CURRICULUM VITAE AND PUBLICATIONS LIST



CURRICULUM VITAE

Name and Surname: AYSUN BÖKE

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Foreign Languages Known (Score and Year): English, B2 Upper Intermediate, 2009

Area of Expertise: Nuclear physics
Physics

Degree	Department/Program	University	Year
Doctorate	Physics – PhD	Balıkesir University	2008
Master's Degree	FİZİK (YL) (TEZLİ)	Bursa Uludağ University	1996
Bachelor's Degree	FİZİK BÖLÜMÜ	Bursa Uludağ University	1993

Master's Thesis Title (abstract attached) and Thesis Supervisor(s):

Gamma ışınlarının koherent ve inkoherent saçılma tesir kesitlerinin incelenmesi

Doctoral Thesis/Proficiency Study/Medical Specialization Thesis Title (abstract attached) and Supervisor(s):

Yıldız model programlarının son teorik opaklık verileri ile ve gözlemsel kontrollerle test edilmesi

Position Title	Workplace	Year
Professor Dr.	Balıkesir University	2025-Continues
Associate Professor	Balıkesir University	2020-2025
Assistant Professor	Balıkesir University	2010-2020
Research Assistant	Balıkesir University	1998-2010
Research Assistant	Bursa Uludağ University	1993-1997

Supervised Master's Theses:

1. Monte Carlo Yöntemi ile katılarda foton etkileşimlerinin modellenmesi (2022)
2. Kan dokusundaki foton etkileşim tesir kesitlerinin düşük enerjili fotonlar için hesaplanması (2018)
3. Determination of X-ray attenuation coefficients at low photon energies of tissue equivalent substances of medical importance (Continues)

Roles in Projects:

1. *Plastik Maddelerin Foton Zayıflama Karakteristiklerinin Belirlenmesi*, Project Supported by Higher Education Institutions, Böke A. (Executive), 2019-2026.

2. *Monte Carlo Yöntemi ile Katılarda Foton Etkileşimlerinin Modellenmesi*, Project Supported by Higher Education Institutions, Böke A. (Executive), 2019-2022.

3. *Doku Eşdeğeri Kompleks Moleküler Yapıların Koherent Saçılma Görüntülemesinin Teorik olarak Belirlenmesi.*, TUBITAK Project, Böke A. (Executive), 2019-2021.

Administrative Duties:

1. Phase Coordinator - Balıkesir University (2013 - 2017)
2. Institutional Coordinator of the Mevlana Exchange Program - Balıkesir University (2013 - 2014)

Awards:

1. Yayın Teşvik (2024)
2. YAYIN TEŞVİK (2018)
3. Yayın Teşvik (2014)
4. Yayın Teşvik (2013)
5. Yayın Teşvik (2011)
6. Yayın Teşvik (2007)
7. FİZİK BÖLÜMÜ BİRİNCİLİĞİ (1993)

PUBLICATIONS

A. Articles published in international peer-reviewed journals:

A1. Böke A., "The Theoretical Linear Attenuation and Scattering Coefficients of Polymethyl Methacrylate", *Proceedings of the National Academy of Sciences, India Section A: Physical Sciences*, vol. 96, pp. 139-143, 2026.

A2. Böke A., "X-ray interaction and computational characterization and analysis of human brain tissuefor applications in cancer detection", *Nuclear Engineering and Technology*, vol. 57, no. 103683, pp. 1-6, 2025.

A3. Böke A., "Calculation of X-ray attenuation coefficients for normal and cancerous breast tissues", *Nuclear Engineering and Technology*, vol. 56, pp. 241-246, 2024.

A4. Böke A., Gencer D., "The photon interaction cross sections of blood", *Chinese Journal of Physics*, vol. 58, pp. 58-62, 2019.

A5. Böke A., "The photon interaction cross sections of human cortical bone tissue", *Chinese Journal of Physics*, vol. 55, no. 6, pp. 2165-2172, 2017.

A6. Böke A., "Linear attenuation coefficients of tissues from 1keV to 150keV", *Radiation Physics and Chemistry*, vol. 102, pp. 49-59, 2014.

A7. Böke A., "The total incoherent scattering cross sections for low-Z elements", *Radiation Physics and Chemistry*, vol. 83, pp. 34-41, 2013.

