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Education Information

Doctorate, Boston College, Faculty of Arts and Sciences, Physics Department, United States Of America 1984 - 1991
Undergraduate, Hacettepe University, Mühendislik Fakültesi, Fizik Mühendisliği Bölümü, Turkey 1978 - 1982

Dissertations

Doctorate, Energy transfer, Boston College, 1991

Research Areas

Electrical and Electronics Engineering, Energy, Lighting Technology, MEMS, Dielectric Materials and Devices, Lasers and Masers, Optical Materials and Devices, Metallurgical and Materials Engineering, Material science and engineering, Optical Properties, Glass Technology and Glass Ceramics, Thermal Properties, Physics, Condensed Matter 1: Structural, Mechanical and Thermal Properties, Surfaces, Interfaces, Thin Films and Nanosystems, Intensive Article 2: Electronic Structure, Electric, Magnetic and Optical Properties, Optical Properties, Spectroscopy of Matter, Natural Sciences, Engineering and Technology

Academic Titles / Tasks

Professor, Istanbul Technical University, Fen-Edebiyat, Fizik Mühendisliği, 1994 - Continues
Professor, Boston College, Fen- Edebiyat/ , Fizik, 2011 - 2012
Professor, Boston College, Fizik Bölümü, Fizik, 2007 - 2007
Professor, Boston College, Fizik Bölümü, Fizik, 2003 - 2005
Professor, University of Oxford, Fen- Edebiyat/ Inorganik Kimya Lab, Inorganik Kimya Lab, 1996 - 1996

Academic and Administrative Experience

İstanbul Teknik Üniversitesi, Fen-Edebiyat Fakültesi, Fizik Bölümü, 2016 - 2017
İstanbul Teknik Üniversitesi, Fen-Edebiyat Fakültesi, Fizik Bölümü, 2016 - 2017

Courses

OpticsII, Undergraduate, 2017 - 2018
OpticsI, Undergraduate, 2017 - 2018
QUANTUM MECHANİC-1, Undergraduate, 2016 - 2017
graduation project, Undergraduate, 2016 - 2017
QUANTUM MECHANİC-2, Undergraduate, 2015 - 2016
Bitirme tezi, Undergraduate, 2015 - 2016, 2014 - 2015
İler Fizik Proje, Undergraduate, 2015 - 2016
Quantum Mechanics-2-, Undergraduate, 2014 - 2015
İleri Fizk Proje, Undergraduate, 2014 - 2015

