

Asst. Prof. DENİZ KAYA

Personal Information

Office Phone: [+90 242 227 4400](tel:+902422274400) Extension: 3833

Email: denizkaya@akdeniz.edu.tr

Web: <https://avesis.akdeniz.edu.tr/denizkaya>

International Researcher IDs

ScholarID: sY2bJ8EAAAAJ

ORCID: 0000-0002-1951-2466

Publons / Web Of Science ResearcherID: A-2832-2016

ScopusID: 57205357808

Yoksis Researcher ID: 34237

Education Information

Post Doctorate, Carnegie Mellon University, Faculty of Engineering, Kimya Ve Malzeme Mühendisliği, United States Of America 2008 - 2011

Doctorate, University of Massachusetts Amherst, Faculty of Science, Fizik, United States Of America 2002 - 2008

Masters (Non-Thesis), University of Massachusetts Amherst, Faculty of Science, Fizik, United States Of America 2000 - 2002

Undergraduate, Bogazici University, Fen Edebiyat, Fizik, Turkey 1995 - 2000

Foreign Languages

English, C1 Advanced

Dissertations

Doctorate, Kinetics of Phase Separation and Pattern Formation in Polyelectrolyte and Salt Solutions, University of Massachusetts Amherst, Fizik , Fizik - Polimer Bilimi, 2008

Research Areas

Physics, Interdisciplinary Physics and Related Science and Technology Areas, Physical Chemistry, Materials Science, General Physics, Statistical physics, thermodynamic and nonlinear dynamic systems, Measurement Science, General Laboratory Techniques, and Metrology, Condensed Matter 1: Structural, Mechanical and Thermal Properties, Equations of State, Phase Equilibria, and Phase Transitions, Structure of Liquids and Solids; Crystallography, Mechanical and Acoustic Properties of Condensed Matter, Thermal Properties of Condensed Matter, Chemistry, Physical Chemistry, Characterization of Polymers, Polymeric Materials, Spectroscopy, Natural Sciences

Academic Titles / Tasks

Assistant Professor, Akdeniz University, Faculty of Science, Department of Physics, 2018 - Continues

Assistant Professor, Akdeniz University, Faculty of Science, Department of Physics, 2014 - 2018
Assistant Professor, Akdeniz University, Technical Sciences Vocational School, Department of Electricity and Energy, 2013 - 2014
Research Assistant PhD, Akdeniz University, Faculty of Science, Department of Physics, 2011 - 2013
Research Assistant PhD, Carnegie Mellon University, Faculty of Engineering, Malzeme Bilimi Ve Mühendisliği, 2010 - 2012
Research Assistant PhD, Carnegie Mellon University, Faculty of Engineering, Kimya Mühendisliği, 2007 - 2009
Research Assistant, University of Massachusetts Amherst, Faculty of Engineering, Polimer Bilimi Ve Mühendisliği, 2002 - 2007
Lecturer, University of Massachusetts Amherst, Faculty of Science, Fizik, 2000 - 2002

Courses

Physics for Computer Science II, Undergraduate, 2022 - 2023, 2021 - 2022, 2020 - 2021
Optoelektronik'in Temelleri I, Undergraduate, 2022 - 2023, 2021 - 2022, 2018 - 2019, 2017 - 2018
Basics of Electronics, Undergraduate, 2022 - 2023, 2021 - 2022
Temel Elektronik Laboratuvarı, Undergraduate, 2022 - 2023, 2021 - 2022
Physics I , Undergraduate, 2023 - 2024, 2021 - 2022
Optik, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022
Physics for Computer Science I, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022
Bitirme Çalışması II, Undergraduate, 2022 - 2023, 2021 - 2022, 2018 - 2019, 2017 - 2018
Bitirme Çalışması I, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022, 2017 - 2018
Optik Laboratuvarı, Undergraduate, 2023 - 2024, 2022 - 2023, 2021 - 2022
Biyofizik, Undergraduate, 2021 - 2022, 2017 - 2018
Physics II, Undergraduate, 2021 - 2022
Klasik Mekanik II, Doctorate, 2022 - 2023
Fizik II, Undergraduate, 2018 - 2019
Fizik II, Undergraduate, 2018 - 2019
Yumuşak Madde Fiziği, Doctorate, 2018 - 2019
Fizik II LAB, Undergraduate, 2018 - 2019
Fizik I LAB, Undergraduate, 2018 - 2019, 2017 - 2018
Fizik II, Undergraduate, 2017 - 2018
Fizik II LAB, Undergraduate, 2017 - 2018
Fizik I, Undergraduate, 2018 - 2019
Fizik I, Undergraduate, 2018 - 2019, 2017 - 2018
Genel Fizik, Undergraduate, 2017 - 2018
Kathal Fiziği, Undergraduate, 2017 - 2018
Fizik, Undergraduate, 2017 - 2018
Mekanik, Undergraduate, 2017 - 2018
Spektroskopi, Undergraduate, 2016 - 2017
Eletrik ve Manyetizma, Undergraduate, 2016 - 2017
Biyofizik, Undergraduate, 2016 - 2017
Mekanik, Undergraduate, 2016 - 2017
Dalgalar, Undergraduate, 2013 - 2014

