

# Prof. ÖZLEM YEŞİLTAŞ

## Personal Information

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## International Researcher IDs

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## Education Information

Doctorate, Gazi University, Fen Bilimleri Enstitüsü, Fizik (Dr), Turkey 1999 - 2004

Postgraduate, Gazi University, Fen Bilimleri Enstitüsü, Fizik (YI) (Tezli), Turkey 1996 - 1999

Undergraduate, Gazi University, Fen-Edebiyat Fakültesi, Fizik Pr., Turkey 1992 - 1996

## Foreign Languages

English, B2 Upper Intermediate

## Research Areas

Mathematics, Physics, Natural Sciences

## Academic Titles / Tasks

Professor, Gazi University, Fen Fakültesi, Fizik, 2018 - Continues

Associate Professor, Gazi University, Fen Fakültesi, Fizik Bölümü, 2012 - 2018

Assistant Professor, Gazi University, Fen Fakültesi, Fizik Bölümü, 2007 - 2012

Research Assistant, Gazi University, Fen Fakültesi, Fizik Bölümü, 1997 - 2005

## Academic and Administrative Experience

Gazi University, Fen Fakültesi, 2016 - 2017

Deputy Head of Department, Gazi University, Fen Fakültesi, 2014 - 2017

## Courses

Mathematical Methods in Physics, Postgraduate, 2020 - 2021

General Relativity, Postgraduate, 2020 - 2021

İleri Kuantum Mekaniği 2, Doctorate, 2017 - 2018  
5011302 İLERİ KUANTUM MEKANIĞI I, Postgraduate, 2017 - 2018  
İleri Kuantum Mekaniği, Postgraduate, 2016 - 2017  
Physics I, Undergraduate, 2016 - 2017

## Advising Theses

YEŞİLTAS Ö., Dirac Equations In Curvilinear Coordinates In (2+1) Dimensions, Postgraduate, A.YILMAZ(Student), 2018  
YEŞİLTAS Ö., Einsteins Field Equations Solutions, Postgraduate, G.GÜZEL(Student), 2018  
YEŞİLTAS Ö., Graphene Models In Relativistic Quantum Mechanics, Postgraduate, K.DURMUŞ(Student), 2015  
YEŞİLTAS Ö., Hermitian and non-hermitian operators, Postgraduate, N.KAPLAN(Student), 2013  
YEŞİLTAS Ö., The applications and the theory of quantum Hamiltonen Jacobi, Postgraduate, A.FERHAT(Student), 2009

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

- I. **Pseudo-Hermitian Dirac operator on the torus for massless fermions under the action of external fields**  
Yeşiltaş Ö., Furtado J.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol.37, no.11(12), pp.1-15, 2022 (SCI-Expanded)
- II. **Dirac equation on a catenoid bridge: a supersymmetric approach**  
Yeşiltaş Ö.  
European Physical Journal Plus, vol.137, pp.1-12, 2022 (SCI-Expanded)
- III. **Spin and pseudospin symmetries in radial Dirac equation and exceptional hermite polynomials**  
Yeşiltaş Ö., Özcan A.  
European Physical Journal Plus, vol.136, pp.1035-1047, 2021 (SCI-Expanded)
- IV. **The Extension of the Massless Fermion Behaviour in the Cosmic String Spacetime**  
Cagatay B., YEŞİLTAS Ö., Aygun A. L.  
ADVANCES IN HIGH ENERGY PHYSICS, vol.2020, 2020 (SCI-Expanded)
- V. **Second-order confluent supersymmetric approach to the Dirac equation in the cosmic string spacetime**  
YEŞİLTAS Ö.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.135, no.2, 2020 (SCI-Expanded)
- VI. **Dirac equation in the curved spacetime and generalized uncertainty principle: A fundamental quantum mechanical approach with energy-dependent potentials**  
YEŞİLTAS Ö.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.134, no.7, 2019 (SCI-Expanded)
- VII. **Generalized Schrodinger equations with energy-dependent potentials: Formalism and applications**  
Schulze-Halberg A., YEŞİLTAS Ö.  
JOURNAL OF MATHEMATICAL PHYSICS, vol.59, no.11, 2018 (SCI-Expanded)
- VIII. **The massless Dirac-Weyl equation with deformed extended complex potentials**  
YEŞİLTAS Ö., Cagatay B.  
CANADIAN JOURNAL OF PHYSICS, vol.96, no.7, pp.770-773, 2018 (SCI-Expanded)
- IX. **The generalized confluent supersymmetry algorithm: Representations and integral formulas**  
Schulze-Halberg A., YEŞİLTAS Ö.  
JOURNAL OF MATHEMATICAL PHYSICS, vol.59, no.4, 2018 (SCI-Expanded)
- X. **Rationally extended potentials and X-m-Jacobi-type solutions of the two-dimensional massless Dirac equation**  
Schulze-Halberg A., YEŞİLTAS Ö.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.133, no.1, 2018 (SCI-Expanded)