Advising Theses

Eryürek G., Synthesis, temperature sensing and white light production properties of the lithiumniobate and tungstenoxide modifed TeO2+Yb2O3+Er2O3 optical glasses, Postgraduate, G.KONCA(Student), 2022
Eryürek G., INVESTIGATION OF SPECTROSCOPIC PROPERTIES AND COLOR PARAMETERS OF TeO2-ZnO-LiNbO3: Yb3+-Er3+ OPTICAL GLASSES, Postgraduate, I.SÜMER(Student), 2022
Eryürek G., Production and characterization of white light based on energy up conversion mechanisms in Yb+3,Nd+3,Tm+3 rare earth ions doped y2o3-sio2 nano-phosphor materials, Doctorate, H.ÇINKAYA(Student), 2019
Eryürek G., Color tunable upconversion based white light properties of er-Tm-Yb phosphors and pmma nanocomposites, Doctorate, S.TABANLI(Student), 2019
Eryürek G., Nd3+ katkılı Y2O3 nano – fosforunun sentezi ve Işıma Özellikleri, Doctorate, G.BİLİR(Student), 2015
Eryürek G., Tellurit camlarda beyaz ışık üretimi ve karakterixasyonu, Postgraduate, A.KAYA(Student), 2014
Eryürek G., Rezonans Atomik Gazlarda Optik Pompalama ve Koherent Etkilerin Araştırılması, Doctorate, E.ŞAHİN(Student), 2014
Eryürek G., Tm2O3 ve Er2O3 Katkılı TeO2-GeO2 cam Malzemelerin Yapısal ve Spektroskopik Özelliklerinin İncelenmesi, Postgraduate, Y.PEPE(Student), 2013
Eryürek G., The Effect of Erbium Ion Concentration on ZnSe Quantum Dot Doped SiO2 Glass, Postgraduate, O.ERGÜZEL(Student), 2013
Eryürek G., Nd3+ katkılı Y2Si3O5 nano – fosforun Üretimi, yapısal, termal ve Lazer Özellikleri, Doctorate, M.ERDEM(Student), 2012
Eryürek G., ZnSe kuvantum noktaları ve Nd3+ ile katkılanmış Silika camlarının sentezi Karakterizasyonu ve Luminesans Özelliklerinin İncelenmesi, Postgraduate, T.ELBOUKHARI(Student), 2012
Eryürek G., TeO2 Esaslı Bazı Lazer Camlarında Tm3+ İyonunun Konsantrasyon Sönümü ile Cam Matrisin Kristallenme Kinetiği, Postgraduate, M.REHA(Student), 2006
Eryürek G., Tellurit optik camlarında Tulyum iyonunun ışıma olasılıklarına kurşunflorürün etkisi, Doctorate, İ.KABALCI(Student), 2006
Eryürek G., He-Ne/I2(633nm) LazerFrekans Kararlılığı ve Mutlak Frekans Ölçümü, Postgraduate, E.ŞAHİN(Student), 2006
Eryürek G., Bridgman Yöntemi ile CsCdBr3 Tek Kristalinin Büyütülmesi ve Optik Özelliklerinin İncelenmesi, Postgraduate, O.YILMAZ(Student), 1998
Eryürek G., La3Lu2GaO12: Cr3+:Nd3+ Lazer Kristalinde Sıcaklığın Cr3+ Nd3+ Enerji Transferine Etkisi., Postgraduate, G.YILDIRIM(Student), 1998

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Investigation of Nd3+:Y2Si2O7Phosphors Using Photoluminescence and Positron Annihilation Lifetime Spectroscopy**
Akay L. N., Kuzeci S., Akti N., Erdem M., TAV C., YAHŞİ U., Eryürek G., Di Bartolo B.
ECS Journal of Solid State Science and Technology, vol.12, no.8, 2023 (SCI-Expanded)

II. **Laser-Induced Tunable White Light Emission in Yb3+/Er3+/Tm3+ Ion-Doped La2Ti2O7**
Cantürk S. B., Tabanli S., ÖRÜCÜ H., GENÇ S., Erdem M., Eryürek G.
ECS Journal of Solid State Science and Technology, vol.12, no.7, 2023 (SCI-Expanded)

III. **Investigation of Up Conversion Emissions of Er3+/Yb3+ Codoped TeO2-B2O3-Nb2O5-ZnO-WO3-TiO2 Glass Systems for Optical Thermometry**
Caner T. F., Sümer I., Doğan A., Erdem M., ESMER K., Eryürek G.
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IV. **Color Tuning and Optical Temperature Sensing Properties of Upconversion Emission in Yb3+/Er3+/Tm3+Doped Boro-Zinctellurite Glasses**
Eryürek G., Tabanli S., Buhari T., Erdem M.
ECS Journal of Solid State Science and Technology, vol.12, no.7, 2023 (SCI-Expanded)

V. **Geared photochemistry: an interdependent heterogeneous near-infrared catalytic system using up-conversion glass and g-CN for CuAAC chemistry**
Kocaarslan A., Sumer I., Esen C., Kumru B., Eryürek G., Yağcı Y.
POLYMER CHEMISTRY, vol.13, no.46, pp.6393-6399, 2022 (SCI-Expanded)

VI. **The effect of crosslinker contents on the up-conversion luminescence properties of CdNb2O6: Er3+ powders embedded in the polyethylmethacrylate (PEMA) networks**
Buhari T., Aktaş D., Erdem M., Eryürek G.
JOURNAL OF LUMINESCENCE, vol.251, 2022 (SCI-Expanded)