A8. Böke A., "Calculation of the total Rayleigh scattering cross sections of photons in the energy range of 30-50keV for Nb and Mo elements", *Radiation Physics and Chemistry*, vol. 80, no. 5, pp. 609-613, 2011.

A9. İnlek G., Böke A., Yılmaz O., Buddıng E., "Effects of Opacity on Stellar Radii and Their Relevance to Observational Data", *Turkish Journal of Physics*, vol. 32, no. 2, pp. 65-77, 2008.

A10. İnlek G., Böke A., Yilmaz O., Buddıng E., "The role of stellar envelope convection in gravity-darkening and its relation to observational data", *New Astronomy*, vol. 12, no. 5, pp. 427-434, 2007.

B. Papers presented at international scientific meetings and published in proceedings:

B1. Böke A., THEORETICAL STUDY ON THE PHOTON INTERACTION OF POLYMETHYL METHACRYLATE, In: *5. BİLSEL INTERNATIONAL TURABDİN SCIENTIFIC RESEARCHES AND INNOVATION CONGRESS*, Mardin, Türkiye, 2025, pp. 475-475.

B2. Böke A., INCOHERENT SCATTERING FUNCTIONS OF WHITE AND GRAY BRAIN TISSUES, In: *8th International ICONTECH CONGRESS on Innovative Surveys in Positive Sciences*, Azerbaijan, 2024, pp. 321-321.

B3. Böke A., COHERENT SCATTERING FORM FACTOR DATA FOR TISSUE EQUIVALENT MATERIALS, In: *8th International ICONTECH CONGRESS on Innovative Surveys in Positive Sciences*, Azerbaijan, 2024, pp. 322-322.

B4. Böke A., THE X-RAY ATTENUATİON CHARACTERİSTİCS OF HUMAN BREAST TİSSUE EQUİVALENT STRUCTURES, In: *EUROASIA SUMMIT 4 th INTERNATIONAL APPLIED SCIENCES CONGRESS*, Ukraine, 2021, pp. 146-146.

B5. Böke A., Ahat F., Monte Carlo Yöntemi ile Katılarda Foton Etkileşimlerinin Modellenmesi, In: *International Congress of Engineering and Natural Sciences Studies*, Ankara, Türkiye, 2021, pp. 65-65.

B6. Böke A., Theoretical approaches for low atomic number materials and the choice of tissue-equivalent substitutes, In: *5 th International Congress on Natural and Engineering Sciences*, İstanbul, Türkiye, 2019, pp. 18-18.

B7. Böke A., Accurate calculation of x-ray scattering modeling of molecular structures in Monte Carlo codes, In: *3rd International Symposium on Innovative Approaches in Scientific Studies (Section:Engineering and Natural Sciences)*, Ankara, Türkiye, 2019, pp. 52-52.

B8. Böke A., Gencer D., The photon interaction data of blood for medical imaging, In: *4th INTERNATIONAL CONFERENCE ON COMPUTATIONAL AND EXPERIMENTAL SCIENCE AND ENGINEERING (ICCESEN-2017)*, Antalya, Türkiye, 2017, pp. 132-132.

B9. Böke A., The theoretical Coherent (Rayleigh) scattering cross section data for plastics, In: *4th INTERNATIONAL CONFERENCE ON COMPUTATIONAL AND EXPERIMENTAL SCIENCE AND ENGINEERING (ICCESEN-2017)*, Antalya, Türkiye, 2017, pp. 133-133.

B10. Böke A., Linear attenuation coefficients of tissues from 1 keV to 150 keV and energy distribution by Monte Carlo simulation, In: *Turkish Physical Society 30th International Physics Congress*, İstanbul, Türkiye, 2013, pp. 583-583.

B11. Böke A., Molecular interference functions and molecular total coherent cross sections of tissues, In: *Turkish Physical Society 29th International Physics Congress*, Türkiye, 2012, pp. 680-680.

B12. Böke A., The total incoherent scattering cross sections for low Z elements, In: *Turkish Physical Society 28th International Physics Congress*, Türkiye, 2011, pp. 838-838.