- XI. **Dirac Equation on the Torus and Rationally Extended Trigonometric Potentials within Supersymmetric QM**  
YEŞİLTAŞ Ö.  
ADVANCES IN HIGH ENERGY PHYSICS, vol.2018, 2018 (SCI-Expanded)
- XII. **Position-dependent mass approach and quantization for a torus Lagrangian**  
YEŞİLTAŞ Ö.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.131, no.9, 2016 (SCI-Expanded)
- XIII. **SU(1,1) solutions for the relativistic quantum particle in cosmic string spacetime**  
Yesiltas Ö.  
EUROPEAN PHYSICAL JOURNAL PLUS, vol.130, no.7, 2015 (SCI-Expanded)
- XIV. **Non-Hermitian Dirac Hamiltonian in Three-Dimensional Gravity and Pseudosupersymmetry**  
YEŞİLTAŞ Ö.  
ADVANCES IN HIGH ENERGY PHYSICS, vol.2015, 2015 (SCI-Expanded)
- XV. **Supersymmetric analysis of the Dirac-Weyl operator within PT symmetry**  
Yesiltas Ö.  
JOURNAL OF MATHEMATICAL PHYSICS, vol.55, no.8, 2014 (SCI-Expanded)
- XVI. **Exact Solutions of the Dirac Hamiltonian on the Sphere under Hyperbolic Magnetic Fields**  
Yesiltas Ö.  
ADVANCES IN HIGH ENERGY PHYSICS, vol.2014, 2014 (SCI-Expanded)
- XVII. **CPT symmetry in honeycomb lattices and quantum brachistochrone problem**  
Yesiltas Ö.  
CENTRAL EUROPEAN JOURNAL OF PHYSICS, vol.11, no.12, pp.1674-1679, 2013 (SCI-Expanded)
- XVIII. **Metric operator for the non-Hermitian Hamiltonian model and pseudo-super-symmetry**  
YEŞİLTAŞ Ö., Kaplan N.  
PHYSICA SCRIPTA, vol.87, no.4, 2013 (SCI-Expanded)
- XIX. **PT symmetric Hamiltonian model and Dirac equation in 1+1 dimensions**  
Yesiltas Ö.  
JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL, vol.46, no.1, 2013 (SCI-Expanded)
- XX. **su(1,1) similar or equal to so(2,1) Lie algebraic extensions of the Mie-type interactions with positive constant curvature**  
Yesiltas Ö.  
PHYSICS LETTERS A, vol.377, pp.49-52, 2012 (SCI-Expanded)
- XXI. **Quantum isotonic nonlinear oscillator as a Hermitian counterpart of Swanson Hamiltonian and pseudo-supersymmetry**  
Yesiltas Ö.  
JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL, vol.44, no.30, 2011 (SCI-Expanded)
- XXII. **Study of the Generalized Quantum Isotonic Nonlinear Oscillator Potential**  
Saad N., Hall R. L., ÇİFTÇİ H., YEŞİLTAŞ Ö.  
ADVANCES IN MATHEMATICAL PHYSICS, vol.2011, 2011 (SCI-Expanded)
- XXIII. **Generalized quantum isotonic nonlinear oscillator in d dimensions**  
Hall R. L., Saad N., YEŞİLTAŞ Ö.  
JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL, vol.43, no.46, 2010 (SCI-Expanded)
- XXIV. **SUPERSYMMETRIC ANALYSIS FOR THE DIRAC EQUATION WITH SPIN-SYMMETRIC AND PSEUDO-SPIN-SYMMETRIC INTERACTIONS**  
Hall R. L., Yesiltas Ö.  
INTERNATIONAL JOURNAL OF MODERN PHYSICS E-NUCLEAR PHYSICS, vol.19, no.10, pp.1923-1934, 2010 (SCI-Expanded)
- XXV. **Comparison theorems for the Dirac equation with spin-symmetric and pseudo-spin-symmetric interactions**  
Hall R. L., Yesiltas Ö.  
JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL, vol.43, no.19, 2010 (SCI-Expanded)

