

Asst. Prof. YUSUF KELEŞTEMUR

Personal Information

Office Phone: [+90 312 210 5911](tel:+903122105911) Extension: 5911

Email: yusufk@metu.edu.tr

Web: <https://avesis.metu.edu.tr/yusufk>

Address: Metalurji ve Malzeme Mühendisliği Bölümü

International Researcher IDs

ScholarID: NxztSl4AAAAJ

ORCID: 0000-0003-1616-2728

Publons / Web Of Science ResearcherID: AAJ-7958-2021

ScopusID: 55542524100

Yoksis Researcher ID: 316663

Education Information

Doctorate, Ihsan Dogramaci Bilkent University, Institute Of Engineering And Natural Sciences, Malzeme Bilimi ve Nanoteknoloji, Turkey 2012 - 2017

Postgraduate, Ihsan Dogramaci Bilkent University, Institute Of Engineering And Natural Sciences, Malzeme Bilimi ve Nanoteknoloji, Turkey 2010 - 2012

Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, Turkey 2005 - 2010

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Colloidal heterostructures of semiconductor quantum wells: Synthesis, characterization and applications, Ihsan Dogramaci Bilkent University, Institute Of Engineering And Natural Sciences, Malzeme Bilimi ve Nanoteknoloji, 2017

Postgraduate, Synthesis and characterization of highly efficient CdSe/CdS core/shell nanocrystals with SILAR technique, Ihsan Dogramaci Bilkent University, Institute Of Engineering And Natural Sciences, Malzeme Bilimi ve Nanoteknoloji, 2012

Research Areas

Semiconductor and Superconductor Materials, Optical Properties, Material Characterization, Nanomaterials, Structure-Property Relationship

Academic Titles / Tasks

Assistant Professor, Middle East Technical University, Faculty of Engineering, Department of Metallurgical and Materials Engineering, 2021 - Continues

Assistant Professor, Atilim University, Faculty Of Engineering, Department Of Metallurgical And Materials Engineering, 2020 - 2021

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Direct Synthesis of Zinc-Blende ZnSe Nanoplatelets**
Es M. S., Colak E., Irfanoglu A., KELEŞTEMUR Y.
ACS Omega, vol.9, no.25, pp.27438-27445, 2024 (SCI-Expanded)
- II. **Tattoo-Like Multi-Color Physically Unclonable Functions**
KİREMİTLER N. B., Esidir A., Drake G. A., YAZICI A. F., Sahin F., TÖRÜN İ., Kalay M., KELEŞTEMUR Y., Demir H. V., Shim M., et al.
Advanced Optical Materials, vol.12, no.12, 2024 (SCI-Expanded)
- III. **Light-Induced Paramagnetism in Colloidal Ag+-Doped CdSe Nanoplatelets**
Najafi A., Sharma M., Delikanli S., Bhattacharya A., Murphy J. R., Pientka J., Sharma A., Quinn A. P., Erdem O., Kattel S., et al.
JOURNAL OF PHYSICAL CHEMISTRY LETTERS, vol.12, no.11, pp.2892-2899, 2021 (SCI-Expanded)
- IV. **Fast Neutron Imaging with Semiconductor Nanocrystal Scintillators**
McCall K. M., Sakhatskyi K., Lehmann E., Walfort B., Losko A. S., Montanarella F., Bodnarchuk M., Krieg F., Kelestemur Y., Mannes D., et al.
ACS NANO, vol.14, no.11, pp.14686-14697, 2020 (SCI-Expanded)
- V. **Plasmon-enhanced fluorescence in gold nanorod-quantum dot coupled systems**
Trotsiuk L., Muravitskaya A., Kulakovich O., Guzatov D., Ramanenka A., Kelestemur Y., Demir H., Gaponenko S.
NANOTECHNOLOGY, vol.31, no.10, 2020 (SCI-Expanded)
- VI. **Colloidal CdSe Quantum Wells with Graded Shell Composition for Low-Threshold Amplified Spontaneous Emission and Highly Efficient Electroluminescence**
Kelestemur Y., Shynkarenko Y., Anni M., Yakunin S., De Giorgi M. L., Kovalenko M. V.
ACS NANO, vol.13, no.12, pp.13899-13909, 2019 (SCI-Expanded)
- VII. **Orientation-Controlled Nonradiative Energy Transfer to Colloidal Nanoplatelets: Engineering Dipole Orientation Factor**
Erdem O., Gungor K., Guzelturk B., Tanriover I., Sak M., Olutas M., Dede D., Kelestemur Y., Demir H. V.
NANO LETTERS, vol.19, no.7, pp.4297-4305, 2019 (SCI-Expanded)
- VIII. **Highly Stable Multicrown Heterostructures of Type-II Nanoplatelets for Ultralow Threshold Optical Gain**
Dede D., Taghipour N., Quliyeva U., Sak M., Kelestemur Y., Gungor K., Demir H. V.
CHEMISTRY OF MATERIALS, vol.31, no.5, pp.1818-1826, 2019 (SCI-Expanded)
- IX. **Highly Stable, Near-Unity Efficiency Atomically Flat Semiconductor Nanocrystals of CdSe/ZnS Hetero-Nanoplatelets Enabled by ZnS-Shell Hot-Injection Growth**
Altintas Y., Quliyeva U., Gungor K., Erdem O., Kelestemur Y., Mutlugun E., Kovalenko M. V., Demir H. V.
SMALL, vol.15, no.8, 2019 (SCI-Expanded)
- X. **Understanding the Journey of Dopant Copper Ions in Atomically Flat Colloidal Nanocrystals of CdSe Nanoplatelets Using Partial Cation Exchange Reactions**
Sharma M., Olutas M., Yeltik A., Kelestemur Y., Sharma A., Delikanli S., Guzelturk B., Gungor K., McBride J. R., Demir H. V.
CHEMISTRY OF MATERIALS, vol.30, no.10, pp.3265-3275, 2018 (SCI-Expanded)
- XI. **High-Efficiency Optical Gain in Type-II Semiconductor Nanocrystals of Alloyed Colloidal Quantum Wells**
Guzelturk B., Kelestemur Y., Olutas M., Li Q., Lian T., Demir H. V.
JOURNAL OF PHYSICAL CHEMISTRY LETTERS, vol.8, no.21, pp.5317-5324, 2017 (SCI-Expanded)

