



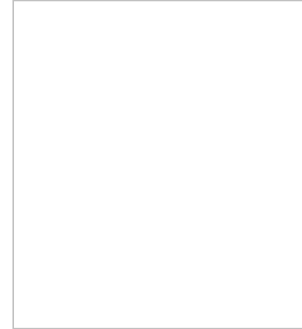
# MUSTAFA KEMAL BAHAR

## PROF. DR.

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### Öğrenim Bilgisi

Doktora  
2010 - 2014

Erciyes Üniversitesi, Fen Bilimleri Enstitüsü, Türkiye

Yüksek Lisans  
2004 - 2007

Sivas Cumhuriyet Üniversitesi, Fen Bilimleri Enstitüsü, Fen Bilimleri Enstitüsü,  
Türkiye

Lisans  
1999 - 2004

Ege Üniversitesi, Fen Fakültesi, Fizik Bölümü, Türkiye

### Yaptığı Tezler

Doktora, Etkin kütleli ve relativistik spin 1/2-1-0 parçacıklarının farklı potansiyel etkileşimleri, Erciyes Üniversitesi, Fen Bilimleri Enstitüsü, 2014

Yüksek Lisans, P-tipi delta katkılı GaAs yapıların elektronik özellikleri, Sivas Cumhuriyet Üniversitesi, Fen Bilimleri Enstitüsü, Fen Bilimleri Enstitüsü, 2007

### Akademik Unvanlar / Görevler

Prof. Dr.  
2024 - Devam Ediyor

Sivas Cumhuriyet Üniversitesi, Fen Fakültesi, Fizik Bölümü

Doç. Dr.  
2019 - 2024

Sivas Cumhuriyet Üniversitesi, Fen Fakültesi, Fizik Bölümü

Doç. Dr.  
2019 - 2019

Karamanoğlu Mehmetbey Üniversitesi, Mühendislik Fakültesi, Enerji Sistemleri  
Mühendisliği Bölümü

Yrd. Doç. Dr.  
2015 - 2019

Karamanoğlu Mehmetbey Üniversitesi, Mühendislik Fakültesi, Enerji Sistemleri  
Mühendisliği Bölümü

Araştırma Görevlisi  
2010 - 2014

Erciyes Üniversitesi, Fen Fakültesi, Fizik

Araştırma Görevlisi  
2009 - 2010

Karamanoğlu Mehmetbey Üniversitesi, Kamil Özdağ Fen Fakültesi, Fizik Bölümü

## Desteklenen Projeler

1. Bahar M. K., TÜBİTAK Projesi, İki elektronlu kuantum noktalarının enerjilerine plazma ortamının, elektrik, manyetik, lazer alanlarının ve hız-bağımlı potansiyelin etkilerinin incelenmesi, 2017 - 2018

## SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayımlanan Makaleler

1. **Persistent currents of ultrarelativistic plasma-encased endofullerene molecules entrapping a H atom**  
BAHAR M. K.  
Communications in Theoretical Physics, cilt.76, sa.6, 2024 (SCI-Expanded)
2. **Photoionization treatment of encompassed plasma-implanted exotic atoms**  
BAHAR M. K.  
European Physical Journal Plus, cilt.139, sa.5, 2024 (SCI-Expanded)
3. **Radiative dynamics of laser-driven Li@Cn embedded in quantum plasma**  
BAHAR M. K.  
Physica Scripta, cilt.99, sa.3, 2024 (SCI-Expanded)
4. **Photoionization process of energy-dependent excited He atom trapped inside endofullerene molecules encased in a quantum plasma**  
BAHAR M. K.  
European Physical Journal D, cilt.78, sa.2, 2024 (SCI-Expanded)
5. **Combined effects of thermodynamic factors and external fields for nonlinear optical processes of deformed Mathieu quantum dot containing central impurity**  
BAHAR M. K., BAŞER P.  
Physics Letters, Section A: General, Atomic and Solid State Physics, cilt.483, 2023 (SCI-Expanded)
6. **The second, third harmonic generations and nonlinear optical rectification of the Mathieu quantum dot with the external electric, magnetic and laser field**  
BAHAR M. K., BAŞER P.  
Physica B: Condensed Matter, cilt.665, 2023 (SCI-Expanded)
7. **Photoionization Cross Section for H@Cn<sub>n</sub> Implanted in Nonideal Classical Plasmas**  
BAHAR M. K., Martínez-Flores C.  
Annalen der Physik, cilt.535, sa.9, 2023 (SCI-Expanded)
8. **Nonlinear optical specifications of the Mathieu quantum dot with screw dislocation**  
BAHAR M. K., BAŞER P.  
European Physical Journal Plus, cilt.138, sa.8, 2023 (SCI-Expanded)
9. **Tuning of nonlinear optical characteristics of Mathieu quantum dot by laser and electric field**  
BAHAR M. K., Baser P.  
EUROPEAN PHYSICAL JOURNAL PLUS, cilt.137, sa.10, 2022 (SCI-Expanded)

