

# Curriculum Vitae

**Name** : **KHALED A. TOUKAN**  
**Place of Birth** : Amman - Jordan  
**Date of Birth** : November 26, 1954  
**Nationality** : Jordanian  
**Marital Status** : Married with three children  
  
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## EDUCATION

- 1978-1982 Massachusetts Institute of Technology, Cambridge, MA.  
Ph.D. in Nuclear Engineering, with Minor in Energy Policy Awarded June, 1982. Thesis Entitled "*Interatomic Interactions and Dynamics of Atomic and Diatomic Lattices*" Under the Supervision of Professors Sow-Hsin Chen and Sidney Yip.
- 1976-1978 University of Michigan, Ann Arbor, MI  
M.Sc. Degree in Nuclear Engineering, Awarded April, 1978. Master's Project in the Field of Fusion Technology.
- 1971-1976 American University of Beirut, Lebanon.  
B.E. Degree in Electrical Engineering, Awarded June, 1977.

## EXPERIENCE

- 2011 Minister of Energy & Mineral Resources
- 2008-2011 Chairman, Jordan Atomic Energy Commission
- 2000-2007 Minister of Education
- Administered Half a Billion US Dollars Education Reform for the Knowledge Economy Jordanian Program.
  - Chair of Royal Commission for Jordan Information Technology Community Centers.
  - Chair of Royal Commission for Retired Military Veterans Information Technology Training.
- 2005-2007 Minister of Higher Education and Scientific Research.  
2001-2002 Minister of Higher Education and Scientific Research.
- 2006-2007 Chair of the National Nuclear Energy Technical Committee.
- 2005-Present Director of SESAME (Synchrotron-Light for Experimental Science and Applications in the Middle East).
- 2003-2005 Acting Director of SESAME.

- 1998–2005 Jordan Representative to SESAME Council.  
Vice-Chairman of SESAME Council.
- 2005-present Member of Cyprus Research and Education Board Chaired by the President of Cyprus.
- 2004 - 2005 Member of the National Agenda Royal Committee.
- 2002 - 2002 Member of International High Level EFA Group.
- 1999- 2004 Member of H.M. King Abdullah II Economic Consultative Council.
- 1997-2001 President, Al-Balqa' Applied University.
- 1995-1997 Acting Dean, Faculty of Engineering & Technology, University of Jordan.
- 1994-1994 Research Scientist, Kernforschungszentrum Karlsruhe.
- 1993-1995 Vice Dean, Faculty of Engineering & Technology, University of Jordan.
- 1990-1993 Chairman, Department of Industrial Engineering, Faculty of Engineering & Technology, University of Jordan.
- 1984-1986 Associate Research Scientist, Energy Research Laboratory Development Group, University of Petroleum and Minerals, Saudi Arabia.
- Worked on the Development of a Low Energy Ion Beam Accelerator.
- 1983-1984 Research Associate, Intense Pulsed Neutron Source, Argonne National Laboratory, Argonne, IL.
- Postdoctoral Fellow, Nuclear Engineering Department,, Massachusetts Institute of Technology, Cambridge, MA.
- Worked on an Experiment of Inelastic Neutron Scattering from Supercooled Water.
- 1979-1982 Research Assistant, Nuclear Engineering Department, Massachusetts Institute of Technology, Cambridge, MA.
- Worked on a Project in Lattice and Molecular Dynamics.

## **TEACHING**

- August, 1997 University of Jordan, Amman, Jordan, Professor of Industrial Engineering.
- 1987-1997 University of Jordan, Amman, Jordan, Associate Professor of Industrial Engineering. Instructed Courses in Automatic Control, System Dynamics and Nuclear Engineering. Supervised Master's Theses Projects in Nuclear Physics.
- 1985-1986 University of Petroleum and Minerals, Saudi Arabia. Instructed Courses in Undergraduate Physics.
- 1982-1983 Yarmouk University, Irbid, Jordan. Assistant Professor, School of Engineering. Instructed Courses in Instrumentation, Energy Conversion and Physics.

1979-1980 Massachusetts Institute of Technology, Cambridge, MA. Instructor for the Nuclear Measurements Laboratory, Teaching Assistant for Graduate Courses in Nuclear Physics.