Advising Theses

KAYA D., Kübik Yapıdaki Mg Alkoksit Bileşiklerinin Elektron İyonlaşması Yöntemi Kullanılarak Kimyasal Parçalanma Mekanizmalarının Aydınlatılması, Doctorate, F.Perinçek(Student), Continues

Kaya D., INVESTIGATION OF MAGNETIC INDUCTION HEATING USING FINITE ELEMENT METHOD, Postgraduate, Ö.SÖNMEZ(Student), 2022

Kaya D., Koloit parçacıkların etkileşim potansiyel enerjilerinin video mikroskop yöntemiyle ölçülmesi, Postgraduate, N.TUNA(Student), 2021

Kaya D., İki boyutlu fotonik koloit kristal yapıların oluşturulması ve incelenmesi, Postgraduate, S.HAZAR(Student), 2021

Kaya D., Çoklu katyon ortamında polielektrolit faz geçiş dinamiğinin ışık saçılımı yöntemi ile incelenmesi, Postgraduate, G.ÖZYAMAN(Student), 2020

Kaya D., Mikrorejellerde Katı-Sıvı Faz Geçiş Dinamiklerin Video Mikroskop Yöntemiyle İncelenmesi, Postgraduate, G.Büşra(Student), 2019

Kaya D., Peptit jellerin viskoelastik özelliklerinin pasif mikroeoloji yöntemi ile incelenmesi, Postgraduate, A.GENÇASLAN(Student), 2017

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Optical properties of a quantum dot confined in inverse square root truncated exponential potential under varied conditions of temperature, hydrostatic pressure, and electric/magnetic fields**
BAYRAK K., KAYA D., BAYRAK O.
European Physical Journal Plus, vol.139, no.8, 2024 (SCI-Expanded)
- II. **The effect of position-dependent effective mass on the optical properties of a spherical quantum dot confined in inverse square root truncated and deformed exponential potential**
BAYRAK K., KAYA D., BAYRAK O.
European Physical Journal Plus, vol.138, no.6, 2023 (SCI-Expanded)
- III. **The total absorption coefficient and refractive index change of a spherical quantum dot in the confinement radial potential**
Kaya D., Yücel M. B., Bayrak O.
PHYSICA B: CONDENSED MATTER, vol.648, no.2023, pp.1-8, 2023 (SCI-Expanded)
- IV. **Orientation Dependent Deformed Nuclear Potential for the α -Decay**
Yıldırım A., Boztosun I., Kaya D., Küçük Y.
BRAZILIAN JOURNAL OF PHYSICS, vol.52, no.40, pp.1-11, 2022 (SCI-Expanded)
- V. **Photonuclear reactions with zinc: A case for clinical linacs**
Boztosun I., Dapo H., Karakoç M., Özmen S. F., Cecen Y., Çoban A. Y., Caner T., Bayram E., Saito T. R., Akdogan T., et al.
EUROPEAN PHYSICAL JOURNAL PLUS, vol.130, no.9, 2015 (SCI-Expanded)
- VI. **Density invariant vibrational modes in disordered colloidal crystals**
Green N. L., Kaya D., Maloney C. E., Islam M. F.
PHYSICAL REVIEW E, vol.83, no.5, 2011 (SCI-Expanded)
- VII. **Pattern formation in drying droplets of polyelectrolyte and salt**
Kaya D., Belyi V. A., Muthukumar M.
JOURNAL OF CHEMICAL PHYSICS, vol.133, no.11, 2010 (SCI-Expanded)
- VIII. **Normal Modes and Density of States of Disordered Colloidal Solids**
Kaya D., Green N. L., Maloney C. E., Islam M. F.
SCIENCE, vol.329, no.5992, pp.656-658, 2010 (SCI-Expanded)