- XII. **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, vol.29, no.30, 2017 (SCI-Expanded)
- XIII. **Alloyed Heterostructures of CdSexS1-x Nanoplatelets with Highly Tunable Optical Gain Performance**
 Kelestemur Y., Dede D., Gungor K., Usanmaz C. F., Erdem O., Demir H. V.
 CHEMISTRY OF MATERIALS, vol.29, no.11, pp.4857-4865, 2017 (SCI-Expanded)
- XIV. **CdSe/CdSe1-xTex 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, vol.121, no.8, pp.4650-4658, 2017 (SCI-Expanded)
- XV. **Quantum Dot/Light-Emitting Electrochemical Cell Hybrid Device and Mechanism of Its Operation**
 Frohleiks J., Wepfer S., Kelestemur Y., Demir H. V., Bacher G., Nannen E.
 ACS APPLIED MATERIALS & INTERFACES, vol.8, no.37, pp.24692-24698, 2016 (SCI-Expanded)
- XVI. **Platelet-in-Box Colloidal Quantum Wells: CdSe/CdS@CdS Core/Crown@Shell Heteronanoplatelets**
 Kelestemur Y., Guzelturk B., Erdem O., Olutas M., Gungor K., Demir H. V.
 ADVANCED FUNCTIONAL MATERIALS, vol.26, no.21, pp.3570-3579, 2016 (SCI-Expanded)
- XVII. **Highly Efficient Nonradiative Energy Transfer from Colloidal Semiconductor Quantum Dots to Wells for Sensitive Noncontact Temperature Probing**
 Olutas M., Guzelturk B., Kelestemur Y., Gungor K., Demir H. V.
 ADVANCED FUNCTIONAL MATERIALS, vol.26, no.17, pp.2891-2899, 2016 (SCI-Expanded)
- XVIII. **Colloidal Nanoplatelet/Conducting Polymer Hybrids: Excitonic and Material Properties**
 Guzelturk B., Menk F., Philipps K., Kelestemur Y., Olutas M., Zentel R., Demir H. V.
 JOURNAL OF PHYSICAL CHEMISTRY C, vol.120, no.6, pp.3573-3582, 2016 (SCI-Expanded)
- XIX. **Temperature-Dependent Emission Kinetics of Colloidal Semiconductor Nanoplatelets Strongly Modified by Stacking**
 Erdem O., Olutas M., Guzelturk B., Kelestemur Y., Demir H. V.
 JOURNAL OF PHYSICAL CHEMISTRY LETTERS, vol.7, no.3, pp.548-554, 2016 (SCI-Expanded)
- XX. **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, vol.24, no.2, 2016 (SCI-Expanded)
- XXI. **Experimental Determination of the Absorption Cross-Section and Molar Extinction Coefficient of Colloidal CdSe Nanoplatelets**
 Yeltik A., Delikanli S., Olutas M., Kelestemur Y., Guzelturk B., Demir H. V.
 JOURNAL OF PHYSICAL CHEMISTRY C, vol.119, no.47, pp.26768-26775, 2015 (SCI-Expanded)
- XXII. **Implementation of graphene multilayer electrodes in quantum dot light-emitting devices**
 Wolff S., Jansen D., Terlinden H., Kelestemur Y., Mertin W., Demir H. V., Bacher G., Nannen E.
 APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING, vol.120, no.3, pp.1197-1203, 2015 (SCI-Expanded)
- XXIII. **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, vol.25, no.27, pp.4282-4289, 2015 (SCI-Expanded)
- XXIV. **Stable and Low-Threshold Optical Gain in CdSe/CdS Quantum Dots: An All-Colloidal Frequency Up-Converted Laser**
 Guzelturk B., Kelestemur Y., Gungor K., Yeltik A., Akgul M. Z., Wang Y., Chen R., Dang C., Sun H., Demir H. V.
 ADVANCED MATERIALS, vol.27, no.17, pp.2741-2747, 2015 (SCI-Expanded)
- XXV. **Lateral Size-Dependent Spontaneous and Stimulated Emission Properties in Colloidal CdSe Nanoplatelets**
 Olutas M., Guzelturk B., Kelestemur Y., Yeltik A., Delikanli S., Demir H. V.