VII. **Bright white light up-conversion luminescence from Yb3+/Er3+/Tm3+ tridoped gadolinium gallium garnet nano-crystals for multicolor and white light-emitting diodes**
ÖRÜCÜ H., Tabanlı S., ERDEM M., ÖZTÜRK Y., Eryürek G.
OPTICAL MATERIALS, vol.131, 2022 (SCI-Expanded)

VIII. **Upconversion Yb3+/Er3+:La2Ti2O7 phosphors for solid-state lighting and optical thermometry**
ERDEM M., Canturk S. B., Eryürek G.
SPECTROCHIMICA ACTA PART A-MOLECULAR AND BIOMOLECULAR SPECTROSCOPY, vol.270, 2022 (SCI-Expanded)

IX. **Upconversion luminescence and temperature sensing characteristics of Ho3+/Yb3+ co-doped tellurite glasses**
Dogan A., ERDEM M., ESMER K., Eryürek G.
JOURNAL OF NON-CRYSTALLINE SOLIDS, vol.571, 2021 (SCI-Expanded)

X. **Upconversion Yb3+/Er3+:Gadolinium Gallium Garnet Nanocrystals for White-Light Emission and Optical Thermometry**
ERDEM M., Orucu H., Canturk S. B., Eryurek G.
ACS APPLIED NANO MATERIALS, vol.4, no.7, pp.7162-7171, 2021 (SCI-Expanded)

XI. **Nonlinear optical behavior and optical power limiting characteristics of peripheral symmetrical and non-symmetrical zinc phthalocyanines with nanosecond pulsed excitation**
ERDEM M., Korkmaz E., GÖRK G., Ahmetali E., Farajzadeh N., Eryürek G., Koçak M.
POLYHEDRON, vol.195, 2021 (SCI-Expanded)

XII. **Investigation of spectral output of Er3+ and Yb3+/Er3+ doped TeO2-ZnO-BaO glasses for photonic applications**
Dogan A., Yildirim S. M., ERDEM M., ESMER K., Eryürek G.
NEW JOURNAL OF CHEMISTRY, vol.45, no.8, pp.3790-3799, 2021 (SCI-Expanded)

XIII. **Nonlinear optical properties of peripheral symmetrically and non-symmetrically 4-(trifluoromethoxy)phenoxy substituted zinc phthalocyanines**
Farajzadeh N., GÖRK G., ERDEM M., Eryürek G., Koçak M.
SYNTHETIC METALS, vol.266, 2020 (SCI-Expanded)

XIV. **Enhanced gain bandwidth of Tm3+ and Er3+ doped tellurite glasses for broadband optical amplifier**
Pepe Y., ERDEM M., Sennaroglu A., Eryürek G.
JOURNAL OF NON-CRYSTALLINE SOLIDS, vol.522, 2019 (SCI-Expanded)

XV. **The anomalous luminescent behaviors of the Nd3+/Yb3+ co-doped yttrium silicate at different physical conditions**
Çınkaya Yılmaz H., Eryürek G., Di Bartolo B.
LASER PHYSICS, vol.29, no.6, 2019 (SCI-Expanded)

XVI. **Crystalline phase effect on the up-conversion processes and white emission of Yb3+/Er3+/Tm3+:Y2Si2O7 nanocrystals**
ERDEM M., Tabanlı S., Eryurek G., Samur R., Di Bartolo B.
DALTON TRANSACTIONS, vol.48, no.19, pp.6464-6472, 2019 (SCI-Expanded)

XVII. **Upconversion luminescence properties of Y2O3: Yb3+ /Er3+ /Tm3+ nanocrystal doped PMMA nanocomposites**
Tabanlı S., Eryürek G.
JOURNAL OF NON-CRYSTALLINE SOLIDS, vol.505, pp.43-51, 2019 (SCI-Expanded)