- XXVI. **The quantum effective mass Hamilton-Jacobi problem**  
Yesiltas Ö.  
JOURNAL OF PHYSICS A-MATHEMATICAL AND THEORETICAL, vol.43, no.9, 2010 (SCI-Expanded)
- XXVII. **Factorization and Lie point symmetries of general Lienard-type equation in the complex plane**  
Yesiltas Ö.  
PHYSICA SCRIPTA, vol.80, no.5, 2009 (SCI-Expanded)
- XXVIII. **Exact solution of effective mass Schrodinger equation for the Hulthen potential**  
Sever R., TEZCAN C., Yesiltas Ö., Bucurgat M.  
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, vol.47, no.9, pp.2243-2248, 2008 (SCI-Expanded)
- XXIX. **Solutions of two-mode bosonic and transformed Hamiltonians**  
Ocak S., Yesiltas Ö., Demircioglu B.  
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, vol.47, no.7, pp.1865-1876, 2008 (SCI-Expanded)
- XXX. **A new approach to the exact solutions of the effective mass Schrodinger equation**  
TEZCAN C., Sever R., Yesiltas Ö.  
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, vol.47, no.6, pp.1713-1721, 2008 (SCI-Expanded)
- XXXI. **Quantum Hamilton-Jacobi approach to two dimensional singular oscillator**  
Yesiltas Ö., Demircioglu B.  
CHINESE PHYSICS LETTERS, vol.25, no.6, pp.1935-1938, 2008 (SCI-Expanded)
- XXXII. **Solutions of three-dimensional separable non-central potential**  
Yesiltas Ö.  
CHINESE PHYSICS LETTERS, vol.25, no.4, pp.1172-1174, 2008 (SCI-Expanded)
- XXXIII. **Exponential type complex and non-Hermitian potentials within quantum Hamilton-Jacobi formalism**  
Yesiltas Ö., Sever R.  
JOURNAL OF MATHEMATICAL CHEMISTRY, vol.43, no.3, pp.921-931, 2008 (SCI-Expanded)
- XXXIV. **Exact solution of Schrodinger equation for Pseudoharmonic potential**  
Sever R., TEZCAN C., Aktas M., Yesiltas Ö.  
JOURNAL OF MATHEMATICAL CHEMISTRY, vol.43, no.2, pp.845-851, 2008 (SCI-Expanded)
- XXXV. **Bound state solution of the Schrodinger equation for Mie potential**  
Sever R., Bucurgat M., Tezcan C., Yesiltas Ö.  
JOURNAL OF MATHEMATICAL CHEMISTRY, vol.43, no.2, pp.749-755, 2008 (SCI-Expanded)
- XXXVI. **The generalized PT-symmetric Sinh-Gordon potential solvable within quantum Hamilton-Jacobi formalism**  
YEŞİLTAŞ Ö., Ocak S.  
INTERNATIONAL JOURNAL OF THEORETICAL PHYSICS, vol.47, no.2, pp.415-420, 2008 (SCI-Expanded)
- XXXVII. **PT/non-PT symmetric and non-Hermitian Poschl-Teller-like solvable potentials via Nikiforov-Uvarov method**  
Yesiltas Ö.  
PHYSICA SCRIPTA, vol.75, no.1, pp.41-46, 2007 (SCI-Expanded)
- XXXVIII. **Exponential type complex and non-Hermitian potentials in PT-symmetric quantum mechanics**  
Yesiltas Ö., Simsek M., Sever R., Tezcan C.  
PHYSICA SCRIPTA, vol.67, no.6, pp.472-475, 2003 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Non-PT Symmetric Potentials and (1**  
YEŞİLTAŞ Ö.  
GAZI UNIVERSITY JOURNAL OF SCIENCE, vol.28, no.4, pp.571-575, 2015 (ESCI)