10. **Generation of adiabatic pulses**  
Lumb S., Talwar S. L., BAHAR M. K., Prasad V.  
Physica E: Low-Dimensional Systems and Nanostructures, cilt.144, 2022 (SCI-Expanded)
11. **Nonlinear optical characteristics of thermodynamic effects- and electric field-triggered Mathieu quantum dot**  
BAHAR M. K., BAŞER P.  
MICRO AND NANOSTRUCTURES, cilt.170, 2022 (SCI-Expanded)
12. **Charge-current generations and optical specifications of Gaussian quantum dot with energy-dependent potential**  
BAHAR M. K.  
CHEMICAL PHYSICS LETTERS, cilt.802, 2022 (SCI-Expanded)
13. **Li@C-n immersed in nonideal classical plasmas**  
BAHAR M. K.  
EUROPEAN PHYSICAL JOURNAL PLUS, cilt.137, sa.9, 2022 (SCI-Expanded)
14. **Evaluation of the external electric- and magnetic field-driven Mathieu quantum dot's optical observables**  
BAŞER P., BAHAR M. K.  
PHYSICA B-CONDENSED MATTER, cilt.639, 2022 (SCI-Expanded)
15. **Manipulating the orbital charge-currents of compressed Li and Na atom embedded in quantum plasma**  
BAHAR M. K.  
CHEMICAL PHYSICS, cilt.557, 2022 (SCI-Expanded)
16. **Relativistic treatments of quantum plasma-immersed Li, Na, K atoms**  
BAHAR M. K.  
EUROPEAN PHYSICAL JOURNAL PLUS, cilt.137, sa.4, 2022 (SCI-Expanded)
17. **Charge-Current Output in Plasma-Immersed Hydrogen Atom with Noncentral Interaction**  
BAHAR M. K.  
ANNALEN DER PHYSIK, cilt.533, sa.11, 2021 (SCI-Expanded)
18. **Plasma-embedded positronium atom with energy-dependent potential**  
BAHAR M. K.  
EUROPEAN PHYSICAL JOURNAL PLUS, cilt.136, sa.11, 2021 (SCI-Expanded)
19. **Effect of intense laser and electric fields on nonlinear optical properties of cylindrical quantum dot with Morse potential**  
UNGAN F., BAHAR M. K., Barseghyan M. G., Perez L. M., Laroze D.  
OPTIK, cilt.236, 2021 (SCI-Expanded)
20. **Optical response of plasma processed quantum dot under the external fields**  
Kilic K., BAHAR M. K.  
INTERNATIONAL JOURNAL OF QUANTUM CHEMISTRY, cilt.121, sa.7, 2021 (SCI-Expanded)
21. **Optical properties of a triple AlGaAs/GaAs quantum well purported for quantum cascade laser active region**  
BAHAR M. K., Rodriguez-Magdaleno K. A., Martinez-Orozco J. C., Mora-Ramos M. E., Ungan F.  
MATERIALS TODAY COMMUNICATIONS, cilt.26, 2021 (SCI-Expanded)
22. **Influence of applied external fields on the nonlinear optical properties of a semi-infinite asymmetric Al<sub>x</sub>Ga<sub>1-x</sub>As/GaAs quantum well**  
Ungan F., BAHAR M. K., Rodriguez-Magdaleno A., Mora-Ramos M. E., Martinez-Orozco J. C.  
MATERIALS SCIENCE IN SEMICONDUCTOR PROCESSING, cilt.123, 2021 (SCI-Expanded)
23. **Optical analysis of quantum dot with velocity-dependent potential**  
BAHAR M. K., Ungan F., Kaya H., AKKOYUN S.  
INTERNATIONAL JOURNAL OF QUANTUM CHEMISTRY, cilt.121, sa.5, 2021 (SCI-Expanded)
24. **Optical responses in asymmetric hyperbolic-type quantum wells under the effect of external electromagnetic fields**

