

CURRICULUM VITAE

Dirar Al Homouz

EDUCATION	<i>University of Jordan, Amman, Jordan,</i>	1988-1991
	B.Sc. in Physics	
	<i>University of Jordan, Amman, Jordan,</i>	1991-1994
	M.Sc. in Physics	
	<i>University of Houston, Houston, TX,</i>	2001-2007
	Ph.D. in Physics,	
ACADEMIC POSITIONS	Assistant Professor, Khalifa University	2010-present
	Postdoctoral Fellow, UTMB,	2009-2010
	Postdoctoral Fellow, University of Houston,	2007-2009
	Research Assistant, University of Houston,	2003-2007
	Teaching Assistant, University of Houston,	2001-2003
	Physics Teacher, UAE,	1996-2001
	Physics Instructor, Philadelphia University, Jordan	1996-1996
	Physics Teacher, Jordan,	1994-1996
	Teaching Assistant, University of Jordan, Jordan,	1991-1994
CURRENT ACADEMIC POSITION	Assistant Professor	September 2010- Present
	Teaching: Physics undergraduate courses. Research: Biophysics of Protein folding, MD simulations of confined geometries, Memristor-based On-chip memory.	
PAST RESEARCH POSITION	Postdoctoral Fellow	June 2009- Present
	Advisor: Prof. Andrzej Kudlicki Research topic: Developing algorithms to analyze the causality between genes based on the measured expression levels from microarray data.	
PAST RESEARCH POSITION	Postdoctoral Fellow	June 2007- May 2009
	Advisor: Prof. Margaret S. Cheung Research topic: Effects of crowding and confinement on protein-protein interactions Department of Physics, University of Houston, Houston, TX	
	<ul style="list-style-type: none">• Studied the effects of macromolecular crowding effects on protein shapes in living organisms.• Studied the effects of crowding on protein folding routes.• Developed new multi-scale molecular simulation algorithms.• Studied the hydrophobic interactions in confined nano-sized water droplets.• Applied for research grants to meet computational needs and funding.	
	Graduate Researcher	June 2002-June 2007
	Thesis advisor: Prof. George F. Reiter, Thesis topic: Proton dynamics in superprotonic conductors	

Department of Physics,
University of Houston, Houston, TX

- Developed a Mixed Quantum Classical Molecular dynamics method to study the real time dynamics of proton conductivity using different propagation methods.
- Implemented Neutron Compton Scattering (NCS) experiments to study the low temperature phase of superprotonic conductors of the family $M_3H(XO_4)_2$. Experiments done on powder and crystal samples of $Rb_3H(SO_4)_2$ and $Rb_3H(SO_4)_2$.
- Implemented NCS and Inelastic Neutron Scattering (INS) experiments to study the high temperature phase of the superprotonic conductors.

Graduate Researcher

July 1994-May 1996

Advisor: Prof. Jamil Khalifeh

Research topic: Electronic and magnetic structure of Vanadium monolayers
Physics Department
University of Jordan, Amman, Jordan

- Studied the magnetic structure of 2D layers of transition metals by calculating the local density of states (LDOS) of the d band electrons. The LDOS was obtained using Hartree-Fock self-consistent calculation of the tight-binding Hubbard Hamiltonian

**TEACHING
EXPERIENCE**

Teaching assistant
University of Jordan

September 1991-June 1994

- Instructed in the General and Analytical Physics Laboratory for undergraduates majored in science, premed, and engineering.

Physics teacher

Public Schools, Amman, Jordan.

September 1994-January 1996

- Worked as high school physics teacher.

Physics Instructor

Philadelphia University, Amman, Jordan

January 1994-September 1996

- Instructed in the General Physics Laboratory for undergraduates majored in engineering.
- Instructed in Physics 101 for undergraduates majored in engineering.

Physics teacher

Public Schools, Fujairah, UAE.

September 1996-September 1998

- Worked as high school physics teacher.

Physics teacher

Air Secondary School, Al Ain, UAE

September 1998-June 2001

- Worked as high school physics teacher.
- Developed a new course curriculum to teach the introduction to physics high school air force cadets.

Teaching assistant
University of Houston

September 2001-May 2003

- Assisted in the Physics Laboratory.
- Graded papers.

Part time Physics Instructor
University of Houston

Summer 2008

- Instructed in the Physics 1301 for premed student.

Adjunct Faculty
University of Houston at Clear Lake

Fall 2008

- Instructed in the Advanced Classical Mechanics for graduate students.

Assistant Professor
Khalifa University

Fall 2010 -

COURSES TAUGHT

- 1) College physics
- 2) Physics I (Algebra based)
- 3) Physics I (Calculus based)
- 4) Physics II (Calculus based)
- 5) Engineering Statistics (Probability Statistics)
- 6) Linear algebra and Differential equations
- 7) Classical Mechanics (Graduate level course)