### **DECORATIONS**

- KING HUSSEIN MEDAL FOR DISTINGUISHED ACHIEVEMENT, Granted by H.M.King Abdullah II, 2008.
- COMMANDER'S CROSS OF THE ORDER OF MERIT OF THE FEDERAL REPUBLIC OF GERMANY, Granted by H. E. Horst Köhler the President of the Federal Republic of Germany 2006.
- L'ORDRE NATIONAL DE LA LEGION D'HONNEUR, AU GRADE DE COMMANDEUR, Granted by H.E.M. Jacques Chirac President of the French Republic, 2004.
- UNESCO GHANDI MEDAL OF PEACE, Granted by H. E. Koichiro Matura Director General of UNESCO, 2003.
- ROYAL GRAND GORDON OF ALKUKAB AL-URDNI, Granted by H. M. King Abdullah II, 2003.

### **AWARDS**

HONORARY PROFESSOR of the L.N. Gumilyov Eurasian National University of the Republic of Kazakhstan, June 2007.

DISTINGUISHED ALUMNUS AWARD, American University of Beirut, 2004, for Outstanding Accomplishments in Education, Public Service and Engineering.

THEOS J. THOMPSON MEMORIAL FELLOWSHIP, Granted for the Academic Year of 1980-81 by the Department of Nuclear Engineering at M.I.T. for an Outstanding Graduate Student of Nuclear Engineering.

### **HONORARY FELLOWSHIP**

The Royal Scientific Society, The Hashemite Kingdom of Jordan, 2004.

### **CITATIONS**

Citations as listed in the Science Citation Index Published by the Institute of Scientific Information, Philadelphia, PA, 19104 USA.

1. 330 Scientific Citations for Publication No. 5.
2. 600 Scientific Citations for all Publications.

### **REFERENCES**

- Kochiro Matura  
DG UNESCO
- Mohammed Al-Baradei  
DG IAEA
- Herwig Schopper  
Chairman of SESAME International Council

### **PUBLICATIONS**

- 1- Toukan, K., Chen, S., "*Lattice Dynamics of Halogen Crystals*", Molecular Physics, 1981, Vol. 44, pg. 693-707.
- 2- Toukan, K., Chen, S., "*An Interatomic Potential Model for Halogen Crystals*", Molecular Physics, 1982, Vol. 47, pg. 457-473.
- 3- Toukan, K., Carrion, F., Yip, S., "*Molecular Dynamics Study of Structural Instability of Two Dimensional Lattices*", Journal of Applied Physics, 1984, Vol. 56, pg. 1455-1461.
- 4- Chen, S., Toukan, K., Loong, C.K., Price, D., and Teixeira, J., "*Hydrogen Bond Spectroscopy of Water by Neutron Scattering*", Physical Review Letters, 1984, Vol. 53, pg. 1360-1363.
- 5- Toukan, K., Rahman, A., "*Molecular Dynamics Study of Atomic Motions in Water*", Physical Review B, 1985, Vol. 31, pg. 2643-2648.
- 6- Toukan, K., Chen, S., Yip, S. "*Hard-Sphere Kinetic Theory Analysis of Neutron Scattering Data in Neon*", Molecular Physics, 1985, Vol. 55, pg. 1421-1430.
- 7- Chen, S., Toukan, K., Loong, C.K., Price, D. and Teixeira, J., "*Proton Dynamics in Supercooled Water II*", Argonne National Laboratory, IPNS Progress Report 1983-85, 68.
- 8- Ricci, M., Chen, S., Price D., Loong, C.K., Toukan, K., and Teixeira J., "*Observation and Interpretation of H-Bond Breaking by Neutron Scattering*", Physica, 1986, Vol. 136B, pg. 190-193.
- 9- Bansil, R., Berger, T., Toukan, K., Ricci, M., and Chen, S., "*A Molecular Dynamics Study of the OH Stretching Vibrational Spectrum of Liquid Water*". Chemical Physics Letters, 1986, Vol. 132, pg. 165-172.
- 10- Toukan, K., Ricci, M., Chen, S.H., Loong, C.K., Price, D., and Teixeira, J., "*Neutron-Scattering Measurements of Wave-Vector Dependent Hydrogen Density of States in Liquid Water*". Physical Review A. 1988, Vol. 37, pg. 2580-2589.
- 11- Toukan, K., Kappeler, F., "*Stellar Neutron Capture Cross Sections of  $^{94}\text{Zr}$  &  $^{96}\text{Zr}$* ", The Astrophysical Journal, 1990, Vol. 348, pg. 357-362.
- 12- Toukan, K., Reijers, H.T.J., Price, D.L., Saboungi, M.L., "*Atomic Motions in Liquid KPb- A Molecular Dynamics Investigation*", Physical Review B, 1990, Vol. 41, # 17, pg. 11739-11742.
- 13- Dababneh, S., Taffal, F., Safi, F.M., Toukan, K., Fakhoury, H., and Khubeis, I. "*Studies of the Nuclear Reaction  $^{19}\text{F} (p, \alpha \gamma) ^{16}\text{O}$  in the Proton Energy Range 0.3-3.0 MeV*", Proceedings of the 2nd International Symposium on Nuclear Astrophysics, Karlsruhe, July 6-10/1992, pg. 155-160.
- 14- Safi, F., Taffal, F., Toukan, K., Dababneh, S. Fakhoury, H. and Khubeis, I. "*Angular Distribution and Yield Studies of the  $^{19}\text{F} (p, \alpha_0) ^{16}\text{O}$  and  $^7\text{Li} (p, \alpha) ^4\text{He}$  Nuclear Reactions in the Proton Energy Range 0.3-3.0 MeV*", Proceedings of the 2nd International Symposium on Nuclear Astrophysics", Karlsruhe, July 6-10/1992, pg. 161-168.