Articles Published in Other Journals

- I. **Numerical simulation of a magnetic induction coil for heat treatment of an AISI 4340 gear**
Sonmez O., Kaya D., Bukanin V., Ivanov A.
European Mechanical Science, vol.6, no.2, pp.129-137, 2022 (Peer-Reviewed Journal)
- II. **The results of the first photonuclear reaction performed in Turkey: The zinc example**
Boztosun I., Dapo H., Özmen S. F., Çeçen Y., Karakoç M., Çoban A., Cesur A., Caner T., Bayram E., Keller G. B., et al.

Refereed Congress / Symposium Publications in Proceedings

- I. **Calculation of Pair Correlation Function in gas and crystal phases of temperature sensitive colloidal system**
KAYA D.
2nd International Physics Days , Hradec-Kralove, Czech Republic, 12 - 13 October 2023, pp.11-17
- II. **Identifying Heterogeneous Gel Structure via Microrheology of Peptide Nanogels and Agar Gels**
KAYA D.
3rd BioBrillouin Meeting, Porto, Portugal, 25 September 2019
- III. **Elasticity of Colloidal Systems by Video Microscopy Method**
KAYA D.
XV International Workshop on Complex Systems, Andola, Italy, 17 - 20 March 2019
- IV. **Video Microscopy Method Of Colloidal Systems As Comparative Study For Brillouin Scattering**
KAYA D.
Advances In Brillouin Light Scattering Biobrillouin Meeting, Perugia, Italy, 12 - 14 September 2018
- V. **From Brownian Motion to Measuring Viscoelasticity :A Study onthe Elasticity of PolyPeptide Nanogels via Microrheology**
KAYA D.
24. İstatistik Fizik Gunleri, 29 June - 01 July 2017
- VI. **Viscoelastic Properties of Peptide Nanofiber Gels via Microrheology**
KAYA D., Gençaslan A., Güler M. Ö.
IUPAC 46th World Polymer Congress, İstanbul, Turkey, 17 - 21 July 2016, vol.1, no.1, pp.161
- VII. **Video Mikroskop Metoduyla Peptit Jellerin Mikröreolojik Özelliklerinin Ölçülmesi**
KAYA D., Gençaslan A., Güler M. Ö.
5. Adım Fizik Günleri, Eskişehir, Turkey, 21 - 23 April 2016, vol.1, no.1, pp.49
- VIII. **Video Mikroskop Metodu ile Viskoelastik Ölçümler**
KAYA D., Güler M. Ö., Gençaslan A.
Yoğun Madde Fiziği 21, Ankara, Turkey, 25 December 2015, pp.6
- IX. **Deneysel Temel ve Uygulamalı Nükleer Fizik çalışmalarına Akdeniz Üniversitesinin Katkısı**
BOZTOSUN İ., KAYA D.
TUSAŞ Uzay Uydu Teknolojileri Çalıştayı, Ankara, Turkey, 11 - 12 November 2015
- X. **Işık saçılımı metodları ile polielektrolit-tuz çözeltilerinde faz geçiş dinamiğinin incelenmesi**
KAYA D., ERDEM R., YALTKAYA Ş.
İstatistik Fizik Günleri 21, Kayseri, Turkey, 27 June 2013 - 29 June 2013, pp.5
- XI. **İŞIK SAÇILIMI METODLARI İLE POLİELEKTROLİT-TUZ ÇÖZELTİLERİNDE FAZ GEÇİŞ DİNAMIĞININ İNCELENMESİ**
KAYA D., YALTKAYA Ş., ERDEM R.
20. İSTATİKSEL FİZİK GÜNLERİ, Kayseri, Turkey, 27 - 29 June 2013, pp.1
- XII. **Işık saçılımı metodları ile polielektrolit-tuz çözeltilerinde faz geçiş dinamiğinin incelenmesi**
KAYA D., ERDEM R., YALTKAYA Ş.
İstatistik Fizik Günleri 21, Kayseri, Turkey, 27 June 2013 - 29 June 2013, pp.5
- XIII. **Normal Modes and Density of States of Disordered Colloidal Solids**
KAYA D.
İstatistik Fizik Günleri 18, İstanbul, Turkey, 30 June - 02 July 2011, pp.2
- XIV. **BAPS.2010.MAR.D12.2**
KAYA D., Maloney C. E., Islam M. F., Green N. L.
APS March Meeting 2010, Pittsburgh, United States Of America, 1 - 07 March 2010, pp.12
- XV. **Melting Dynamics of 3D Hard Sphere Colloidal Crystals**