B13. Böke A., Calculation of the total Rayleigh scattering cross sections of photons in the energy range of 30- 50 keV for Nb and Mo elements, In: *Turkish Physical Society 27th International Physics Congress*, İstanbul, Türkiye, 2010, pp. 726-726.

B14. Böke A., İnlek G., Yılmaz O., Buddıng E., Opacity tables for use in Paczynski stellar modelling, In: *Turkish Physical Society 26th International Physics Congress*, Türkiye, 2009, pp. 576-576.

B15. Böke A., Özmutlu C., The calculation of total coherent and total incoherent scattering cross sections of gamma rays for lithium element, In: *Turkish Physical Society 26th International Physics Congress*, Türkiye, 2009, pp. 538-538.

B16. İnlek G., Böke A., Yılmaz O., Buddıng E., The role of stellar envelope convection in gravity darkening and gravity darkening effect on light curves and observational checks, In: *6th International Conference of the Balkan Physical Union*, İstanbul, Türkiye, 2006, pp. 601-601.

B17. Böke A., Özmutlu C., The energy spectra of once scattered gamma rays in uranium media, In: *6th International Conference of the Balkan Physical Union*, İstanbul, Türkiye, 2006, pp. 552-552.

B18. Böke A., Özmutlu C., The calculation of total coherent and total incoherent scattering cross sections of gamma rays for beryllium nitrogen and sodium elements, In: *6th International Conference of the Balkan Physical Union*, İstanbul, Türkiye, 2006, pp. 551-551.

B19. Böke A., Özmutlu C., The energy spectra of once scattered and twice scattered gamma rays in aluminum media, In: *6th International Conference of the Balkan Physical Union*, İstanbul, Türkiye, 2006, pp. 111-111.

B20. İnlek G., Böke A., Yılmaz O., Buddıng E., Demircan O., The role of Stellar envelope convection and its relation to observational data, In: *Turkish Physical Society 23rd International Physics Congress*, Muğla, Türkiye, 2005, pp. 363-363.

D. Articles published in national peer-reviewed journals:

D1. Böke A., "Molecular form factor data for tissue-equivalent materials", *Balıkesir Üniversitesi Fen Bilimleri Enstitüsü Dergisi*, vol. 26, no. 2, pp. 549-555, 2024.

D2. Böke A., "Coherent X-ray scattering data for plastics", *Journal of Balıkesir University Institute of Science and Technology*, vol. 21, no. 1, pp. 217-222, 2019.

D3. Böke A., "The effect of molecular interference on coherent scattering", *Journal of Balıkesir University Institute of Science and Technology*, vol. 19, no. 2, pp. 123-136, 2017.

E. Papers presented at national scientific meetings and published in proceedings:

E1. Böke A., Özmutlu C., Değişik ortamlardaki gama etkileşmelerinde toplam saçılma olasılığı hesabı, In: *Mantık,matematik ve felsefe IV. Ulusal sempozyumu*, İzmir, Türkiye, 2006, pp. 189-194.

E2. İnlek G., Böke A., Yılmaz O., Buddıng E., Kurucz opaklık tablolarının Chebyshev interpolasyon metodu ile incelenmesi, In: *XV. Ulusal Astronomi Kongresi, IV. Ulusal Öğrenci Astronomi Kongresi*, İstanbul, Türkiye, 2006, pp. 128-128.

E3. İnlek G., Böke A., Yılmaz O., Buddıng E., Çekim kararmasının W UMa türü örten çift yıldızların ışık eğrilerinin üzerine etkisi, In: *XV. Ulusal Astronomi Kongresi, IV. Ulusal Öğrenci Astronomi Kongresi*, İstanbul, Türkiye, 2006, pp. 127-127.

E4. Böke A., İnlek G., Yılmaz O., Buddıng E., Rosseland absorpsiyon katsayılarının Lagrange interpolasyon yöntemiyle farklı sıcaklıklar için hesaplanması, In: *XV. Ulusal Astronomi Kongresi, IV. Ulusal Öğrenci Astronomi Kongresi*, İstanbul, Türkiye, 2006,

pp. 21-21.

E5. Böke A., Özmutlu C., Bakır ortamında bir kez saçılma yapmış gamanın enerji dağılımının bulunması, In: *Radyasyon ve Çevre sempozyumu-2006*, Çanakkale, Türkiye, 2006, pp. 152-154.