

# **Prof. EVREN MUTLUGÜN**

## **Personal Information**

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## **International Researcher IDs**

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## **Biography**

Assoc. Prof. Evren Mutlugin received the B.Sc degree in Physics from Middle East Technical University in 2005. He got his M.Sc. and Ph.D. degrees, both from Bilkent University Physics Department in 2007 and 2012 respectively. Prior to joining Abdullah Güllü University as a faculty of Electrical-Electronics Engineering in 2014, he worked as a National Research Foundation Competitive Research Programme (NRF-CRP) research fellow at Nanyang Technological University, between 2012 and 2014. Since 2015, he is acting as the vice dean of School of Engineering at Abdullah Güllü University. His research focuses on the colloidal quantum dot-based exciton harvesting systems for novel optoelectronic applications. He is the recipient of the 2014 BAGEP Science Academy Young Scientist Award, 2017 Turkish Academy of Sciences Outstanding Young Scientist Award, 2019 Young Scientist Award of the Science Heroes Association, and has co-authored numerous conference papers and more than 60 SCI journals in high rank journals in the field.

## **Education Information**

Doctorate, İhsan Doğramacı Bilkent University, Faculty Of Science, Fizik, Turkey 2007 - 2011

Postgraduate, İhsan Doğramacı Bilkent University, Faculty Of Science, Fizik, Turkey 2005 - 2007

Undergraduate, Middle East Technical University, Fen Edebiyat Fakültesi, Fizik, Turkey 2002 - 2005

## **Foreign Languages**

English, C1 Advanced

## **Dissertations**

Doctorate, Exciton Harvesting Systems of Nanocrystals, İhsan Doğramacı Bilkent Üniversitesi, Fizik, Fizik, 2012

Postgraduate, Novel Ultraviolet Scintillators based on Semiconductor Quantum Dot Emitters for Significantly Enhanced Photodetection and Photovoltaics , İhsan Doğramacı Bilkent Üniversitesi, Fizik, Fen Fakültesi/Fizik, 2007

## **Research Areas**

Electrical and Electronics Engineering, Electronic, Nanotechnology, Optics and Photonics, Metallurgical and Materials Engineering, Material science and engineering, Optical Properties, Nanomaterials, Engineering and Technology

## **Academic Titles / Tasks**

Associate Professor, Abdullah Gul University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2017 - Continues  
Assistant Professor, Abdullah Gul University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2013 - Continues

## **Academic and Administrative Experience**

Vice Dean, Abdullah Gul University, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği, 2015 - Continues  
BAP Scientific Commissioner, Abdullah Gul University, 2014 - 2020  
Assistant Director of the Institute, Abdullah Gul University, 2014 - 2015

## **Courses**

PHYSICS II FOR ELECTRICAL ELECTRONICS ENGINEERING, Undergraduate, 2020 - 2021  
SPECIAL TOPICS IN EEE, Postgraduate, 2020 - 2021  
PHYSICS II, Undergraduate, 2020 - 2021

## **Published journal articles indexed by SCI, SSCI, and AHCI**

- 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. Toward sustainable optoelectronics: solution-processed quantum dot photodetector fabrication using a surgical blade  
SAVAŞ M., Yazıcı A. F., BİÇER A., MUTLUGÜN E., ERDEM T.  
Optical Engineering, vol.62, no.2, 2023 (SCI-Expanded)
- III. Magnetically controlled anisotropic light emission of DNA-functionalized supraparticles  
ERDEM T., Zupkauskas M., O'Neill T., Cassiagli A., Xu P., ALTINTAS Y., MUTLUGÜN E., Eiser E.  
MRS BULLETIN, vol.47, no.11, pp.1084-1091, 2022 (SCI-Expanded)
- IV. Nanowire-Shaped MoS<sub>2</sub>@MoO<sub>3</sub> Nanocomposites as a Hole Injection Layer for Quantum Dot Light-Emitting Diodes  
Bastami N., Soheyli E., Arslan A., Sahraei R., YAZICI A. F., MUTLUGÜN E.  
ACS APPLIED ELECTRONIC MATERIALS, vol.4, no.8, pp.3849-3859, 2022 (SCI-Expanded)
- V. Superior CdSe/ZnS@Fe2O3 Yolk-Shell Nanoparticles as Optically Active MRI Contrast Agents  
DİNÇYÜREK EKİCİ D., MUTLUGÜN E.  
CHEMISTRYSELECT, vol.7, no.25, 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, vol.10, no.14, 2022 (SCI-Expanded)
- VII. Natural Wax-Stabilized Perovskite Nanocrystals as Pen-on-Paper Inks and Doughs  
Ocal S. K., KİREMİTLER N. B., YAZICI A. F., ÇELİK N., MUTLUGÜN E., ÖNSES M. S.  
ACS APPLIED NANO MATERIALS, vol.5, no.5, pp.6201-6212, 2022 (SCI-Expanded)
- VIII. Meso-pi-Extended/Deficient BODIPYs and Low-Band-Gap Donor-Acceptor Copolymers for Organic Optoelectronics  
CAN A., Choi G., ÖZDEMİR R., Park S., Park J. S., Lee Y., DENEME İ., MUTLUGÜN E., Kim C., Kim B. J., et al.  
ACS APPLIED POLYMER MATERIALS, vol.4, no.3, pp.1991-2005, 2022 (SCI-Expanded)
- IX. Highly luminescent ZnCdTeS nanocrystals with wide spectral tunability for efficient color-conversion

**white-light-emitting-diodes**

Soheyli E., Zargoush S., YAZICI A. F., Sahraei R., MUTLUGÜN E.