XVIII. **Optical investigation of Er3+ and Er3+/Yb3+ doped zinc-tellurite glass for solid-state lighting and optical thermometry**
Tabanlı S., Eryürek G.
SENSORS AND ACTUATORS A-PHYSICAL, vol.285, pp.448-455, 2019 (SCI-Expanded)

XIX. **Excitation power and Er3 concentration effect on the color quality parameters in Y2O3: Er3/Yb3/Tm3 nanophosphors**
TABANLI S., ERYÜREK G.
Journal Of Nanophotonics, vol.12, 2018 (SCI-Expanded)

XX. **White light emission based on both upconversion and thermal processes from Nd3+ doped yttrium silicate**
Çınkaya Yılmaz H., Eryürek G., Di Bartolo B.
CERAMICS INTERNATIONAL, vol.44, no.4, pp.3541-3547, 2018 (SCI-Expanded)

XXI. **Optical properties and Judd-Ofelt analysis of Nd2O3 nanocrystals embedded in polymethyl methacrylate**
Tabanli S., Bilir G., Eryürek G.
JOURNAL OF RARE EARTHS, vol.36, no.2, pp.170-178, 2018 (SCI-Expanded)

XXII. **Near-Infrared Free-Radical and Free-Radical-Promoted Cationic Photopolymerizations by In-Source Lighting Using Upconverting Glass**
Kocaarslan A., Tabanlı S., Eryürek G., Yağcı Y.
ANGEWANDTE CHEMIE-INTERNATIONAL EDITION, vol.56, no.46, pp.14507-14510, 2017 (SCI-Expanded)

XXIII. **White light emission from Er2O3 nano-powder excited by infrared radiation**
Tabanli S., Eryürek G., DI BARTOLO B.
Optical Materials, vol.69, pp.207-213, 2017 (SCI-Expanded)

XXIV. **Color tunable up-conversion emission from Er3+:Y2O3 nanoparticles embedded in PMMA matrix**
Tabanli S., Bilir G., Eryürek G.
JOURNAL OF LUMINESCENCE, vol.182, pp.146-153, 2017 (SCI-Expanded)

XXV. **Spectral characterization and white light generation by yttrium silicate nanopowders undoped and doped with Ytterbium(III) at different concentrations when excited by a laser diode at 975 nm**
Cinkaya H., ERYUREK G., Bilir G., Collins J., Di Bartolo B.
OPTICAL MATERIALS, vol.63, pp.167-172, 2017 (SCI-Expanded)

XXVI. **Effect of pressure and temperature on the white light produed by Ytterbium (III) doped and undoped Yttrium Silicate nanopowders excited by a laser diode**
Cinkaya H., ERYUREK G., Bilir G., Erdem M., Di Bartolo B.
JOURNAL OF LUMINESCENCE, vol.181, pp.321-326, 2017 (SCI-Expanded)

XXVII. **Spectroscopic investigation of zinc tellurite glasses doped with Yb3+ and Er3+ ions**
Bilir G., KAYA A., CINKAYA H., Eryürek G.

SPECTROCHIMICA ACTA PART A-MOLECULAR AND BIOMOLECULAR SPECTROSCOPY, vol.165, pp.183-190, 2016 (SCI-Expanded)

XXVIII. **Blue cooperative upconversion and white light emission from Y2Si2O7:Yb3+ nanopowders due to 975-nm infrared excitation**
Eryürek G., CINKAYA H., Erdem M., Bilir G.
JOURNAL OF NANOPHOTONICS, vol.10, no.2, 2016 (SCI-Expanded)

XXIX. **The role played by dopant ions for the production of broadband white light emission from metal oxide nano-powders under laser diode excitation**
Bilir G., Eryürek G.
CERAMICS INTERNATIONAL, vol.42, no.5, pp.6065-6071, 2016 (SCI-Expanded)

XXX. **Pressure effects on the cooperative emission of Yb3+ : Y2Si2O7 nano-powders**
Erdem M., Eryürek G., Mergen A., Di Bartolo B.
CERAMICS INTERNATIONAL, vol.42, no.1, pp.1501-1506, 2016 (SCI-Expanded)