KAYA D., Maloney C. E., Islam M. F., Green N. L., Widom M.

APS March Meeting 2009, Pittsburgh, United States Of America, 1 - 07 March 2009, pp.4

XVI. Pattern Formation in Polyelectrolyte –Salt Solutions

KAYA D., Muthukumar M., Belyi V. A.

6th National Graduate Research Polymer Conference, Amherst Ma, United States Of America, 1 - 07 June 2005, pp.20

XVII. Pattern Formation in Drying Droplets of Polyelectrolyte –Salt Solutions

KAYA D., Muthukumar M., Belyi V. A.

APS March Meeting 2005, Los Angeles, United States Of America, 1 - 07 March 2005, pp.8

XVIII. Pattern Formation in Drying Droplets of Polyelectrolyte –Salt Solutions

KAYA D., Muthukumar M.

21st New England Complex Fluid Workshop Harvard University, MA, 2004., Boston Ma, United States Of America, 01 April 2004, pp.2

XIX. Phase Separation Kinetics of Polyelectrolyte Solutions

KAYA D., Muthukumar M., Kanai S., McNamara J.

APS March Meeting 2004, Montreal, Canada, 1 - 07 March 2004, pp.6

Supported Projects

KAYA D., PERİNÇEK F., Project Supported by Higher Education Institutions, Kübik Yapıdaki Mg Alkoksit Bileşiklerinin Elektron İyonlaşması Yöntemi Kullanılarak Kimyasal Parçalanma Mekanizmalarının Aydınlatılması, 2017 - Continues

KAYA D., AKSU Y., PERİNÇEK F., Project Supported by Higher Education Institutions, Kübik Yapıdaki Heterobimetalik Mg/Zn, Li/Mg, Sn/Zn ve In/Sn Alkoksit Bileşiklerinin Elektron İyonlaşması Yöntemi Kullanılarak Kimyasal Parçalanma Mekanizmalarının Aydınlatılması, 2020 - 2024

Kaya D., TÜBİTAK - AB COST Project, Brillouin Light Scattering Microspectroscopy for Biological and Biomedical Research and Applications, 2018 - 2021

KAYA D., TUBİTAK Project, İki Ve Üç Boyutlu Kısıtlanmalar Altında Koloit Katı Fazları Geçiş Dinamiği Ve Koloit Kristal Elastisitesi, 2017 - 2019

KAYA D., TUBİTAK Project, Nanofiber Jellerin Vizkoelastik Özelliklerinin Mikroreoloji Yöntemi ile Ölçülmesi, 2014 - 2016

Activities in Scientific Journals

Research on Engineering Structures and Materials, Advisory Committee Member, 2021 - 2022

Scientific Refereeing

TUBİTAK Project, 1011 - International Scientific Research Projects Participation Program (UBAP), Akdeniz University, Turkey, October 2023

TUBİTAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, Akdeniz University, Turkey, November 2022

TUBİTAK Project, 1001 - Program for Supporting Scientific and Technological Research Projects, Akdeniz University, Turkey, December 2021

Research on Engineering Structures and Materials, National Scientific Refreed Journal, March 2021

Anadolu Üniversitesi Bilim Ve Teknoloji Dergisi A - Uygulamalı Bilimler ve Mühendislik, National Scientific Refreed Journal, March 2018

Scientific Research / Working Group Memberships

Brillouin Light Scattering Microspectroscopy for Biological and Biomedical Research and Applications, Vienna BioCenter Core Facilities GMBH, Austria, <https://www.biobrillouin.eu/>, 2018 - Continues