JOURNAL OF PHYSICS D-APPLIED PHYSICS, vol.54, no.50, 2021 (SCI-Expanded)

- X. Long-time stable colloidal Zn-Ag-In-S quantum dots with tunable midgap-involved emission

Sabzevari Z., Sahraei R., Jawhar N. N., YAZICI A. F., MUTLUGÜN E., Soheyli E.

JOURNAL OF APPLIED PHYSICS, vol.129, no.6, 2021 (SCI-Expanded)

- XI. Rational design of chemical bath deposition technique for successful preparation of Mn-doped CdS nanostructured thin films with controlled optical properties

Kharabaneh F. K., Ghavidel E., Soheyli E., Yazici A. F., Jawhar N. N., Mutlugün E., Sahraei R.

CERAMICS INTERNATIONAL, vol.47, no.4, pp.5523-5533, 2021 (SCI-Expanded)

- XII. 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, vol.124, no.42, pp.9475-9481, 2020 (SCI-Expanded)

- XIII. A hybridized local and charge transfer excited state for solution-processed non-doped green electroluminescence based on oligo(p-phenyleneethynylene)

USTA H., Alimli D., ÖZDEMİR R., Tekin E., ALKAN F., Kacar R., Altas A. G., Dabak S., Gurek A. G., MUTLUGÜN E., et al.

JOURNAL OF MATERIALS CHEMISTRY C, vol.8, no.24, pp.8047-8060, 2020 (SCI-Expanded)

- XIV. Preparation of highly emissive and reproducible Cu-In-S/ZnS core/shell quantum dots with a mid-gap emission character

Jawhar N. N., Soheyli E., YAZICI A. F., MUTLUGÜN E., Sahraei R.

JOURNAL OF ALLOYS AND COMPOUNDS, vol.824, 2020 (SCI-Expanded)

- XV. Record High External Quantum Efficiency of 19.2% Achieved in Light-Emitting Diodes of Colloidal Quantum Wells Enabled by Hot-Injection Shell Growth

Liu B., Altintas Y., Wang L., Shendre S., Sharma M., Sun H., Mutlugun E., Demir H. V.

ADVANCED MATERIALS, vol.32, no.8, 2020 (SCI-Expanded)

- XVI. 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, vol.36, no.4, pp.911-918, 2020 (SCI-Expanded)

- XVII. 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, vol.380, 2020 (SCI-Expanded)

- XVIII. Writing chemical patterns using electrospun fibers as nanoscale inkpots for directed assembly of colloidal nanocrystals

KİREMİTLER N. B., TÖRUN İ., ALTINTAS Y., Patarroyo J., Demir H. V., Puntes V. F., Mutlugun E., ÖNSES M. S.

NANOSCALE, vol.12, no.2, pp.895-903, 2020 (SCI-Expanded)

- XIX. Improving performance and stability in quantum dot-sensitized solar cell through single layer graphene/Cu<sub>2</sub>S nanocomposite counter electrode

Akman E., ALTINTAS Y., Gulen M., Yilmaz M., MUTLUGÜN E., Sonmezoglu S.

RENEWABLE ENERGY, vol.145, pp.2192-2200, 2020 (SCI-Expanded)

- XX. Giant Alloyed Hot Injection Shells Enable Ultralow Optical Gain Threshold in Colloidal Quantum Wells

Altintas Y., Gungor K., Gao Y., Sak M., Quliyeva U., Bappi G., Mutlugun E., Sargent E. H., Demir H. V.

ACS NANO, vol.13, no.9, pp.10662-10670, 2019 (SCI-Expanded)

- XXI. Cesium-lead based inorganic perovskite quantum-dots as interfacial layer for highly stable perovskite solar cells with exceeding 21% efficiency

Akin S., ALTINTAS Y., MUTLUGÜN E., Sonmezoglu S.

NANO ENERGY, vol.60, pp.557-566, 2019 (SCI-Expanded)