- Ungan F., Bahar M. K., Martinez-Orozco J., Mora-Ramos M.  
Photonics and Nanostructures - Fundamentals and Applications, cilt.41, 2020 (SCI-Expanded)
25. **Electron-related nonlinear optical properties of cylindrical quantum dot with the Rosen-Morse axial potential**  
Ungan F., Bahar M. K., Pal S., Mora-Ramos M. E.  
COMMUNICATIONS IN THEORETICAL PHYSICS, cilt.72, sa.7, 2020 (SCI-Expanded)
26. **The laser field controlling on the nonlinear optical specifications of the electric field-triggered Rosen-Morse quantum well**  
Ungan F., Bahar M. K.  
PHYSICS LETTERS A, cilt.384, sa.19, 2020 (SCI-Expanded)
27. **Optical properties of n-type asymmetric triple delta-doped quantum well under external fields**  
Ungan F., Bahar M. K., Mora-Ramos M. E.  
PHYSICA SCRIPTA, cilt.95, sa.5, 2020 (SCI-Expanded)
28. **Magneto-optical specifications of Rosen-Morse quantum dot with screw dislocation**  
Bahar M. K., Ungan F.  
INTERNATIONAL JOURNAL OF QUANTUM CHEMISTRY, cilt.120, sa.11, 2020 (SCI-Expanded)
29. **Generalized potential for confined positronium atom immersed in plasmas**  
Bahar M. K., Soylu A.  
CHEMICAL PHYSICS, cilt.530, 2020 (SCI-Expanded)
30. **The optimal ranges for the optical properties of two-electron quantum dot immersed in plasmas**  
Bahar M. K., UNGAN F., Soylu A.  
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, cilt.114, 2019 (SCI-Expanded)
31. **Nonlinear optical properties of morse quantum well modulated by THz laser fields**  
UNGAN F., Pal S., Bahar M. K., Mora-Ramos M. E.  
PHYSICA E-LOW-DIMENSIONAL SYSTEMS & NANOSTRUCTURES, cilt.113, ss.86-91, 2019 (SCI-Expanded)
32. **The functionality of the external electric and magnetic field on optical specifications of Rosen-Morse quantum well**  
Ungan F., Bahar M. K.  
PHYSICA SCRIPTA, cilt.94, sa.8, 2019 (SCI-Expanded)
33. **Computation of the nonlinear optical properties of n-type asymmetric triple delta-doped GaAs quantum well**  
Ungan F., Pal S., Bahar M. K., Mora-Ramos M. E.  
SUPERLATTICES AND MICROSTRUCTURES, cilt.130, ss.76-86, 2019 (SCI-Expanded)
34. **Velocity dependent potential effects on two-electron quantum dot in plasmas**  
Bahar M. K., Soylu A.  
PHYSICS OF PLASMAS, cilt.26, sa.6, 2019 (SCI-Expanded)
35. **Optical specifications of laser-induced Rosen-Morse quantum well**  
UNGAN F., Bahar M. K.  
OPTICAL MATERIALS, cilt.90, ss.231-237, 2019 (SCI-Expanded)
36. **Two-Electron Pseudodot System With Laser Effect in Plasmas**  
Bahar M. K., Soylu A.  
IEEE TRANSACTIONS ON PLASMA SCIENCE, cilt.47, sa.4, ss.1713-1725, 2019 (SCI-Expanded)
37. **Analysis of the anomalous electromagnetic moments of the tau lepton in gamma p collisions at the LHC**  
Koksal M., Inan S. C., Billur A. A., Ozguven Y., Bahar M. K.  
PHYSICS LETTERS B, cilt.783, ss.375-380, 2018 (SCI-Expanded)
38. **Laser-driven two-electron quantum dot in plasmas**  
Bahar M. K., Soylu A.  
PHYSICS OF PLASMAS, cilt.25, sa.6, 2018 (SCI-Expanded)
39. **Confinement control mechanism for two-electron Hulthen quantum dots in plasmas**  
Bahar M. K., Soylu A.

