

AHLAM AL-RAWI

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ACADEMIC DEGREES

- Ph.D. Physics
Kansas State University, Manhattan, KS October, 2000
Dissertation Title: "Theoretical Study of Anharmonic Effects on Metal Surfaces."
- M.S. Physics
The University of Aston in Birmingham, UK October, 1982
Thesis Title: "Measurement of Radial Profile of the Fast Ions and Neutrals Produced by Saddle Field Ion Source."
- B.S. Physics
Al-Mustansariya University, Baghdad, Iraq September, 1975

RESEARCH AND OUTREACH EXPERIENCE

- Outreach Coordinator, Dept. of Physics, University of central Florida 2010-present
- Research Assistant Professor Dept. of Biochemistry, Kansas State University 2008-2009
- Adjunct Research Assistant Professor, University of central Florida 2007-2010
- Research Associate Dept. of Biochemistry, Kansas State University 2007-2008
- Research Associate, Dept. of Physics, Kansas State University 2000-2007
- Research Assistant, Dept. of Physics, Kansas State University 1993-2000

TEACHING EXPERIENCE

- Responsible for TA's Training 2011-present
- Engineering physics II Scale-Up University of Central Florida 2012-present
- Engineering physics I lecture-University of Central Florida Fall 2010
- Engineering physics II lecture-University of Central Florida Spring 2011
- General Physics II lecture-Boston University Summer II (2005-present)
- General Physics I lecture-Boston University SummerI (2005-present)
- Bioch758-Protein Structure Lab Spring 2007
- General Physics II recitation Spring 2006
- General Physics I recitation Fall 2005
- Instructor, Dept. of Physics, Kansas State University 2001-2002
 - General Physics I lecture Summer 2003
 - General Physics II recitation Spring 2002
 - General Physics I recitation Fall 2001
 - Descriptive Physics recitation Spring 2001
- GTA, Dept. of Physics, Kansas State University 2001-2002
 - Engineering Physics I studio Fall 2000
 - Engineering Physics I lab Fall 1997
 - General Physics recitation Summer 1996

- Engineering Physics II recitation Spring 1996
- Engineering Physics I recitation Fall 1995
- Heat and Thermodynamics Coordinator, Dept. of Physics, Al-Mustansariya 1983–1986
 - Built and Directed the “Heat and Thermodynamics” lab 1985
- Lab Instructor, Dept. of Physics, Al-Mustansariya 1975–1981
 - Heat and Properties of Matter 1980–1981
 - Advanced Physical Optics 1979–1980
 - Electronics 1977–1979
 - Electricity and Magnetism 1976–1977
 - Geometrical Optics 1975–1976

PROFESSIONAL MEMBERSHIPS

- Biophysical Society
- Association for Women in Science
- Sigma Xi

COMMITTEES AND ACTIVITIES

- Chair of the outreach Committee, 2011-present
- Chair of the undergraduate affairs Committee, 2012-present
- Graduate Student Body Representative to the Faculty Advisory Committee, KSU 1999–2000
- President Physics Graduate Student Body, KSU 1997–1999
- Vice President Student Body, College of Arts and Sciences, Al-Mustansariya University 1970–1975

AWARDS AND FELLOWSHIPS

- Graduate Fellowship, Al-Mustansariya University, for study at University of Aston 1981
- Best Lab Instructor, Al-Mustansariya University 1977

DIVERSITY AND GENDER ISSUES

- Special Assistant to the Dean of Engineering Kansas State University 2004
- Interim Director of WESP (Women in Engineering and Science Program) Kansas State University 2003–2004
- Seeking a Career in Science and Engineering 2003–2004
 - Served on College of Engineering Advisory Council
 - Served on Multicultural & Diversity Committee
- Director of Female Education, Baghdad, Iraq 1978–1979

VOLUNTEER EXPERIENCE

- Organized Panel Discussion, “Muslim Women Uncovered” February, 2005
- Organized Iraq Book Drive November, 2004
- Organized “Arabic Dinner” fundraiser to ship textbooks to Iraq November, 2004
- Organized “Ramadhan Night” November, 2003

- Presented in Girl Scouts International Week, Manhattan 2001
- Participated in the GROW (Girls Researching Our World) program, KSU Summer, 2001
- Volunteered teaching assistant at Moore Elementary School, Ft. Collins, CO 1990–1991
- Volunteered for six months in a hospital in Baghdad nursing victims of the Iran-Iraq War 1980
- Developed educational programs for women in villages surrounding Baghdad focusing on their rights and general education 1978–1979