- XXII. 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)
- XXIII. **FRET enabled light harvesting within quantum dot loaded nanofibers**  
ALTINTAS Y., KİREMİTLER N. B., GENÇ S., ÖNSES M. S., MUTLUGÜN E.  
JOURNAL OF PHYSICS D-APPLIED PHYSICS, vol.51, no.6, 2018 (SCI-Expanded)
- XXIV. **Cd-free quantum dot pellets for efficient white light generation**  
ALTINTAS Y., TALPUR M. Y., MUTLUGÜN E.  
OPTICS EXPRESS, vol.25, no.23, pp.28371-28384, 2017 (SCI-Expanded)
- XXV. **Rec. 2100 color gamut revelation using spectrally ultranarrow emitters**  
Genc S., UĞUZ M., YILMAZ O., Mutlugu E.  
OPTICAL ENGINEERING, vol.56, no.11, 2017 (SCI-Expanded)
- XXVI. **Excitonic interaction amongst InP/ZnS salt pellets**  
ALTINTAS Y., YAZICI A. F., ÜNLÜ M., DADI Ş., GENÇ S., MUTLUGÜN E.  
JOURNAL OF MATERIALS CHEMISTRY C, vol.5, no.29, pp.7328-7336, 2017 (SCI-Expanded)
- XXVII. **Efficient Forster Resonance Energy Transfer Donors of In(Zn)P/ZnS Quantum Dots**  
ALTINTAS Y., TALPUR M. Y., MUTLUGÜN E.  
JOURNAL OF PHYSICAL CHEMISTRY C, vol.121, no.5, pp.3034-3043, 2017 (SCI-Expanded)
- XXVIII. **The effect of ligand chain length on the optical properties of alloyed core-shell InPZnS/ZnS quantum dots**  
ALTINTAS Y., TALPUR M. Y., MUTLUGÜN E.  
Journal of Alloys and Compounds, vol.711, pp.335-341, 2017 (SCI-Expanded)
- XXIX. **CdSe/ZnS quantum dot films for high performance flexible lighting and display applications**  
ALTINTAS Y., GENÇ S., Talpur M. Y., MUTLUGÜN E.  
NANOTECHNOLOGY, vol.27, no.29, 2016 (SCI-Expanded)
- XXX. **CdSe/ZnS quantum dot films for high performance flexible lighting and display applications.**  
ALTINTAS Y., GENÇ S., TALPUR M. Y., MUTLUGÜN E.  
NANOTECHNOLOGY, pp.295604-295612, 2016 (SCI-Expanded)
- XXXI. **Highly Efficient Cd-Free Alloyed Core/Shell Quantum Dots with Optimized Precursor Concentrations**  
ALTINTAS Y., TALPUR M. Y., ÜNLÜ M., MUTLUGÜN E.  
JOURNAL OF PHYSICAL CHEMISTRY C, vol.120, no.14, pp.7885-7892, 2016 (SCI-Expanded)
- XXXII. **Exciton dynamics in luminescent carbon nanodots: Electron-hole exchange interaction**  
Peng B., Lu X., Chen S., Huan C. H. A., Xiong Q., Mutlugu E., Demir H. V., Yu S. F.  
NANO RESEARCH, vol.9, no.2, pp.549-559, 2016 (SCI-Expanded)
- XXXIII. **Trans-cis isomerization assisted synthesis of solution-processable yellow fluorescent maleic anhydrides for white-light generation**  
Özdemir M., GENÇ S., ÖZDEMİR R., ALTINTAS Y., Citir M., Sen U., MUTLUGÜN E., USTA H.  
SYNTHETIC METALS, vol.210, pp.192-200, 2015 (SCI-Expanded)
- XXXIV. **Electroluminescence Efficiency Enhancement in Quantum Dot Light-Emitting Diodes by Embedding a Silver Nanoisland Layer**  
Yang X., Hernandez-Martinez P. L., Dang C., Mutlugu E., Zhang K., Demir H. V., Sun X. W.  
ADVANCED OPTICAL MATERIALS, vol.3, no.10, pp.1439-1445, 2015 (SCI-Expanded)
- XXXV. **Observation of polarized gain from aligned colloidal nanorods**  
Gao Y., Van Duong Ta V. D. T., Zhao X., Wang Y., Chen R., Mutlugu E., Fong K. E., Tan S. T., Dang C., Sun X. W., et al.  
NANOSCALE, vol.7, no.15, pp.6481-6486, 2015 (SCI-Expanded)
- XXXVI. **Light Extraction Efficiency Enhancement of Colloidal Quantum Dot Light-Emitting Diodes Using Large-Scale Nanopillar Arrays**  
Yang X., Dev K., Wang J., Mutlugu E., Dang C., Zhao Y., Liu S., Tang Y., Tan S. T., Sun X. W., et al.  
ADVANCED FUNCTIONAL MATERIALS, vol.24, no.38, pp.5977-5984, 2014 (SCI-Expanded)
- XXXVII. **Colloidal Quantum Dot Light-Emitting Diodes Employing Phosphorescent Small Organic Molecules as Efficient Exciton Harvesters**  
Mutlugu E., Guzelturk B., Abiyasa A. P., Gao Y., Sun X. W., Demir H. V.  
JOURNAL OF PHYSICAL CHEMISTRY LETTERS, vol.5, no.16, pp.2802-2807, 2014 (SCI-Expanded)

