CURRICULUM VITAE

Khaled G. Bodoor, Ph. D.

ADDRESS

Department of Physics
University of Jordan
Amman 11942
JORDAN
kbodoor@ju.edu.jo
KhaledBodoor@yahoo.com

EDUCATION

- B.A., Physics, Yarmouk University, Irbid, Jordan, 1993

- **Ph. D**., Physics, University of Virginia, Charlottesville, VA, USA January 2000
  Dissertation title: *Electromagnetic Form Factors of the Nucleon in Light-Cone Quark Models*
  Dissertation director: Prof. Hans J. Weber

WORK EXPERIENCE

University of Jordan, Amman, JORDAN
Department of Physics
Associate Professor of Physics (obtained in 2015)
September 2002/Present

- Taught the following **graduate** courses: Quantum Mechanics I & II, Nuclear Physics, Mathematical Physics I & II, Accelerator Physics, Statistical Physics, Classical Electrodynamics I, Special Topics in Nuclear Physics.
- Taught the following **undergraduate** courses: Quantum Mechanics I&II, Mathematical Physics I, Electronics, Electricity & Magnetism I & II, Nuclear Physics, Modern Physics, Special Relativity, Computational Packages in Physics, General Physics I & II, Introductory Laboratories.

RESEARCH EXPERIENCE

Fulbright Scholar
Louisiana State University, Baton Rouge, Louisiana
Sep 2007/Jun 2008
Worked in the Department of Biological Sciences with Dr. Aboul-ela on constructing and screening a database of small ligands for binding against an RNA target. Used NMR to screen for binding.

University of Jordan, Amman, JORDAN
Sep 2002/present

CURRENT RESEARCH PROJECTS:
1) Using molecular dynamics to model molecular processes, such as solvation, inclusion, and complexation.
2) Using molecular dynamics to test a small library of compounds for selective inhibition against the enzyme COX-2.

Department of Physics, University of Virginia, USA

1997/2001

Worked on phenomenological modeling of the proton and neutron in order to calculate electromagnetic form factors in light cone quark models. Developed formalism and code in Mathematica and Fortran for that purpose. Developed numerical code and introduced a novel method that leads to relativistically invariant form factors.

Fermi National Accelerator Laboratory, Chicago, USA

Jun 1996/Dec 1996

Helped in setting up experimental apparatus (data acquisition modules, wire chambers, photomultiplier tubes, cables, etc), and tested electronics (data acquisition system, beam monitoring, signal amplifiers, photomultiplier tubes, etc).

PHYSICS DEPARTMENT CONTRIBUTIONS

- Sat as a member on several defense committees for Master's and PhD students in the department.
- Member of committee tasked with initiating and directing the effort by the department to seek ABET accreditation.
- Major contributor to authoring the lab manual for the course Practical Physics I (Phys 302111).

- Introduced improvements to the method of teaching Practical Physics II, including designing and supervising practical exams for evaluating the students of the course.
- Recorded lectures and lab demonstrations during the Covid-19 pandemic for the course Practical Physics II (Phys 302112).
- Organized in 2016 a lecture series hosted by the physics department on Quantum Computing.
- Maintained web pages for several courses on the online platform run by the University of Jordan and on the Teams platform.
- Wrote the study plans and course schedules and ILOs for several undergraduate courses offered by the department.
- Contributed to evaluating the undergraduate study plan for the BSc degree in physics and modifying it to reflect current trends and render it more flexible and better geared toward providing the student with a better grounding in physics and scientific thinking.
- Contributed to revising and improving the part of the study plan related to practical courses offered by the physics department.
- Gave a lecture on Sep 22 2022 at the centre of the Jordanian Astronomical Association titled "The Road to Einstein's Theory of Special Relativity and its Applications".
- Organized an online workshop on Sep 20 2022 in collaboration with the staff at an Indonesian nuclear research reactor aimed at faculty and students at Jordanian universities with the title "Neutron Activation Analysis".
- Gave a lecture on Oct 6 2022 at the centre of the Jordanian Astronomical Association titled "From Galileo to James Webb: What we've Learned from Telescopes About Space".
- Contributed an article on Special Relativity in the October 2022 edition of the monthly publication by Jordanian Astronomical Association.

SKILLS

- **Programming:** Mathematica, Matlab, Python, C, C++, Fortran 90.
- **Molecular Modeling Software:** MOE, VMD, Jmol.
- **Computational Software:** Amber (MD package), Gaussian.

PUBLICATIONS

- Abuhasan, O. M., El-Barghouthi, M. I., Bodoor, K., Rawashdeh, A. M. M., & Assaf, K. I. (2023). Molecular recognition of tripeptides containing tryptophan by cucurbit [8] uril: A computational study. Arabian Journal of Chemistry, 16(7), 104819.

- Alrawashdeh, L., Kulaib, B. F., Assaf, K. I., El-Barghouthi, M. I., Bodoor, K., Abuhasan, O. M., & Abdoh, A. A. (2023). Cucurbit [7] uril complexes with gabapentin: Effect on lactamization. Journal of Molecular Liquids, 380, 121716.