OUTREACH AND DEVELOPMENT

- Organized a career day for high school students and their parents October 2013
- Developed a program for middle school students to introducing them to programming 2011-present
- Help in a program to introduced STEM education for middle school students 2010-present
- Presented Islamic Art and Science to Marlatt Elementary School, March 2007
- Presented to an Outreach and Development class in Wamego Community College, October 2005, 2006
- Organized ROPE (Research Outreach in Physics Education), an outreach program targeted towards high school students, 2006
- Developed a computational tool kit to communicate essential scientific concepts in my work to graduates and undergraduates, 2003
- Member of GROW committee (Girls Researching Our World) - Program for girls between ages 12–14 to encourage them to explore science and technology, 2003
- Was directly involved in the gifted program of local public schools and worked with gifted coordinators by building a communication network between the school district and university, 2003-present
- Organized regular visits for high school students to tour university facilities and become involved in projects in physics and engineering, 2003
- Organized Starfest, a program allowing K12 students and their families to enjoy astronomy and become directly involved in exploring science with their children, Summer 2003

TRAINING

- Participated in the NSF Proposal Writing and the Evaluation-Broader Impacts Workshop April 2010
Kansas State University
- Attended Molecular Modeling Workshop July, 2006
University of California, San Diego
- Participated in the NSF Proposal Writing and the Evaluation-Broader Impacts Workshop
- Attended Computational Biophysics Workshop November, 2005
Pittsburgh Supercomputing Center
- Attended a year-long Workshop in Learning-Enhancement Action/Resources Network 2003-present
Kansas State University
- Attended a one-day Workshop in Community and Leadership with Margaret Wheatley April 2004
Kansas State University
- Attended a course in Teaching University Physics Fall 2002
Kansas State University
- Attended Summer School on Computational Materials Science: Electronic Structure-Based Simulation
UIUC, Urbana-Champaign, IL May 1999

- Basic Nurse Training
Baghdad, Iraq

Summer, 1978

LANGUAGES

Fluent in Arabic and English.

SELECTED PUBLICATIONS

- A. I. Herrera, N. Al-Rawi, G. A. Cook, Jian Gao, Takeo Iwamoto, Om Prakash, J. M. Tomich, and Jianhan Chen " Structural Characterization of Two Pore-Forming Peptides: Consequences of Introducing a C-Terminal Tryptophan", *Proteins*, **Published Online**: 31 Mar 2010
- N. Al-Rawi and T. S. Rahman, "Comparative theoretical Study of the Structure and Vibrational Dynamics and thermodynamics of Cu₃ Au Vicinal surfaces,". To be submitted to *Physical Review B*.
- X. Mo, Y. Hiromasa, A. N. Al-Rawi, M. Warner, T. Iwamoto, T. S. Rahman, X. Sun and J. M. Tomich. " Design of Bio-Based 11- Residue Adhesive Peptides with Different Properties: Induced Secondary Structure in the Absence of Water ". *Biophysical Journal*, Volume 94, Issue 5, 1807-1817, 1 March 2008.
- Karim, A. Al-Rawi, A. Kara, and T. S. Rahman, "Diffusion of small two-dimensional Cu islands on Cu(111) studied with a kinetic Monte Carlo method ", *Physical review B* 73, 165411 (2006).
- N. Al-Rawi, A. Kara, and T. S. Rahman, "Theoretical Study of the Structure and Vibrational Dynamics of Cu₃ Au(511)," *J. Phys. Condens. Matter*, 16:2967 (2004).
- Kara, A. Al-Rawi and T. S. Rahman, "Vibrational Dynamics and Excess Entropy of Multi-grain Nanoparticles," *J. of Comput. Theor. Nano.*, 1, 216–220(2004).
- Kara, A. Al-Rawi, and T. S. Rahman, "Phonons of Multi-Grained Metallic Nanocrystals," *J. Comput. Theor. Nanosci.* 1, 216 (2004). cles," *J. of Comput. Theor. Nano.*, 1, 216–220(2004).
- T. S. Rahman, J. Spangler and A. Al-Rawi, "Temperature Variation of Surface Phonon Linewidth: low Miller index surface of Ag and Cu," *Surface Science* 502–503, 429–436 (2002).
- T. S. Rahman, J. Spangler and A. Al-Rawi, "Theoretical Studies of the Surface Phonon Linewidth," *J. of Physics: Condensed Matter* 14, 5903–5912 (2002)
- Al-Rawi, A. Kara, and T. S. Rahman, "Comparative Study of the Anharmonic Effects on Ag(111), Cu(111), and Ni(111)," *Physical Review B* 66, 165439 (2002).
- Al-Rawi, A. Kara, P. Staikov, C. Gosh, and T. S. Rahman, "Validity of the Quasiharmonic Analysis for Surface Thermal Expansion of Ag(111)," *Physical Review Letter* 86, 2074 (2001).
- T. S. Rahman, A. Kara, A. Karim and A. Al-Rawi, "Paths, Barriers, and Prefactors for Adatom Descent from Ag Clusters on Ag(111)," *Collective Diffusion on Surfaces: Correlation Effects and Adatom Interactions* 327–38 (2001).
- Al-Rawi, A. Kara and T. S. Rahman, "Anharmonic Effect of Ag(111): A Molecular Dynamics Study," *Surface Science* 446, 17–30 (2000).
- Kara, P. Staikov, A. Al-Rawi and T. S. Rahman, "Thermal Expansion of Ag(111)," *Physical Review B* 55, 13440 (1997).