- XXXVIII. **Highly Flexible, Electrically Driven, Top-Emitting, Quantum Dot Light-Emitting Stickers**  
 Yang X., Mutlugun E., Dang C., Dev K., Gao Y., Tan S. T., Sun X. W., Demir H. V.  
*ACS NANO*, vol.8, no.8, pp.8224-8231, 2014 (SCI-Expanded)
- XXXIX. **Hyperbolic metamaterials based on quantum-dot plasmon-resonator nanocomposites**  
 Zhukovsky S. V., Ozel T., Mutlugun E., Gaponik N., Eychmuller A., Lavrinenco A. V., Demir H. V., Gaponenko S. V.  
*OPTICS EXPRESS*, vol.22, no.15, pp.18290-18298, 2014 (SCI-Expanded)
- XL. **Quantum dots on vertically aligned gold nanorod monolayer: plasmon enhanced fluorescence**  
 Peng B., Li Z., Mutlugun E., Hernandez Martinez P. L., Li D., Zhang Q., Gao Y., Demir H. V., Xiong Q.  
*NANOSCALE*, vol.6, no.11, pp.5592-5598, 2014 (SCI-Expanded)
- XLI. **Stimulated Emission and Lasing from CdSe/CdS/ZnS Core-Multi-Shell Quantum Dots by Simultaneous Three-Photon Absorption**  
 Wang Y., Van Duong Ta V. D. T., Gao Y., He T. C., Chen R., Mutlugun E., Demir H. V., Sun H. D.  
*ADVANCED MATERIALS*, vol.26, no.18, pp.2954-2961, 2014 (SCI-Expanded)
- XLII. **Transition metal oxides on organic semiconductors**  
 Zhao Y., Zhang J., Liu S., Gao Y., Yang X., Leck K. S., Abiyasa A. P., Divayana Y., Mutlugun E., Tan S. T., et al.  
*ORGANIC ELECTRONICS*, vol.15, no.4, pp.871-877, 2014 (SCI-Expanded)
- XLIII. **Nanosecond colloidal quantum dot lasers for sensing**  
 Guilhabert B., Foucher C., Haughey A., Mutlugun E., Gao Y., Herrnsdorf J., Sun H. D., Demir H. V., Dawson M. D., Laurand N.  
*OPTICS EXPRESS*, vol.22, no.6, pp.7308-7319, 2014 (SCI-Expanded)
- XLIV. **Solution Processed Tungsten Oxide Interfacial Layer for Efficient Hole-Injection in Quantum Dot Light-Emitting Diodes**  
 Yang X., Mutlugun E., Zhao Y., Gao Y., Leck K. S., Ma Y., Ke L., Tan S. T., Demir H. V., Sun X. W.  
*SMALL*, vol.10, no.2, pp.247-252, 2014 (SCI-Expanded)
- XLV. **Stable, Efficient, and All-Solution-Processed Quantum Dot Light-Emitting Diodes with Double-Sided Metal Oxide Nanoparticle Charge Transport Layers**  
 Yang X., Ma Y., Mutlugun E., Zhao Y., Leck K. S., Tan S. T., Demir H. V., Zhang Q., Du H., Sun X. W.  
*ACS APPLIED MATERIALS & INTERFACES*, vol.6, no.1, pp.495-499, 2014 (SCI-Expanded)
- XLVI. **AC-driven, color-and brightness-tunable organic light-emitting diodes constructed from an electron only device**  
 Zhao Y., Chen R., Gao Y., Leck K. S., Yang X., Liu S., Abiyasa A. P., Divayana Y., Mutlugun E., Tan S. T., et al.  
*ORGANIC ELECTRONICS*, vol.14, no.12, pp.3195-3200, 2013 (SCI-Expanded)
- XLVII. **Quantum Dot Light-Emitting Diode with Quantum Dots Inside the Hole Transporting Layers**  
 Leck K. S., Divayana Y., Zhao D., Yang X., Abiyasa A. P., Mutlugun E., Gao Y., Liu S., Tan S. T., Sun X. W., et al.  
*ACS APPLIED MATERIALS & INTERFACES*, vol.5, no.14, pp.6535-6540, 2013 (SCI-Expanded)
- XLVIII. **Observation of Selective Plasmon-Exciton Coupling in Nonradiative Energy Transfer: Donor-Selective versus Acceptor-Selective Plexcitons**  
 Ozel T., Hernandez-Martinez P. L., Mutlugun E., Akin O., Nizamoglu S., Ozel I. O., Zhang Q., Xiong Q., Demir H. V.  
*NANO LETTERS*, vol.13, no.7, pp.3065-3072, 2013 (SCI-Expanded)
- XLIX. **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)
- L. **Plasmonic light-sensitive skins of nanocrystal monolayers**  
 Akhavan S., Gungor K., Mutlugun E., Demir H. V.  
*NANOTECHNOLOGY*, vol.24, no.15, 2013 (SCI-Expanded)
- LI. **Bio-nanohybrids of quantum dots and photoproteins facilitating strong nonradiative energy transfer**  
 Seker U. O. S., Mutlugun E., Hernandez-Martinez P. L., Sharma V. K., Lesnyak V., Gaponik N., Eychmuller A., Demir H. V.  
*NANOSCALE*, vol.5, no.15, pp.7034-7040, 2013 (SCI-Expanded)
- LII. **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, vol.12, no.8, pp.3986-3993, 2012 (SCI-Expanded)
- LIII. **Excitonic enhancement of nonradiative energy transfer from a quantum well in the optical near field of energy gradient quantum dots**  
 Nizamoglu S., Hernandez-Martinez P. L., Mutlugun E., Karatay D. U., Demir H. V.  
 APPLIED PHYSICS LETTERS, vol.100, no.24, 2012 (SCI-Expanded)
- LIV. **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, vol.6, no.6, pp.632-647, 2011 (SCI-Expanded)
- LV. **Photocatalytic hybrid nanocomposites of metal oxide nanoparticles enhanced towards the visible spectral range**  
 Perkgoz N. K., Toru R. S., Unal E., Sefunc M. A., Tek S., Mutlugun E., Soganci I. M., Celiker H., Celiker G., Demir H. V.  
 APPLIED CATALYSIS B-ENVIRONMENTAL, vol.105, pp.77-85, 2011 (SCI-Expanded)
- LVI. **Spatially Selective Assembly of Quantum Dot Light Emitters in an LED Using Engineered Peptides**  
 Demir H. V., Seker U. O. S., Zengin G., Mutlugun E., Sari E., Tamerler C., Sarikaya M.  
 ACS NANO, vol.5, no.4, pp.2735-2741, 2011 (SCI-Expanded)
- LVII. **Anisotropic Emission from Multi layered Plasmon Resonator Nanocomposites of Isotropic Semiconductor Quantum Dots**  
 Ozel T., Nizamoglu S., Sefunc M. A., Samarskaya O., Ozel I. O., Mutlugun E., Lesnyak V., Gaponik N., Eychmuller A., Gaponenko S. V., et al.  
 ACS NANO, vol.5, no.2, pp.1328-1334, 2011 (SCI-Expanded)
- LVIII. **Photovoltaic nanopillar radial junction diode architecture enhanced by integrating semiconductor quantum dot nanocrystals as light harvesters**  
 Guzelturk B., Mutlugun E., Wang X., Pey K. L., Demir H. V.  
 APPLIED PHYSICS LETTERS, vol.97, no.9, 2010 (SCI-Expanded)
- LIX. **Highly efficient nonradiative energy transfer mediated light harvesting in water using aqueous CdTe quantum dot antennas**  
 Mutlugun E., Samarskaya O., Ozel T., Cicek N., Gaponik N., Eychmuller A., Demir H. V.  
 OPTICS EXPRESS, vol.18, no.10, pp.10720-10730, 2010 (SCI-Expanded)
- LX. **Highly efficient nonradiative energy transfer using charged CdSe/ZnS nanocrystals for light-harvesting in solution**  
 Mutlugun E., Nizamoglu S., Demir H. V.  
 APPLIED PHYSICS LETTERS, vol.95, no.3, 2009 (SCI-Expanded)
- LXI. **Structural tuning of color chromaticity through nonradiative energy transfer by interspacing CdTe nanocrystal monolayers**  
 Cicek N., Nizamoglu S., Ozel T., Mutlugun E., Karatay D. U., Lesnyak V., Otto T., Gaponik N., Eychmuller A., Demir H. V.  
 APPLIED PHYSICS LETTERS, vol.94, no.6, 2009 (SCI-Expanded)
- LXII. **Selective enhancement of surface-state emission and simultaneous quenching of interband transition in white-luminophor CdS nanocrystals using localized plasmon coupling**  
 Ozel T., Soganci I. M., Nizamoglu S., Huyal I. O., Mutlugun E., Sapra S., Gaponik N., Eychmuller A., Demir H. V.  
 NEW JOURNAL OF PHYSICS, vol.10, 2008 (SCI-Expanded)
- LXIII. **Tuning shades of white light with multi-color quantum-dot-quantum-well emitters based on onion-like CdSe-ZnS heteronanocrystals**  
 Demir H. V., Nizamoglu S., Mutlugun E., Ozel T., Sapra S., Gaponik N., Eychmuller A.  
 NANOTECHNOLOGY, vol.19, no.33, 2008 (SCI-Expanded)
- LXIV. **Dual-color emitting quantum-dot-quantum-well CdSe-ZnS heteronanocrystals hybridized on InGaN/GaN light emitting diodes for high-quality white light generation**  
 Nizamoglu S., Mutlugun E., Oezel T., Demir H. V., Sapra S., Gaponik N., Eychmuller A.  
 APPLIED PHYSICS LETTERS, vol.92, no.11, 2008 (SCI-Expanded)
- LXV. **Photovoltaic nanocrystal scintillators hybridized on Si solar cells for enhanced conversion efficiency**