Metrics

Publication: 29

Citation (WoS): 241

Citation (Scopus): 241

H-Index (WoS): 5

H-Index (Scopus): 5

Congress and Symposium Activities

Biophotonics Conference, Audience, Massachusetts, United States Of America, 2023

2nd International Physics Days, Invited Speaker, Hradec-Kralove, Czech Republic, 2023

New Frontiers in Nuclear Physics and Astrophysics, Audience, Antalya, Turkey, 2023

5th Virtual Biobrillouin Meeting, Audience, Vienna, Austria, 2021

Biobrillouin Virtual Training School, Attendee, Vienna, Austria, 2021

SoftComp/EUSMI Annual Meeting , Audience, Mainz, Germany, 2021

4th Virtual Biobrillouin Meeting, Audience, Exeter, United Kingdom, 2020

3rd BioBrillouin Meeting / Identifying heterogeneous gel structure via Microrheology of Peptide Nanogels and Agar Gels, Attendee, Porto, Portugal, 2019

XV Complex Fluid Conference / Elasticity Of Colloidal Systems By Video Microscopy Method, Attendee, Verona, Italy, 2019

2nd Workshop on Brillouin microscopy, Attendee, Lyon, France, 2019

Advances in Brillouin Light Scattering & BioBrillouin Meeting /Video microscopy method of colloidal systems as comparative study for Brillouin scattering, Attendee, Perugia, Italy, 2018

24. İstatistik Fizik Günleri -Davetli Konuşmacı /From Brownian Motion To Measuring Viscoelasticity :a Study Onthe Elasticity Of Polypeptide Nanogels Via Microrheology DAVETLİ, Attendee, İzmir, Turkey, 2017

24. İstatistik Fizik Günleri, Invited Speaker, İzmir, Turkey, 2017

IUPAC 46th World Polymer Congress, Attendee, İstanbul, Turkey, 2016

5. Adım Fizik Günleri, Attendee, Eskişehir, Turkey, 2016

COST MP1205 Advances in Optofluidics: Integration of Optical Control and Photonics with Microfluidics, Attendee, İstanbul, Turkey, 2016

Hava ve Uzay Sistemleri Teknoloji Paneli Milli Savunma Bakanlığı ARGE ve Teknoloji D. Başkanlığı, Attendee, Turkey, 2015

Yoğun Madde Fiziği 21, Attendee, Ankara, Turkey, 2015

TUSAŞ Uzay-Uydu Teknolojileri Çalıştayı, Attendee, Turkey, 2015

Lumidoz-9, Attendee, Antalya, Turkey, 2015

NUBA Uluslararası Yaz Kursu, Attendee, Turkey, 2015

NUBA Konferans Serileri-1, Attendee, Turkey, 2014

NUBA Uluslararası Nükleer Fizik Yaz Okulu, Attendee, Turkey, 2014

İstatistik Fizik Günleri 20, Attendee, Kayseri, Turkey, 2013

5.Nanoteknoloji Günü -Davetli Konuşmacı, Attendee, Ankara, Turkey, 2012

İstatistiksel Fizik Günleri 18, Attendee, İstanbul, Turkey, 2011

Koc Üniversitesi Bilim Konuşması, Invited Speaker, İstanbul, Turkey, 2010

APS Meeting, Attendee, Pennsylvania, United States Of America, 2010

APS Meeting, Attendee, Oregon, United States Of America, 2009

APS Meeting, Attendee, California, United States Of America, 2005

21st New England Complex Fluid Workshop, Attendee, Massachusetts, United States Of America, 2004

APS Meeting, Attendee, Montréal, Canada, 2004

American Physical Society Opportunities for Physicist in Biology, Attendee, California, United States Of America, 2004

1st American Conference on Neutron Scattering, Attendee, Tennessee, United States Of America, 2002

NIST Summer School on Small Angle Neutron Scattering and Reflectometry from Submicron Structures, Attendee, Washington, United States Of America, 2002

Scholarships

2232 Geri Dönüş Programı, TÜBİTAK, 2011 - 2012

Postdoctoral Fellowship, Official Institutions of Foreign Countries, 2008 - 2011

Graduate Fellowship, Official Institutions of Foreign Countries, 2000 - 2008