INVITED PRESENTATIONS

- A. Al-Rawi, "The Muslim Woman Uncovered," Martin Luther King Jr. Week; (invited by the associate provost of diversity and dual-career). Kansas State University (January 2005)

- A. Al-Rawi and T.S. Rahman, “Diffusion on Metal Surfaces,” Association for Women in Science, Kansas Flint Hills Chapter, Kansas State University (October 1999)
- A. Al-Rawi, “GTA Orientation,” Graduate School, Kansas State University (August 1998)
- A. Al-Rawi, “Teaching Science,” Baghdad School District, Baghdad, Iraq (July 1980)

LAST FIVE YEARS CONFERENCE PRESENTATIONS

- A. N. Al-Rawi, B. Urbanc, D. Ganguly, T. S. Rahman, J. Chen, and J. Tomich. “Molecular Dynamics Simulations of a Single 11-Residue Beta-Sheet Adhesive and its Assembly” Biophysical Society, Boston (March 2009)
- N. Al-Rawi, A. H. Al-Rawi, A. I. Herrera, J. Chen, J. M. Tomich, T. S. Rahman. “Simulation of Pore Structures for Two M2GlyR-Derived Channel-Forming Peptides in POPC Bilayers”, American Physical Society, New Orleans (March 2008)
- N. Al-Rawi, A. I. Herrera, N. Noury, T. S. Rahman, J. M. Tomich. “Molecular Dynamics Simulations of Channel Forming Peptide in POPC Membrane”, American Physical Society, Denver (March 2007)
- N. Al-Rawi, A. I. Herrera, N. Noury, T. S. Rahman, J. M. Tomich. “Simulations of the Pore Structures for a M2GlyR Derived Channel Forming Peptide in Different Membrane Environments”, Biophysical Society, Baltimore (March 2007)
- I. Herrera, G. A. Cook, Ahlam Al-Rawi, S. J. Frazier, M. De Leon-Arizpe, T. Iwamoto, O. Prakash, B. Schultz, J. M. Tomich. “Structural and Activity Consequences Upon Addition of a Membrane Anchoring Residue at the C-terminus of M2GlyR Channel Forming Peptide Sequences”, Biophysical society, Baltimore (March 2007)
- R. Soong, A. I. Herrera, A. Majumdar, A. N. Al-Rawi, J. Tomich, and K. Hristova. “Towards High-Resolution Structure of FGFR3 Transmembrane Domains through 1H-1H NOESY and TOCSY NMR Studies”, Biophysical society, Baltimore (March 2007)
- N. Al-Rawi, T. S. Rahman, and J. M. Tomich. “First Step into Biophysics, Molecular Dynamics Simulations”, Kansas State University (November. 17, 2006)
- Al-Rawi, A. Kara, and T.S. Rahman, KSU, “Study of the Dynamics of Cu₃ Au Vicinal” Rolla Missouri (October 2003).
- Al-Rawi, Antti-Pekka Hynninen, T.S. Rahman, and T. Ala-Nissila, KSU and H. Over and Y.D. Kim, Fritz Haber Institute, Berlin, “Basic Concepts on Surface Diffusion.” Condensed Matter Seminar, Physics Department, Kansas State University (Nov. 8, 2002).
- Al-Rawi A.H. Mohammad, A. Kara and T.S. Rahman, “Calculation of Helmholtz Activation Free Energy from Molecular Dynamics Simulations: Adatom Diffusion on (100) and (111) surfaces of Cu and Ag,” American Physical Society March Meeting, Indianapolis, MN (March 2002)