#### in UV

Mutlugun E., Sogancı I. M., Demir H. V.

OPTICS EXPRESS, vol.16, no.6, pp.3537-3545, 2008 (SCI-Expanded)

- LXVI. **White emitting CdS quantum dot nanoluminophores hybridized on near-ultraviolet LEDs for high-quality white light generation and tuning**

Nizamoglu S., Mutlugun E., Akyuz O., Perkgoz N. K., Demir H. V., Liebscher L., Sapra S., Gaponik N., Eychmueller A. NEW JOURNAL OF PHYSICS, vol.10, 2008 (SCI-Expanded)

- LXVII. **Localized plasmon-engineered spontaneous emission of CdSe/ZnS nanocrystals closely-packed in the proximity of Ag nanoisland films for controlling emission linewidth, peak, and intensity**

Sogancı I. M., Nizamoglu S., Mutlugun E., Akin O., Demir H. V.

OPTICS EXPRESS, vol.15, no.22, pp.14289-14298, 2007 (SCI-Expanded)

- LXVIII. **White light generation tuned by dual hybridization of nanocrystals and conjugated polymers**

Demir H. V., Nizamoglu S., Ozel T., Mutlugun E., Huyal I. O., Sari E., Holder E., Tian N.

NEW JOURNAL OF PHYSICS, vol.9, 2007 (SCI-Expanded)

- LXIX. **Nanocrystal hybridized scintillators for enhanced detection and imaging on Si platforms in UV**

Mutlugun E., Sogancı I. M., Demir H. V.

OPTICS EXPRESS, vol.15, no.3, pp.1128-1134, 2007 (SCI-Expanded)

- LXX. **Comparative study of optically activated nanocomposites with photocatalytic TiO<sub>2</sub> and ZnO nanoparticles for massive environmental decontamination**

Tek S., Mutlugun E., Sogancı I. M., Perkgoz N. K., Yucel D., Celiker G., Demir H. V.

JOURNAL OF NANOPHOTONICS, vol.1, 2007 (SCI-Expanded)

### Articles Published in Other Journals

- I. **Solid-State Encapsulation and Color Tuning in Films of Cesium Lead Halide Perovskite Nanocrystals for White Light Generation**

Torun I., Altintas Y., Yazıcı A. F., Mutlugün E., Önses M. S.

ACS APPLIED NANO MATERIALS, vol.2, pp.1185-1193, 2019 (ESCI)

- II. **Plasmon Enhanced Emission of Perovskite Quantum Dot Films**

DADI Ş., ALTINTAS Y., Beskazak E., MUTLUGÜN E.

MRS ADVANCES, vol.3, no.14, pp.733-739, 2018 (ESCI)

### Refereed Congress / Symposium Publications in Proceedings

- I. **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, France, 3 April - 20 May 2022, vol.12131

- II. **Color Simulation and Demonstration of Perovskite Nanocrystal Filters for Wide Color Gamut Displays**

GENÇ S., YAZICI A. F., Beskazak E., Uran C., MUTLUGÜN E.

31st Annual Conference of the IEEE Photonics Society, IPC 2018, Virginia, United States Of America, 30 September - 04 October 2018

- III. **Effect of ionic liquids on Cu<sub>2</sub>S counter electrode-based quantum dot-sensitized solarcells**

TEKİN B., ALTINTAS Y., GÜLEN M., AKMAN E., MUTLUGÜN E., SÖNMEZOĞLU S.