## Refereed Congress / Symposium Publications in Proceedings

- I. **Pseudo-Hermitian Dirac Operator On the Torus For The Massless Fermions**  
Yeşiltaş Ö.  
Pseudo-Hermitian Hamiltonians in Quantum Physics, 01 January 2021
- II. **N = 2 Supersymmetric Quantum Mechanics Algebra And Cosmic Strings**  
YEŞİLTAŞ Ö.  
Analytic and algebraic methods in physics XVI September 10 - 13, 2019, Prague Czech Technical University Prague, Prag, Czech Republic, 10 - 13 September 2019
- III. **Kuantum Mekanikinde Yüksek Mertebeden Süpersimetrik Yaklaşımlar ve Darboux Dönüşümleri**  
Yeşiltaş Ö.  
14. Ankara Matematik Günleri, Ankara, Turkey, 28 - 29 June 2019
- IV. **Higher Order Supersymmetric Models in Quantum Mechanics**  
YEŞİLTAŞ Ö.  
2nd EMU Physics Days, famagusta, 21 - 22 March 2019
- V. **2 1 boyutta Dirac Denklemi ve Kanonik Nokta Dönüşümleri**  
durmuş k., YEŞİLTAŞ Ö.  
Yoğun Madde Fiziği – Ankara Toplantısı, Bilkent Üniversitesi, 20 Aralık 2013, Ankara, Turkey, 20 - 22 December 2013
- VI. **2 1 Boyutta Dirac Denklemine Süper simetrik Kuantum Mekanik Yöntemleri ile İncelenmesi**  
nayı ş., YEŞİLTAŞ Ö.  
Yoğun Madde Fiziği – Ankara Toplantısı, Bilkent Üniversitesi, 20 Aralık 2013 P35, Turkey, 20 - 22 December 2013
- VII. **Electron Moving in Curved Graphene**  
YEŞİLTAŞ Ö.  
Türk Fizik Derneği 30. Uluslararası Fizik Kongresi, İstanbul, Eylül 2013, İstanbul, Turkey, 2 - 05 September 2013
- VIII. **PT Symmetric Hamiltonian Model and Exactly Solvable Potentials**  
Yesiltas Ö.  
1st International Conference on Mathematical Modelling in Physical Sciences (IC-MSQUARE), Budapest, Hungary, 3 - 07 September 2012, vol.410
- IX. **İndirgenmiş Van Der Pol Osilatörünün Çoklu Birim Analizi İle Çözümleri**  
YEŞİLTAŞ Ö., ŞİMŞEK M.  
Türk Fizik Derneği 22. Fizik Kongresi Bodrum, Turkey, 13 - 15 September 2004
- X. **Geometrik Sınır Değer Problemi ve Korteweg de Vries Denklemi**  
YEŞİLTAŞ Ö., ŞİMŞEK M.  
Türk Fizik Derneği 21. Fizik Kongresi Isparta, Turkey, 11 - 14 September 2002

## Metrics

Publication: 52

Citation (WoS): 316

Citation (Scopus): 312

H-Index (WoS): 10

H-Index (Scopus): 10

## Congress and Symposium Activities

virtual seminar series on Pseudo-Hermitian Hamiltonians in Quantum Physics, Invited Speaker, Ankara, Turkey, 2021