- El-Barghouthi, M. I., Assaf, K. I., Bodoor, K., Alhamed, D. F., & Alnajjar, M. A. (2023). Computational study on the encapsulation of glucosamine anomers by cucurbit [6] uril and cucurbit [8] uril in aqueous solution. Arabian Journal of Chemistry, 16(6), 104779.

- Yousef, F. O., Ghanem, R., El-Barghouthi, M. I., Abu-Shattal, E. D., Al-Sa'doni, H. H., & Bodoor, K. (2023). Heptakis (2, 6-di-O-methyl)-β-CD as a host of olanzapine: Experimental and computational study. Journal of Molecular Structure, 1276, 134812.

- Verdugo, C., Hayashibara, K. J., El-Barghouthi, M. I., Schacht, K. M., Stoeckman, A. K., Bodoor, K., ... & Al Hourani, B. J. (2024). Novel Secondary Pyridinyl Amides: Synthesis, In Vitro Antiproliferative Screenings, and Molecular Docking Studies. Journal of Molecular Structure, 138062.

- El-Barghouthi, M. I., Hasan, A. S., Al-Awaida, W., Al-Ameer, H. J., Kaur, J., Hayashibara, K. J., ... & Al Hourani, B. J. (2022). Novel therapeutic heterocycles as selective cyclooxygenase-2 inhibitors and anti-cancer agents: Synthesis, in vitro bioassay screenings, and molecular docking studies. Journal of Molecular Structure, 1263, 133141.

- Bodoor, K., El-Barghouthi, M. I., Alhamed, D. F., Assaf, K. I., & Alrawashdeh, L. (2022). Cucurbit [7] uril recognition of glucosamine anomers in water. Journal of Molecular Liquids, 358, 119178.

- El-Barghouthi, M. I., Bodoor, K., Abuhasan, O. M., Assaf, K. I., Al Hourani, B. J., & Rawashdeh, A. M. M. (2022). Binary and Ternary Complexes of Cucurbit [8] uril with Tryptophan, Phenylalanine, and Tyrosine: A Computational Study. ACS omega, 7(12), 10729-10737.

- Bodoor, K., El-Barghouthi, M. I., Assaf, K. I., Al Hourani, B. J., Rawashdeh, A. M. M., Abuhasan, O. M., ... & Abdel-Halim, H. M. (2022). A molecular dynamics study of the complexation of tryptophan, phenylalanine and tyrosine amino acids with cucurbit [7] uril. Journal of Inclusion Phenomena and Macrocyclic Chemistry, 102(1), 159-168.

- Yousef, F. O., Ghanem, R., Al-Sou’od, K. A., Alsarhan, A., Abuflaha, R. K., Bodoor, K., ... & El-Barghouthi, M. I. (2021). Investigation of spectroscopic properties and molecular dynamics simulations of the interaction of mebendazole with β-cyclodextrin. Journal of the Iranian Chemical Society, 18(1), 75-86.

- Albdallah, S. K., Assaf, K. I., Bodoor, K., Al-Sakhen, N. A., Malhis, L. D., Alhmaideen, A. I., & El-Barghouthi, M. I. (2018). Cucurbit [7] uril inclusion complexes with benzimidazole derivatives: a computational study. Journal of Solution Chemistry, 47(11), 1768-1778.

- Yousef, F. O., Ghanem, R., Alshraa, N. H., Al Omari, N. M., Bodoor, K., & El-Barghouthi, M. I. (2017). Effect of pH and α-, β-and γ-cyclodextrin on the spectral properties of etoricoxib: Spectroscopic and molecular dynamics study. Journal of Inclusion Phenomena and Macrocyclic Chemistry, 88(3), 171-180.

- Malhis, L. D., Bodoor, K., Assaf, K. I., Al-Sakhen, N. A., & El-Barghouthi, M. I. (2015). Molecular dynamics simulation of a cucurbituril based molecular switch triggered by pH changes. Computational and Theoretical Chemistry, 1066, 104-112.

- Bodoor, K., Kobus, J., & Morrison, J. (2015). A numerical solution of the pair equation of a model two-electron diatomic system. International Journal of Quantum Chemistry, 115(14), 868-874.

- El-Barghouthi, M. I., Abdel-Halim, H. M., Haj-Ibrahim, F. J., Bodoor, K., & Assaf, K. I. (2015). Molecular dynamics of nor-seco-cucurbit [10] uril complexes. Journal of Inclusion Phenomena and Macrocyclic Chemistry, 82(3), 323-333.

- Bodoor, K., Boyapati, V., Gopu, V., Boisdore, M., Allam, K., Miller, J., ... & Aboul-ela, F. (2009). Design and implementation of an ribonucleic acid (RNA) directed fragment library. Journal of medicinal chemistry, 52(12), 3753-3761.

- Bodoor, K., Weber, H. J., Frederico, T., & Beyer, M. (2000). Violations of Lorentz covariance in light front quark models. Modern Physics Letters A, 15(36), 2191-2204.

- Weber, H. J., & Bodoor, K. (1997). Baryon spin and magnetic moments in relativistic chiral quark models. International Journal of Modern Physics E, 6(04), 693-709.