International Conference on Photovoltaic Science and Technologies(PVCON), 4 - 06 July 2018

- IV. **Redesign of commercial color filters for color enriched LCDs**

Genç S., Uran C., Mutlugün E.

- International Conference on Optics and Photonics (OPTO) 2018, Gdańsk, Poland, 4 - 07 July 2018
- V. **The Effect of Tetraethylorthosilicate on the Performance of CdSe/ZnS Core-shell Quantum Dots Sensitized Solar Cells (QDSSC)**  
AKMAN E., ALTINTAS Y., GÜLEN M., TEKİN B., UZUNER B. E., ARSLAN H., MUTLUGÜN E., SÖNMEZOĞLU S.  
The International Conference on Materials Science, Machine and Automotive Engineerings and Technology, 10 - 12 April 2018
- VI. **Arrays of multi-color emitting cesium lead halide perovskite nanocrystals and efficient white light generation by tailored anion exchange reactions and electrohydrodynamic jet printing**  
ALTINTAS Y., TÖRÜN İ., YAZICI A. F., BEŞKAZAK E., ÖNSES M. S., MUTLUGÜN E.  
Solid-State Lighting, SSL 2018, Singapore, Singapore, 5 - 08 November 2018
- VII. **Plasmon Enhanced Emission of Perovskite Quantum Dot Films**  
MUTLUGÜN E., DADI Ş., ALTINTAS Y., BEŞKAZAK E.  
2017 MRS Fall Meeting, 26 November - 01 December 2017
- VIII. **The Effect of Fourth Color Component on Color Gamut Enhancement**  
GENÇ S., UĞUZ M., MUTLUGÜN E.  
IEEE Photonics Conference 2017, Florida, United States Of America, 1 - 05 October 2017
- IX. **The effect of fourth color component on enhancement of color gamut**  
GENÇ S., Uğuz M., MUTLUGÜN E.  
30th Annual Conference of the IEEE-Photonics-Society (IPC), Florida, United States Of America, 1 - 05 October 2017, pp.227-228
- X. **Synthesis and Characterization of High Quality Red Emitting CsPbBr<sub>x</sub>I<sub>3-x</sub> Perovskite QDs**  
ALTINTAS Y., BEŞKAZAK E., MUTLUGÜN E.  
33. International Physics Congress, Muğla, Turkey, 6 - 10 September 2017, pp.187
- XI. **Optical Properties of High Quality Cd-free CuInS, CuInGaS and ZnAgInS Quantum Dots**  
ALTINTAS Y., MUTLUGÜN E.  
33. International Physics Congress, Muğla, Turkey, 6 - 10 September 2017, pp.180
- XII. **Saturated Energy Transfer among InP/ZnS Quantum Dot Solids**  
ALTINTAS Y., MUTLUGÜN E.  
MRS 2017 Spring Meeting, Phoenix, United States Of America, 17 - 21 April 2017
- XIII. **Quantum Dot Integrated Nanofibers for White LEDs**  
MUTLUGÜN E., ALTINTAS Y., KİREMİTLER N. B., GENÇ S., ÖNSES M. S.  
Materials Research Society, MRS 2017 Spring Meeting, Arizona, United States Of America, 17 - 21 April 2017
- XIV. **Polymeric Nanocrystal Sheets for Efficient Lighting and Display Applications**  
MUTLUGÜN E., ALTINTAS Y., GENÇ S., TALPUR M. Y.  
Materials Research Society, MRS 2016 Fall Meeting, Boston, United States Of America, 27 November - 02 December 2016
- XV. **Nanocrystal Sheets for Efficient Lighting and Display Applications**  
ALTINTAS Y., GENÇ S., Talpur M. Y., MUTLUGÜN E.  
Materials Research Society Fall Meeting, 27 November - 02 December 2016
- XVI. **InP/ZnS Based Nanocrystal Sheets For Biolabeling Applications**  
ÜNLÜ M., ALTINTAS Y., MUTLUGÜN E.  
3st International NANOSCIENCE & NANOTECHNOLOGY FOR NEXT GENERATION (NaNoNG 2016), Antalya, Turkey, 20 October - 22 November 2016, pp.29
- XVII. **Computational study on NTSC color gamut enhancement using nano emitters**  
GENÇ S., UĞUZ M., MUTLUGÜN E.  
IEEE Photonics Conference 2016, Hawaii, United States Of America, 2 - 06 October 2016
- XVIII. **THE EFFECT OF ZN PRECURSOR ON THE ACHIEVEMENT OF HIGHLY EFFICIENT ECO-FRIENDLY COLLOIDAL SEMICONDUCTOR QUANTUM DOTS**  
ALTINTAS Y., TALPUR M. Y., MUTLUGÜN E.  
32. International Physics Congress, Muğla, Turkey, 6 - 09 September 2016, pp.82
- XIX. **12th International Nanoscience and Nanotechnology Conference**