XXXI. **Bright white up-conversion emission from sol-gel derived Yb3+/Er3+/Tm3+: Y2SiO5 nanocrystalline powders**
Erdem M., ERGUZEL O., Ekmekci M. K., ÖRÜCÜ H., CINKAYA H., Genc S., Mergen A., Eryürek G., Di Bartolo B.
CERAMICS INTERNATIONAL, vol.41, no.10, pp.12805-12810, 2015 (SCI-Expanded)

XXXII. **Change of spectral output with pressure and white light generation in nanoscale Yb3+:Y2Si2O7**
Erdem M., Eryürek G., Di Bartolo B.
OPTICAL MATERIALS, vol.49, pp.90-93, 2015 (SCI-Expanded)

XXXIII. **White light emission from sol-gel derived gamma-Y2Si2O7 nanoparticles**
Erdem M., Eryürek G., Di Bartolo B.
JOURNAL OF ALLOYS AND COMPOUNDS, vol.639, pp.483-487, 2015 (SCI-Expanded)

XXXIV. **Synthesis and spectral characterization of yttrium oxide nano-powders doped with Nd3+ ions with a large range of concentrations**
Bilir G., OZEN G., Di Bartolo B.
OPTICAL MATERIALS, vol.42, pp.281-286, 2015 (SCI-Expanded)

XXXV. **Thermal and size effect on the R lines luminescence in YAG:Cr3+**
Erdem M., OZEN G., Yahsi U., Di Bartolo B.
JOURNAL OF LUMINESCENCE, vol.158, pp.464-468, 2015 (SCI-Expanded)

XXXVI. **Peculiar effects accompanying the production of white light by IR excited nanoparticles**
Bilir G., OZEN G., Di Bartolo B.
OPTICS AND SPECTROSCOPY, vol.118, no.1, pp.131-134, 2015 (SCI-Expanded)

XXXVII. **Concentration effect of Er3+ ions on structural and spectroscopic properties of CdNb2O6 phosphors**
Ghafouri S. A., Erdem M., Ekmekci M. K., Mergen A., OZEN G.
MATERIALS RESEARCH BULLETIN, vol.60, pp.562-565, 2014 (SCI-Expanded)

XXXVIII. **Unconventional Production of Bright White Light Emission by Nd-Doped and Nominally Un-Doped Y2O3 Nano-Powders**
Bilir G., OZEN G., Collins J., CESARIA M., Di Bartolo B.
IEEE PHOTONICS JOURNAL, vol.6, no.4, 2014 (SCI-Expanded)

XXXIX. **Broadband Visible Light Emission From Nominally Undoped and Cr3+ Doped Garnet Nanopowders**
Bilir G., OZEN G., BETTINELLI M., PICCINELLI F., CESARIA M., Di Bartolo B.
IEEE PHOTONICS JOURNAL, vol.6, no.4, 2014 (SCI-Expanded)

XL. **Biopolymer-assisted synthesis of yttrium oxide nanoparticles**
Kaygusuz H., BILIR G., TEZCAN F., ERIM F. B., OZEN G.
PARTICUOLOGY, vol.14, pp.19-23, 2014 (SCI-Expanded)

XLI. **Molten salt synthesis and spectral properties of Nd3+ doped CdNb2O6 columbite phosphors**
Ekmekci M. K., Erdem M., Mergen A., OZEN G., Di Bartolo B.
JOURNAL OF ALLOYS AND COMPOUNDS, vol.591, pp.230-233, 2014 (SCI-Expanded)

XLII. **Fabrication and spectral investigation of Y2O3:Nd3+ nanoparticles**

Bilir G., OZEN G., Collins J., Di Bartolo B.
APPLIED PHYSICS A-MATERIALS SCIENCE & PROCESSING, vol.115, no.1, pp.263-273, 2014 (SCI-Expanded)

