Z., Kelestemur Y., Gaponik N., Demir H. V.
OPTICS EXPRESS, cilt.24, sa.2, 2016 (SCI-Expanded)
- XXIV. **Implementation of High-Quality Warm-White Light-Emitting Diodes by a Model-Experimental Feedback Approach Using Quantum Dot-Salt Mixed Crystals**
 Adam M., ERDEM T., Stachowski G. M., Soran-Erdem Z., Lox J. F. L., Bauer C., Poppe J., Demir L. V., Gaponik N., Eychmueller A.
ACS APPLIED MATERIALS & INTERFACES, cilt.7, sa.41, ss.23364-23371, 2015 (SCI-Expanded)
- XXV. **Continuously Tunable Emission in Inverted Type-I CdS/CdSe Core/Crown Semiconductor Nanoplatelets**
 Delikanli S., Guzelturk B., Hernandez-Martinez P. L., Erdem T., Kelestemur Y., Olutas M., Akgul M. Z., Demir H. V.
ADVANCED FUNCTIONAL MATERIALS, cilt.25, sa.27, ss.4282-4289, 2015 (SCI-Expanded)
- XXVI. **Macrocrystals of Colloidal Quantum Dots in Anthracene: Exciton Transfer and Polarized Emission**
 Soran-Erdem Z., ERDEM T., Hernandez-Martinez P. L., Akgul M. Z., Gaponik N., Demir H. V.
JOURNAL OF PHYSICAL CHEMISTRY LETTERS, cilt.6, sa.9, ss.1767-1772, 2015 (SCI-Expanded)
- XXVII. **Sweet plasmonics: Sucrose macrocrystals of metal nanoparticles**
 ERDEM T., Soran-Erdem Z., Hernandez-Martinez P. L., Sharma V. K., Akcali H., Akcali I., Gaponik N., Eychmueller A., Demir H. V.
NANO RESEARCH, cilt.8, sa.3, ss.860-869, 2015 (SCI-Expanded)
- XXVIII. **Construction of multi-layered white emitting organic nanoparticles by clicking polymers**
 Keita H., Guzelturk B., Pennakalathil J., ERDEM T., Demir H. V., Tuncel D.
JOURNAL OF MATERIALS CHEMISTRY C, cilt.3, sa.39, ss.10277-10284, 2015 (SCI-Expanded)
- XXIX. **Stable and efficient colour enrichment powders of nonpolar nanocrystals in LiCl**
 ERDEM T., Soran-Erdem Z., Sharma V. K., Kelestemur Y., Adam M., Gaponik N., Demir H. V.
NANOSCALE, cilt.7, sa.42, ss.17611-17616, 2015 (SCI-Expanded)
- XXX. **Manganese Doped Fluorescent Paramagnetic Nanocrystals for Dual-Modal Imaging**
 Sharma V. K., Gokyar S., Kelestemur Y., ERDEM T., Unal E., Demir H. V.