- MUTLUGÜN E.  
12th International Nanoscience and Nanotechnology Conference, 3 - 05 June 2016
- XX. **Overcoating Alloyed InPZnS Quantum Dots for Record High Quantum Efficiency and Narrow Size Distribution Through Optimized Precursor Concentration**  
MUTLUGÜN E., ALTINTAS Y., Talpur M. Y., ÜNLÜ M.  
Materials Research Society- MRS 2015 Fall Meeting, Boston, United States Of America, 29 November - 04 December 2015
- XXI. **Color tunable highly efficient Cd-free quantum dots utilized by core growth temperature effect**  
ALTINTAS Y., Talpur M. Y., MUTLUGÜN E.  
International Conference on Nanoscience and Nanotechnology for Next Generation NANONG2015, Antalya, Turkey, 29 - 31 October 2015, pp.35
- XXII. **Low cost large scale ordered ZnO nanopillar arrays for light extraction efficiency enhancement in quantum dot light emitting diodes**  
Yang X., Kapil D., Wang J., MUTLUGÜN E., Dang C., Zhao Y., Tiam Tan S., Wei Sun X., DEMİR H. V.  
2014 IEEE Photonics Conference, San Diego, CA, 12 - 16 October 2014
- XXIII. **Nanocrystal LEDs with enhanced external quantum efficiency enabled by the use of phosphorescent molecules**  
MUTLUGÜN E.  
26th IEEE Annual Photonics Society Meeting, Wa, United States Of America, 8 - 12 September 2013, pp.2
- XXIV. **Highly flexible full color top emitting quantum dot light emitting diode tapes**  
Xuyong Y., MUTLUGÜN E., Yuan G., Yongbiao Z., Swee Tiam T., Xiao Wei S., DEMİR H. V.  
2013 IEEE Photonics Conference, Bellevue, WA, USA, 8 - 12 September 2013
- XXV. **CdSe ZnS colloidal quantum dots for solution processed DFB lasers**  
Benoit G., Herrnsdorf J., Gao Y., MUTLUGÜN E., DEMİR H. V., Laurand N., Martin D.  
2013 IEEE Photonics Conference, Bellevue, WA, USA, 8 - 12 September 2013
- XXVI. **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 September 2012
- XXVII. **Observation of anisotropic emission from semiconductor quantum dots in nanocomposites of metal nanoparticles**  
Tuncay O., Sedat N., Mustafa A S., Olga S., Ilkem O O., MUTLUGÜN E., Vladimir L., Nikolai G., Alexander E., Sergey V G., et al.  
2010 IEEE Photonic Society's 23rd Annual Meeting, Denver, CO, USA, 7 - 11 November 2010
- XXVIII. **FRET assisted organic dye molecules using in conjunction with colloidal quantum dots for bio labelling**  
MUTLUGÜN E., DEMİR H. V.  
2010 IEEE Photonic Society's 23rd Annual Meeting, Denver, CO, USA, 7 - 11 November 2010
- XXIX. **Light harvesting semiconductor quantum dot nanocrystals integrated on photovoltaic radial junction nanopillars**  
Burak G., MUTLUGÜN E., Xiadong W., Kin Leong P., DEMİR H. V.  
2010 IEEE Photonic Society's 23rd Annual Meeting, Denver, CO, USA, 7 - 11 November 2010
- XXX. **Plasmon enhanced colloidal nanocrystal composites incorporating Au nanoparticles in a repeating layered architecture**  
Tuncay O., Sedat N., Olga S., Ozge H., MUTLUGÜN E., Sergey G., DEMİR H. V.  
2009 IEEE LEOS Annual Meeting Conference Proceedings, Belek-Antalya, Turkey, 4 - 08 October 2009
- XXXI. **Highly efficient FRET based light harvesting using nanocrystals**  
MUTLUGÜN E., Olga S., Tuncay O., Sedat N., DEMİR H. V.  
2009 IEEE LEOS Annual Meeting Conference Proceedings, Belek-Antalya, Turkey, 4 - 08 October 2009
- XXXII. **Architectural tuning of color chromaticity by controlled nonradiative resonance energy transfer in**

### **CdTe nanocrystal solids**

Neslihan C., Sedat N., Tuncay O., MUTLUGÜN E., Durmus Ugur K., Tobias O., Vladimir L., Nikolai G., Alexander E., DEMİR H. V.

2009 IEEE LEOS Annual Meeting Conference Proceedings, Belek-Antalya, Turkey, 4 - 08 October 2009

- XXXIII. **Light harvesting positively charged nanocrystals for strong energy transfer to dye molecules**  
MUTLUGÜN E., DEMİR H. V.

LEOS 2008 - 21st Annual Meeting of the IEEE Lasers and Electro-Optics Society, Newport Beach, CA, USA, 9 - 13 November 2008

- XXXIV. **Surface state emission enhancement in white luminophor CdS nanocrystals using localized plasmon coupling**

Tuncay O., Murat S., Sedat N., Ozge H., MUTLUGÜN E., Sameer S., Nikolai G., Alexander E., DEMİR H. V.

LEOS 2008 - 21st Annual Meeting of the IEEE Lasers and Electro-Optics Society, Newport Beach, CA, USA, 9 - 13 November 2008

- XXXV. **Nanocrystal emitters for enhanced photovoltaics in UV**

MUTLUGÜN E., Ibrahim Murat S., DEMİR H. V.

LEOS 2008 - 21st Annual Meeting of the IEEE Lasers and Electro-Optics Society, Newport Beach, CA, USA, 9 - 13 November 2008

- XXXVI. **Multi material specific targeted self assembly of nanocrystal emitters using genetically engineered peptides on optoelectronic microchips**

Gulis Z., Urartu Ozgur S., Asli K., MUTLUGÜN E., Ozgun A., Emre S., Mehmet S., Candan T., DEMİR H. V.

LEOS 2008 - 21st Annual Meeting of the IEEE Lasers and Electro-Optics Society, Newport Beach, CA, USA, 9 - 13 November 2008

- XXXVII. **Multi layered CdSe ZnS CdSe heteronanocrystals to generate and tune white light**

Sedat N., MUTLUGÜN E., Tuncay O., DEMİR H. V., Sameer S., Nikolai G., Alexander E.