- 15- Dababneh, S., Toukan K. and Khubeis, I. "*Excitation Function of the Nuclear Reaction  $^{19}\text{F} (p, \alpha \gamma) ^{16}\text{O}$  in the Proton Energy Range 0.3-3.0 MeV*", Nuclear Instruments and Methods in Physics Research B 1993, Vol. 83, pg. 319-324.
- 16- Toukan, K., Debus, K. and Kappeler, F., "*The keV Neutron Capture Cross Sections of  $^{146}\text{Nd}$ ,  $^{148}\text{Nd}$ , and  $^{150}\text{Nd}$* ", Proceedings of the Third International Conference on Nuclear Astrophysics, Gran Sasso, Italy, July 1994, , pg. 291-294.
- 17- Toukan, K., Debus, K., Kappeler, F. and Reffo G., "*Stellar Neutron Capture Cross Sections of Nd, Pm, and Sm Isotopes*", Physical Review C., 1995, Vol. 51, pg. 1540-1550.
- 18- Kappeler, F., Toukan, K., Schumann, M. and Mengoni, A., "*Neutron Capture Cross Sections of the Cerium Isotopes for s-and p-Process Studies*", Physical Review C., 1996, Vol 53, pg. 1397-1408.
- 19- Toukan, K., Kappeler, F., Schumann, M. and Mengoni, A., "*Stellar (n,  $\gamma$ ) Cross Sections of Ce and Pr Isotope*" , Presented at the Fourth International Conference on Nuclear Astrophysics, The University of Notre Dame, June 1996.
- 20- Khubeis, I., Toukan K., Al-Rjob R., "*Oxygen Depth Profiling Using the  $^{16}\text{O}(d, \alpha)^{14}\text{N}$  Nuclear Reaction*", Journal of Alloys and Compounds, 1997, Vol. 251, pg. 111-113.
- 21- Toukan K., Khubeis, I., Al-Zubi F. , Al-Sa'adi M., Dababneh S., Bakraji E., and Meyer O., "*Diffusion Behaviour of Gold and Mercury Implanted into Magnesium*". Nuclear Instruments and Methods in Physics Research B 1997, Vol. 127/128, pg. 747-751.
- 22- Toukan K., Dababneh S., Abdel Karim R. and Khubeis I., "*Characterization of Lead, Mercury and Gold Implanted into Magnesium*", Radiation Effects and Defects in Solids, 1997, Vol. 143, pg. 167-178.
- 23- Al Hamarneh, I., Wreikat, A., Toukan, K., "*Radioactivity Concentrations of  $^{40}\text{K}$ ,  $^{134}\text{Cs}$ ,  $^{137}\text{Cs}$ ,  $^{90}\text{Sr}$ ,  $^{241}\text{Am}$ ,  $^{238}\text{Pu}$  and  $^{239+240}\text{Pu}$  Radionuclides in Jordanian Soil Samples*", Journal of Environmental Radioactivity, 2003, Vol. 67 (1), pg. 53-67.