- JOURNAL OF PHYSICS B-ATOMIC MOLECULAR AND OPTICAL PHYSICS, cilt.51, sa.10, 2018 (SCI-Expanded)
40. **Two-electrons quantum dot in plasmas under the external fields**  
Bahar M. K., Soylu A.  
PHYSICS OF PLASMAS, cilt.25, sa.2, 2018 (SCI-Expanded)
  41. **Search for the anomalous electromagnetic moments of tau lepton through electron-photon scattering at CLIC**  
Ozguven Y., Billur A. A., Inan S. C., Bahar M. K., Koksall M.  
NUCLEAR PHYSICS B, cilt.923, ss.475-490, 2017 (SCI-Expanded)
  42. **The nuclear size and mass effects on muonic hydrogen-like atoms embedded in Debye plasma**  
Poszwa A., Bahar M. K., Soylu A.  
PHYSICS OF PLASMAS, cilt.23, sa.10, 2016 (SCI-Expanded)
  43. **The Hulthen Potential Model for Hydrogen Atoms in Debye Plasma**  
Bahar M. K., Soylu A., Poszwa A.  
IEEE TRANSACTIONS ON PLASMA SCIENCE, cilt.44, sa.10, ss.2297-2306, 2016 (SCI-Expanded)
  44. **Probe of hydrogen atom in plasmas with magnetic, electric, and Aharonov-Bohm flux fields**  
Bahar M. K., Soylu A.  
PHYSICS OF PLASMAS, cilt.23, sa.9, 2016 (SCI-Expanded)
  45. **Effects of laser radiation field on energies of hydrogen atom in plasmas**  
Bahar M. K.  
PHYSICS OF PLASMAS, cilt.22, sa.9, 2015 (SCI-Expanded)
  46. **Confinement effects of magnetic field on two-dimensional hydrogen atom in plasmas**  
Bahar M. K., Soylu A.  
PHYSICS OF PLASMAS, cilt.22, sa.5, 2015 (SCI-Expanded)
  47. **An Alternative Approach to Solutions of the MGECSC Potential in Presence of External Electric Field**  
Bahar M. K.  
ADVANCES IN HIGH ENERGY PHYSICS, cilt.2015, 2015 (SCI-Expanded)
  48. **Relativistic corrections for screening effects on the energies of hydrogen-like atoms embedded in plasmas**  
Poszwa A., Bahar M. K.  
PHYSICS OF PLASMAS, cilt.22, sa.1, 2015 (SCI-Expanded)
  49. **Ansatz approach solution of the Duffin-Kemmer-Petiau equation for spin-1 particles with position-dependent mass in the presence of Kratzer-type potential**  
BAHAR M. K., YAŞUK F.  
CANADIAN JOURNAL OF PHYSICS, cilt.92, sa.12, ss.1565-1569, 2014 (SCI-Expanded)
  50. **The hydrogen atom in plasmas with an external electric field**  
Bahar M. K., Soylu A.  
PHYSICS OF PLASMAS, cilt.21, sa.9, 2014 (SCI-Expanded)
  51. **Plasma screening effects on the energies of hydrogen atom under the influence of velocity-dependent potential**  
Bahar M. K.  
PHYSICS OF PLASMAS, cilt.21, sa.7, 2014 (SCI-Expanded)
  52. **Relativistic solutions for the spin-1 particles in the two-dimensional Smorodinsky-Winternitz potential**  
BAHAR M. K., YAŞUK F.  
ANNALS OF PHYSICS, cilt.344, ss.105-117, 2014 (SCI-Expanded)
  53. **AIM Solutions to the DKP Equation for Spin-1 Particles in the Presence of Kratzer Potential in (2+1) Dimensions**  
BAHAR M. K.  
FEW-BODY SYSTEMS, cilt.54, sa.11, ss.2133-2142, 2013 (SCI-Expanded)
  54. **Solutions of the Duffin-Kemmer-Petiau equation in the presence of Hulthen potential in (1+2) dimensions for unity spin particles using the asymptotic iteration method**