LEOS 2008 - 21st Annual Meeting of the IEEE Lasers and Electro-Optics Society, Newport Beach, CA, USA, 9 - 13 November 2008

- XXXVIII. **White CdS Nanoluminophore based Tunable Hybrid Light Emitting Diodes**

Sedat N., MUTLUGÜN E., Ozgun A., Nihan Kosku P., DEMİR H. V., Lydia L., Sameer S., Nikolai G., Alexander E.

LEOS 2007 - IEEE Lasers and Electro-Optics Society Annual Meeting Conference Proceedings, Lake Buena Vista, FL, USA, 21 - 25 October 2007

- XXXIX. **Localized plasmon engineered spontaneous emission of CdSe ZnS nanocrystals closely packed in the proximity of Ag nanoislands**

Ibrahim Murat S., Sedat N., MUTLUGÜN E., DEMİR H. V.

LEOS 2007 - IEEE Lasers and Electro-Optics Society Annual Meeting Conference Proceedings, Lake Buena Vista, FL, USA, 21 - 25 October 2007

- XL. **High Quality White Light Generation using Dually Hybridized Nanocrystals and Conjugated Polymers**

Sedat N., Tuncay O., MUTLUGÜN E., Ilkem Ozge H., Emre S., Nan T., Elisabeth H., DEMİR H. V.

LEOS 2007 - IEEE Lasers and Electro-Optics Society Annual Meeting Conference Proceedings, Lake Buena Vista, FL, USA, 21 - 25 October 2007

- XLI. **CdSe ZnS core shell nanocrystal based scintillators for enhanced detection in UV**

DEMİR H. V., Ibrahim S., MUTLUGÜN E.

2006 IEEE LEOS Annual Meeting Conference Proceedings, Montreal, QC, Canada, 29 October - 02 November 2006

- XLII. **Size effect in optical activation of TiO<sub>2</sub> nanoparticles in photocatalytic process**

Ibrahim S., MUTLUGÜN E., Sumeyra T., DEMİR H. V., Dilek Y., Gulsen C.

2006 IEEE LEOS Annual Meeting Conference Proceedings, Montreal, QC, Canada, 29 October - 02 November 2006

## **Supported Projects**

Mutlugin E., ERDEM T., TUBITAK Project, İleri Malzeme Yüksek Teknoloji Platformları ile Elektronik ve Optik Bileşen Üretimi için Stratejik Ar-Ge Birliği, 2021 - 2024

Mutlugin E., Company, Kuantum Nokta LED aygıtların geliştirilmesi, 2021 - 2023  
Alan I., Mutlugin E., Usta H., Gencer Akçok E. B., CB Strateji ve Bütçe Başkanlığı (Kalkınma Bakanlığı) Projesi, Merkezi Araştırma Laboratuvarı Projesi, 2014 - 2022  
Mutlugin E., KOSGEB, Ekstrüzyon ile Nanokristalli Ekran Bileşeni Geliştirilmesi, 2020 - 2021  
Mutlugin E., TUBITAK Project, LCD Ekranlar için Nanokristalli Işık Kilavuz Tabakası, 2019 - 2021  
Mutlugin E., TUBITAK Project, Hibrit Kuantum Noktaçık-Nanofiber Esnek Elektrolüminesant Aygitlar, 2017 - 2019  
Mutlugin E., TUBITAK Project, LCD ekranlarda renk zenginleştirme, 2015 - 2017  
Mutlugin E., TUBITAK Project, Esnek Kuantum Noktaçık Tabanlı Platformlarda Üretilen Yenilikçi Organik Işık Saçan Diyotlar, 2014 - 2017

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

TUBITAK, Member of Advisory Board, 2021 - Continues, Turkey

## **Metrics**

Publication: 114  
Citation (WoS): 2111  
Citation (Scopus): 2557  
H-Index (WoS): 28  
H-Index (Scopus): 30

## **Congress and Symposium Activities**

Materials Research Society 2016 Fall Meeting -Polymeric Nanocrystal Sheets for Efficient Lighting and Display Applications, Attendee, United States Of America, 2016  
23rd IEEE Annual Photonics Society Meeting/Light-harvesting semiconductor quantum dot nanocrystals integrated on photovoltaic radial junction nanopillars, Attendee, United States Of America, 2010  
Nanotechnology Days, Invited Speaker, Bursa, Turkey, 2010  
METU Department of Physics, Invited Speaker, Ankara, Turkey, 2009  
Workshop on Nanoelectronics and Nanophotonics, Invited Speaker, Çankırı, Turkey, 2009  
TUBITAK-Helmholtz Association Workshop, Invited Speaker, Kocaeli, Turkey, 2008  
4. Industrial Engineering Summit Meeting (EMSAZ 2008), Invited Speaker, Bursa, Turkey, 2008  
Nanoscience and Nanotechnology Conference (NANOTR IV), Invited Speaker, İstanbul, Turkey, 2008  
Nanotechnology Days, Invited Speaker, Ankara, Turkey, 2007

## **Scholarships**

Graduate Student Award, Other International Organizations, 2010 - Continues

## **Awards**

Mutlugin E., Genç Bilim İnsanı, Bilim Kahramanları Derneği, April 2019  
MUTLUGÜN E., GEBİP, TÜBA, November 2017  
MUTLUGÜN E., Global Young Academy Membership, Global Young Academy, June 2016  
MUTLUGÜN E., The Science Academy Young Scientist Award, BAGEP, June 2014  
MUTLUGÜN E., Outstanding Scientist Award for the research works on the "light generation using quantum dots, FABED,

May 2014

### **Non Academic Experience**

Company, NANOME Nano Teknoloji ArGe Danışmanlık Sanayi ve Ticaret Ltd. Şti. , ArGe