- ACS NANO, vol.9, no.5, pp.5041-5050, 2015 (SCI-Expanded)
- XXVI. **Type-II Colloidal Quantum Wells: CdSe/CdTe Core/Crown Heteronanoplatelets**
Kelestemur Y., Olutas M., Delikanli S., Guzelturk B., Akgul M. Z., Demir H. V.
JOURNAL OF PHYSICAL CHEMISTRY C, vol.119, no.4, pp.2177-2185, 2015 (SCI-Expanded)
- XXVII. **Nonradiative energy transfer in colloidal CdSe nanoplatelet films**
Guzelturk B., Olutas M., Delikanli S., Kelestemur Y., Erdem O., Demir H. V.
NANOSCALE, vol.7, no.6, pp.2545-2551, 2015 (SCI-Expanded)
- XXVIII. **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, vol.7, no.42, pp.17611-17616, 2015 (SCI-Expanded)
- XXIX. **Stacking in Colloidal Nanoplatelets: Tuning Excitonic Properties**
Guzelturk B., Erdem O., Olutas M., Kelestemur Y., Demir H. V.
ACS NANO, vol.8, no.12, pp.12524-12533, 2014 (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, vol.10, no.23, pp.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, vol.3, no.6, pp.373-381, 2014 (SCI-Expanded)
- XXXII. **Type-tunable amplified spontaneous emission from core-seeded CdSe/CdS nanorods controlled by exciton-exciton interaction**
Kelestemur Y., Cihan A. F., Guzelturk B., Demir H. V.
NANOSCALE, vol.6, no.15, pp.8509-8514, 2014 (SCI-Expanded)
- XXXIII. **Ultralow Threshold One-Photon- and Two-Photon-Pumped Optical Gain Media of Blue-Emitting Colloidal Quantum Dot Films**
Guzelturk B., Kelestemur Y., Akgul M. Z., Sharma V. K., Demir H. V.
JOURNAL OF PHYSICAL CHEMISTRY LETTERS, vol.5, no.13, pp.2214-2218, 2014 (SCI-Expanded)
- XXXIV. **Amplified Spontaneous Emission and Lasing in Colloidal Nanoplatelets**
Guzelturk B., Kelestemur Y., Olutas M., Delikanli S., Demir H. V.
ACS NANO, vol.8, no.7, pp.6599-6605, 2014 (SCI-Expanded)
- XXXV. **Tunable White-Light-Emitting Mn-Doped ZnSe Nanocrystals**
Sharma V. K., Guzelturk B., Erdem T., Kelestemur Y., Demir H. V.
ACS APPLIED MATERIALS & INTERFACES, vol.6, no.5, pp.3654-3660, 2014 (SCI-Expanded)
- XXXVI. **Evidence for Nonradiative Energy Transfer in Graphene-Oxide-Based Hybrid Structures**
Yeltik A., Kucukayan-Dogu G., Guzelturk B., Fardindoost S., Kelestemur Y., Demir H. V.
JOURNAL OF PHYSICAL CHEMISTRY C, vol.117, no.48, pp.25298-25304, 2013 (SCI-Expanded)
- XXXVII. **Attractive versus Repulsive Excitonic Interactions of Colloidal Quantum Dots Control Blue- to Red-Shifting (and Non-shifting) Amplified Spontaneous Emission**
Cihan A. F., Kelestemur Y., Guzelturk B., Yerli O., Kurum U., YAĞLIOĞLU H. G., ELMALI A., Demir H. V.
JOURNAL OF PHYSICAL CHEMISTRY LETTERS, vol.4, no.23, pp.4146-4152, 2013 (SCI-Expanded)
- XXXVIII. **Observation of Biexcitons in Nanocrystal Solids in the Presence of Photocharging**
Cihan A. F., Martinez P. L. H., Kelestemur Y., Mutlugun E., Demir H. V.
ACS NANO, vol.7, no.6, pp.4799-4809, 2013 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