- Molae Z., BAHAR M. K., YAŞUK F., Hassanabadi H.  
CHINESE PHYSICS B, cilt.22, sa.6, 2013 (SCI-Expanded)
55. **Relativistic spin-1 particles with position-dependent mass under the Coulomb interaction: Exact analytical solutions of the DKP equation**  
BAHAR M. K., YAŞUK F.  
CANADIAN JOURNAL OF PHYSICS, cilt.91, sa.3, ss.191-197, 2013 (SCI-Expanded)
56. **Fermionic particles with position-dependent mass in the presence of inversely quadratic Yukawa potential and tensor interaction**  
BAHAR M. K., YAŞUK F.  
PRAMANA-JOURNAL OF PHYSICS, cilt.80, sa.2, ss.187-197, 2013 (SCI-Expanded)
57. **Exact Solutions of the Mass-Dependent Klein-Gordon Equation with the Vector Quark-Antiquark Interaction and Harmonic Oscillator Potential**  
BAHAR M. K., YAŞUK F.  
ADVANCES IN HIGH ENERGY PHYSICS, cilt.2013, 2013 (SCI-Expanded)
58. **Bound states of the Dirac equation with position-dependent mass for the Eckart potential**  
BAHAR M. K., YAŞUK F.  
CHINESE PHYSICS B, cilt.22, sa.1, 2013 (SCI-Expanded)
59. **Approximate Solutions to the Dirac Equation with Effective Mass for the Manning-Rosen Potential in N Dimensions**  
BAHAR M. A., YAŞUK F.  
FEW-BODY SYSTEMS, cilt.53, ss.515-524, 2012 (SCI-Expanded)
60. **Approximate solutions of the Dirac equation with position-dependent mass for the Hulthen potential by the asymptotic iteration method**  
YAŞUK F., BAHAR M. K.  
PHYSICA SCRIPTA, cilt.85, sa.4, 2012 (SCI-Expanded)
61. **Subband structure of p-type delta-doped GaAs as dependent on the acceptor concentration and the layer thickness**  
Ozturk E., Bahar M. K., Sokmen I.  
EUROPEAN PHYSICAL JOURNAL-APPLIED PHYSICS, cilt.41, sa.3, ss.195-200, 2008 (SCI-Expanded)

## **Diğer Dergilerde Yayınlanan Makaleler**

1. **Plasma Shielding Effects on Nuclear Spectra:  $^{18}\text{Ne}$  Application**  
AKKOYUN S., BAHAR M. K.  
Bulletin of the Russian Academy of Sciences: Physics, cilt.86, sa.11, ss.1387-1390, 2022 (Scopus)
2. **Search for the anomalous electromagnetic moments of the tau lepton through electron photon scattering at the CLIC**  
ÖZGÜVEN Y., İNAN S. C., BİLLUR A. A., KÖKSAL M., BAHAR M. K.  
arXiv, 2016 (Hakemsiz Dergi)
3. **Ladder Operators and Coherent States for Electrons Under Double Parabolic Confinement in a Quantum Wire**  
Bahar M. K.  
Celal Bayar Journal of Science, cilt.12, ss.427-435, 2016 (Hakemli Dergi)
4. **The Dirac equation with position-dependent mass for the modified Pöschl-Teller potential and its solution**  
YAŞUK F., BAHAR M. K.  
International Journal of Physical Sciences, 2012 (Hakemli Dergi)
5. **Elektrik alan altındaki kare kuantum kuyusunun elektronik özelliklerinin perturbatif ve analitik yöntem ile incelenmesi**  
Bahar M. K., Ersoy A.

## Akademik İdari Deneyim

|             |                                        |                                                                                                  |
|-------------|----------------------------------------|--------------------------------------------------------------------------------------------------|
| 2017 - 2019 | <b>Anabilim/Bilim Dalı<br/>Başkanı</b> | Karamanoğlu Mehmetbey Üniversitesi, Mühendislik Fakültesi, Enerji Sistemleri Mühendisliği Bölümü |
| 2015 - 2019 | <b>Bölüm Başkan<br/>Yardımcısı</b>     | Karamanoğlu Mehmetbey Üniversitesi, Mühendislik Fakültesi, Enerji Sistemleri Mühendisliği Bölümü |
| 2015 - 2017 | <b>Anabilim/Bilim Dalı<br/>Başkanı</b> | Karamanoğlu Mehmetbey Üniversitesi, Mühendislik Fakültesi, Enerji Sistemleri Mühendisliği Bölümü |

## Verdiği Dersler

Fizikte Sayısal Yöntemler, Yüksek Lisans, 2019 - 2020

Genel Fizik 2, Lisans, 2019 - 2020

Genel Fizik I, Lisans, 2019 - 2020

## Yönetilen Tezler

Bahar M. K., Elektrik ve manyetik alan etkisinde plazma ortamında iki elektronlu Gaussian kuantum noktasının optiksel özellikleri, Yüksek Lisans, K.KILIÇ(Öğrenci), 2020

## Metrikler

Yayın: 75

Atıf (WoS): 228

Atıf (Scopus): 512

H-İndeks (WoS): 9

H-İndeks (Scopus): 12

## Araştırma Alanları

Atomik ve moleküler etkileşimler, Plazma fiziği