XLIII. **Coherent population trapping resonances at lower atomic levels of Doppler broadened optical lines**
Sahin E., OZEN G., HAMID R., CELIK M., IZMAILOV A. C.
QUANTUM ELECTRONICS, vol.44, no.11, pp.1071-1076, 2014 (SCI-Expanded)

XLIV. **Effect of spatial confinement on luminescence of Y3Al5O12 nano-particles doped with chromium ions**
Ozen G., Erdem M., Collins J., BETTINELLI M., Di Bartolo B., PICCINELLI F., SPEGHINI A.
JOURNAL OF LUMINESCENCE, vol.144, pp.191-197, 2013 (SCI-Expanded)

XLV. **Structural and spectroscopic properties of Nd3+:Y2Si2O7 phosphors**
Erdem M., OZEN G., Tav C., Di Bartolo B.
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XLVI. **Luminescence of Y(3)AL(5)O(12) nano-particles doped with praseodymium ions**
Ozen G., Collins J., BETTINELLI M., Di Bartolo B.
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XLVII. **High contrast resonances of the coherent population trapping on sublevels of the ground atomic term**
Sahin E., HAMID R., BIRLIKSEVEN C., OZEN G., IZMAILOV A. C.
LASER PHYSICS, vol.22, no.6, pp.1038-1042, 2012 (SCI-Expanded)

XLVIII. **Biocomposite films based on alginate and organically modified clay**
Tezcan F., GUNISTER E., OZEN G., ERIM F. B.
INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES, vol.50, no.4, pp.1165-1168, 2012 (SCI-Expanded)

XLIX. **Effects of CdF2 and WO3 additions on the microstructural and thermal properties of TeO2-CdF2-WO3 glass system**
Tatar D., Öveçoğlu M. L., OZEN G.
CERAMICS INTERNATIONAL, vol.38, no.3, pp.1927-1935, 2012 (SCI-Expanded)

L. **Characterization of emission properties of Er3+ ions in TeO2-CdF2-WO3 glasses**
Bilir G., MUSTAFAOGLU N., OZEN G., DiBartolo B.
SPECTROCHIMICA ACTA PART A-MOLECULAR AND BIOMOLECULAR SPECTROSCOPY, vol.83, no.1, pp.314-321, 2011 (SCI-Expanded)

LI. **Optical absorption and emission properties of Nd3+ in TeO2-WO3 and TeO2-WO3-CdO glasses**
Bilir G., OZEN G.
PHYSICA B-CONDENSED MATTER, vol.406, no.21, pp.4007-4013, 2011 (SCI-Expanded)

LII. **Crystallization behaviour of neodymium doped yttrium silicate nanophosphors**
Erdem M., OZEN G., Tav C.
JOURNAL OF THE EUROPEAN CERAMIC SOCIETY, vol.31, no.14, pp.2629-2631, 2011 (SCI-Expanded)

LIII. **Electronic energy levels of CsCdCl3**
Demirbilek R., BOZDOĞAN A., ÇALIŞKAN M., Asan G., OZEN G.
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LIV. **Electronic energy levels of RbCdBr3 crystal**
Demirbilek R., BOZDOGAN A. C., CALSKAN M., OZEN G.
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LV. **Judd-Ofelt analysis and near infrared emission properties of the Er3+ ions in tellurite glasses containing WO3 and CdO**
Bilir G., OZEN G., TATAR D., Öveçoğlu M. L.
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LVI. **Raman characterizations and structural properties of the binary TeO2-WO3. TeO2-CdF2 and ternary TeO2-CdF2-WO3 glasses**
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LVII. **Microstructural characterization and crystallization kinetics of (1-x)TeO2-0.10CdF(2)-xPbF(2)**

(x=0.05, 0.10, and 0.15 mol) glasses
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LVIII. **Microstructure and crystallization properties of TeO2-PbF2 glasses**
Kabalci I., OEZEN G., OEVECOGLU M. L.
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LX. **Lasing at 1065 nm in bulk Nd3+-doped telluride-tungstate glass**
Kalaycioglu H., Cankaya H., OZEN G., OVECOGLU L., Sennaroglu A.
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