- SMALL, cilt.10, sa.23, ss.4961-4966, 2014 (SCI-Expanded)
- XXXI. **Energy-saving quality road lighting with colloidal quantum dot nanophosphors**
ERDEM T., Kelestemur Y., Soran-Erdem Z., Ji Y., Demir H. V.
NANOPHOTONICS, cilt.3, sa.6, ss.373-381, 2014 (SCI-Expanded)
- XXXII. **Highly polarized light emission by isotropic quantum dots integrated with magnetically aligned segmented nanowires**
Uran C., ERDEM T., Guzelturk B., Perkgoz N. K., Jun S., Jang E., Demir H. V.
APPLIED PHYSICS LETTERS, cilt.105, sa.14, 2014 (SCI-Expanded)
- XXXIII. **Comparative study of field-dependent carrier dynamics and emission kinetics of InGaN/GaN light-emitting diodes grown on $(11\bar{2})$ semipolar versus (0001) polar planes**
Ji Y., Liu W., ERDEM T., Chen R., Tan S. T., Zhang Z., Ju Z., Zhang X., Sun H., Sun X. W., et al.
APPLIED PHYSICS LETTERS, cilt.104, sa.14, 2014 (SCI-Expanded)
- XXXIV. **Tunable White-Light-Emitting Mn-Doped ZnSe Nanocrystals**
Sharma V. K., Guzelturk B., ERDEM T., Kelestemur Y., Demir H. V.
ACS APPLIED MATERIALS & INTERFACES, cilt.6, sa.5, ss.3654-3660, 2014 (SCI-Expanded)
- XXXV. **Morphology-Dependent Energy Transfer of Polyfluorene Nanoparticles Decorating InGaN/GaN Quantum-Well Nanopillars**
ERDEM T., Ibrahimova V., Jeon D., Lee I., Tuncel D., Demir H. V.
JOURNAL OF PHYSICAL CHEMISTRY C, cilt.117, sa.36, ss.18613-18619, 2013 (SCI-Expanded)
- XXXVI. **Color science of nanocrystal quantum dots for lighting and displays**
ERDEM T., Demir H. V.
NANOPHOTONICS, cilt.2, sa.1, ss.57-81, 2013 (SCI-Expanded)
- XXXVII. **Large-Area (over 50 cm x 50 cm) Freestanding Films of Colloidal InP/ZnS Quantum Dots**
Mutlugun E., Hernandez-Martinez P. L., Eroglu C., Coskun Y., Erdem T., Sharma V. K., Unal E., Panda S. K., Hickey S. G., Gaponik N., et al.
NANO LETTERS, cilt.12, sa.8, ss.3986-3993, 2012 (SCI-Expanded)
- XXXVIII. **Computational study of power conversion and luminous efficiency performance for semiconductor quantum dot nanophosphors on light-emitting diodes**
ERDEM T., Nizamoglu S., Demir H. V.
OPTICS EXPRESS, cilt.20, sa.3, ss.3275-3295, 2012 (SCI-Expanded)
- XXXIX. **Quantum dot integrated LEDs using photonic and excitonic color conversion**
Demir H. V., Nizamoglu S., Erdem T., Mutlugun E., Gaponik N., Eychmueller A.
NANO TODAY, cilt.6, sa.6, ss.632-647, 2011 (SCI-Expanded)
- XL. **Warm-white light-emitting diodes integrated with colloidal quantum dots for high luminous efficacy and color rendering: reply to comment**
Nizamoglu S., ERDEM T., Sun X. W., Demir H. V.
OPTICS LETTERS, cilt.36, sa.15, ss.2852, 2011 (SCI-Expanded)
- XLI. **High scotopic/photopic ratio white-light-emitting diodes integrated with semiconductor nanophosphors of colloidal quantum dots**
Nizamoglu S., ERDEM T., Demir H. V.
OPTICS LETTERS, cilt.36, sa.10, ss.1893-1895, 2011 (SCI-Expanded)
- XLII. **White-Emitting Conjugated Polymer Nanoparticles with Cross-Linked Shell for Mechanical Stability and Controllable Photometric Properties in Color-Conversion LED Applications**
Park E., ERDEM T., Ibrahimova V., Nizamoglu S., Demir H. V., Tuncel D.
ACS NANO, cilt.5, sa.4, ss.2483-2492, 2011 (SCI-Expanded)
- XLIII. **Semiconductor nanocrystals as rare-earth alternatives**
ERDEM T., Demir H. V.
NATURE PHOTONICS, cilt.5, sa.3, ss.126, 2011 (SCI-Expanded)
- XLIV. **Warm-white light-emitting diodes integrated with colloidal quantum dots for high luminous efficacy and color rendering**
Nizamoglu S., ERDEM T., Sun X. W., Demir H. V.

- OPTICS LETTERS, cilt.35, sa.20, ss.3372-3374, 2010 (SCI-Expanded)
- XLV. A photometric investigation of ultra-efficient LEDs with high color rendering index and high luminous efficacy employing nanocrystal quantum dot luminophores**
- ERDEM T., Nizamoglu S., Sun X. W., Demir H. V.
- OPTICS EXPRESS, cilt.18, sa.1, ss.340-347, 2010 (SCI-Expanded)

Kitap & Kitap Bölümleri

- I. **Color Science and Photometry for Lighting with LEDs and Semiconductor Nanocrystals**
- ERDEM T., DEMİR H. V.
- Springer, Singapore, 2019

Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

- I. **Machine Learning Based Classification of Microparticles Using Optical Scattering Simulations**
- Genç S., İçöz K., Erdem T.
- 16th Nanoscience and Nanotechnology Conference (NANOTR), Ankara, Türkiye, 5 - 08 Eylül 2022, ss.51
- II. **Simple, sustainable fabrication of fully solution-processed, transparent, metal-semiconductor-metal photodetectors using a surgical blade as an alternative to conventional tools**
- SAVAŞ M., YAZICI A. F., Arslan A., MUTLUGÜN E., ERDEM T.
- Conference on Nanophotonics IX Part of SPIE Photonics Europe Conference, Strasbourg, Fransa, 3 Nisan - 20 Mayıs 2022, cilt.12131
- III. **Machine Learning Assisted Particle Size and Type Classification Using Wavelength-Dependent Scattering Patterns**
- Genç S., İçöz K., Erdem T.
- International Conference on Optics and Photonics (OPTO) 2021, Wroclaw, Polonya, 12 - 15 Temmuz 2021, ss.15
- IV. **High-efficiency high-quality street lighting with colloidal quantum dot nanophosphors**
- Erdem T., KELEŞTEMUR Y., Soran-Erdem Z., Ji Y., Demir H. V.
- IEEE Photonics Conference, IPC 2015, Virginia, Amerika Birleşik Devletleri, 30 - 31 Ağustos 2015, ss.53-54
- V. **Exciton transfer and polarized emission in colloidal quantum dot-anthracene crystals**
- Soran-Erdem Z., Erdem T., Hernandez-Martinez P. L., Akgul M. Z., Gaponik N., Demir H. V.
- IEEE Photonics Conference, IPC 2015, Virginia, Amerika Birleşik Devletleri, 30 - 31 Ağustos 2015, ss.176-177
- VI. **Large area 50 cm x 50 cm freestanding flexible optical membranes of Cd free nanocrystal quantum dots**
- MUTLUGÜN E., Martinez Pedro H., Cuneyt E., Yasemin C., Talha E., Vijay K S., Emre U., Subhendu K P., Stephen G H., Nikolai G., et al.
- IEEE Photonics Conference 2012, Burlingame, CA, USA, 23 - 27 Eylül 2012
- VII. **Large-area (> 50 cm x 50 cm), freestanding, flexible, optical membranes of Cd-free nanocrystal quantum dots**
- Mutlugun E., Martinez P. L. H., Eroglu C., Coskun Y., ERDEM T., Sharma V. K., Unal E., Panda S. K., Hickey S. G., Gaponik N., et al.
- 25th IEEE Photonics Conference (IPC), California, Amerika Birleşik Devletleri, 23 - 27 Eylül 2012, ss.477-478
- VIII. **Power conversion and luminous efficiency performance of nanophosphor quantum dots on color-conversion LEDs for high-quality general lighting**
- ERDEM T., Nizamoglu S., Demir H. V.
- Conference on Light-Emitting Diodes - Materials, Devices, and Applications for Solid State Lighting XVI, San-Francisco, Kostarika, 24 - 26 Ocak 2012, cilt.8278
- IX. **Non-radiative energy-transfer-driven quantum dot LEDs**
- Guzelturk B., ERDEM T., Unal E., Nizamoglu S., Tuncel D., Demir H. V.

Desteklenen Projeler

Erkatal M., Erdem T., Büyükoğlu E., Şen Ü., TÜBİTAK Projesi, Uçucu Organik Bileşik, Gaz Ve Nem Algılama Uygulamaları İçin Metal-Organik Kafes Ve Metal-Oksit Melez Yapılar İçeren Bir Boyutlu Fotonik Yapıların Geliştirilmesi, 2023 - 2025

Erdem T., Boynueğri A. R., TÜBİTAK Projesi, 8. Lazer Kullanılarak Yüksek Verimli Ve Uzun Mesafeli Kablosuz Güç Aktarımı, 2022 - 2024

Erdem T., TÜBİTAK Projesi, Programlanabilir kendinden dizilimle optoelektronik aygıtların geliştirilmesi, 2021 - 2024
Mutlügen E., ERDEM T., TÜBİTAK Projesi, İleri Malzeme Yüksek Teknoloji Platformları ile Elektronik ve Optik Bileşen Üretilimi için Stratejik Ar-Ge Birliği, 2021 - 2024

Erdem T., Newton Programı Destekli Proje, Optical sensing of single-stranded DNAs by self-assembling DNA-functionalized nanoparticles of cellulose, semiconductors, and carbon dots, 2022 - 2023

Erdem T., TÜBİTAK Uluslararası İkili İşbirliği Projesi, Plazmon Filmleri Üzerine Kuantum Noktacıklarının Akıllı Kendinden Dizilimine Dayalı Ekziton-Plazmon Sistemlerinde Optik Tepki Olusturmanın Mekanizmaları, 2021 - 2023

Erdem T., Diğer Ülkelerdeki Kamu Kurumları Tarafından Desteklenmiş Proje, Investigation of the effect of light on the smart self-assembly of metal nanoparticles, 2020 - 2022

Erdem T., Diğer Ülkelerdeki Kamu Kurumları Tarafından Desteklenmiş Proje, Self-assembled liquid crystals of environmentally friendly 2D nanosheets for display applications, 2019 - 2020

Bilimsel Dergilerdeki Faaliyetler

Royal Society Open Science, Yardımcı Editör/Bölüm Editörü, 2017 - Devam Ediyor

Metrikler

Yayın: 55

Atıf (WoS): 1216

Atıf (Scopus): 1681

H-İndeks (WoS): 19

H-İndeks (Scopus): 20