I. Exciton Dynamics of Colloidal Semiconductor Quantum Well Stacks

Erdem O., Guzelturk B., Olutas M., Kelestemur Y., Demir H. V.

NATO-Advanced-Study-Institute Conference on Quantum Nano-Photonics, Erice, Italy, 3 - 04 August 2017, pp.365-367

- II. **Heterodoped Nanoparticles as Dual-Mode Contrast Agent for MRI**
Alipour A., Sharma V. K., Soran-Erdem Z., Kelestemur Y., Aykut Z. G., Demir H. V.
21st National Biomedical Engineering Meeting (BIYOMUT), İstanbul, Turkey, 24 November - 26 December 2017
- III. **SILICA NANOPARTICLE FORMATION BY USING DROPLET-BASED MICROREACTOR**
Nikdoost A., Ozkan A., Kelestemur Y., Demir H. V., Erdem E. Y.
ASME International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems, San-Francisco, Costa Rica, 29 August - 01 September 2017
- IV. **High-efficiency high-quality street lighting with colloidal quantum dot nanophosphors**
ERDEM T., Kelestemur Y., Soran-Erdem Z., Ji Y., Demir H. V.
IEEE Photonics Conference, Preston, United Kingdom, 4 - 08 October 2015
- V. **SILICA SYNTHESIS & COATING OF QUANTUM DOTS IN DROPLET BASED MICROREACTORS**
Ozkan A., Kelestemur Y., Demir H. V., Erdem E. Y.
13TH ASME International Conference on Nanochannels, Microchannels, and Minichannels, San-Francisco, Costa Rica, 6 - 09 July 2015
- VI. **Low-threshold optical gain and lasing of colloidal nanoplatelets**
Kelestemur Y., Guzelturk B., Olutas M., Delikanli S., Demir H. V.
27th IEEE Photonics Conference (IPC), California, United States Of America, 12 - 16 October 2014, pp.540-541
- VII. **Blue- and red-shifting amplified spontaneous emission of CdSe/CdS core/shell colloidal quantum dots**
Kelestemur Y., Cihan A. F., Guzelturk B., Yerli O., Kurum U., YAĞLIOĞLU H. G., ELMALI A., Demir H. V.
Conference on Lasers and Electro-Optics (CLEO), San-Jose, Costa Rica, 9 - 14 June 2013
- VIII. **Type-tuning of quasi-type-II CdSe/CdS seeded core/shell nanorods: type-I vs. type-II**
Cihan A. F., Kelestemur Y., Guzelturk B., Demir H. V.
Conference on Lasers and Electro-Optics (CLEO), San-Jose, Costa Rica, 9 - 14 June 2013
- IX. **Observation of Biexcitons in the presence of Trions generated via Sequential Absorption of Multiple Photons in Colloidal Quantum Dot Solids**
Cihan A. F., Martinez P. L. H., Kelestemur Y., Demir H. V.
25th IEEE Photonics Conference (IPC), California, United States Of America, 23 - 27 September 2012, pp.756-757

Metrics

Publication: 47

Citation (WoS): 1530

Citation (Scopus): 1358

H-Index (WoS): 23

H-Index (Scopus): 22

Awards

Keleştemur Y., Optics and Photonics Education Scholarship, Spie, May 2015

Keleştemur Y., 2211-E Doğrudan Yurt İçi Doktora Bursu, Tubitak, January 2012

Keleştemur Y., 2210-A Genel Yurt İçi Yüksek Lisans Bursu, Tubitak, January 2010