



Curriculum Vitae

Personal status

Name: Burhan Rashid Nori Al Shafaay
Date and Place of Birth: 21th April 1966/ Babylon-Iraq
Citizenship: Iraqi
Marital status: Married

Personal Address: Kerbala- Iraq

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Passport No: A11433030

Professional address: Kerbala University-College of Education for Pure Sciences,
Headmaster of Physics Department/Kerbala- Iraq:

Academic References

1-Prof. Fouad El Haj Hassan, head of the condensed matter laboratory in faculty of Sciences (I) at the Lebanese University. Tel. number: 00 961 5 460494, Fax: 00 961 5 461496, E-mail: hassan.f@ul.edu.lb

2- Prof. Mahmoud El Korek, Work Experience 9/1979–up till now: Concordia University, Canada. American, University of Beirut, Beirut, Lebanon. Lebanese's University, Lebanon. Beirut Arab University, Beirut, Lebanon. Tel. number: +961 1 737170, +961 3 747617

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Academic Rank: Assistant professor.

Language: Arabic and English.

Qualifications

-November 1989: BSc. in Physics (Al Mustansiriyah University)- Iraq.

- January 2002: MSc. (Baghdad University)-Iraq.

- June 2014: Ph.D thesis in materials sciences and molecule (Beirut Arab University (BAU)Lebanon).

Thesis: « Theoretical Studies of the Fundamental Properties of Hg Chalcogenides HgX ($X = S, Se, Te$) and Their Alloys »

-Accurate Specialist of PhD. Materials and Molecular

Computational methods

1. In our research, we use the program package WIEN2k which allows performing electronic structure calculations of solids using density functional theory (DFT). It is based on the full potential (linearized) augmented plane-wave ((L) APW) + local orbitals (lo) method, one among the most accurate schemes for band structure calculations. In DFT the local (spin) density approximation (LDA) or the improved version of the generalized gradient approximation (GGA) can be used. WIEN2k is an all-electron scheme including relativistic effects and has many features.

2. We use also a PWscf (Plane-Wave Self-Consistent Field) program package which is a set of programs for electronic structure calculations within Density-Functional Theory and Density-Functional Perturbation Theory, using a Plane-Wave basis set and pseudopotentials.

Teaching experiences

Thermodynamic	3 rd year	Physics
Amorphous	3 rd year	Physics
Materials	2 nd year	Physics
Heat and Material properties	1 st year	Physics

Electricity and Magnetism	1 st year	Physics
Mechanics	1 st year	Physics
Physics	1 st year	Chemistry
Calculus	1 st year	Mathematic

Publications and Conferences

- 1) - **“Nonconventional electromagnetic lens”, B. Al Shafaay and Al saadi.**Second Scientific Conference of KerbalaUniversity 2006.
- 2)- **“Study the effect of temperature and frequency on some dielectric constant properties for wood of palm tree”, B. Al Shafaay.** Journal of Kerbala University Vo.5 No.1, 2007
- 3) - **“Study some dielectric properties for wood of the tree of olive”, B. Al Shafaay.** Journal of Kerbala University Vo.5 No.2, 2007
- 4) - **“Study dielectric constant of mineral clay type Attabullgite”, B. Al Shafaay,** Abbas Matrood and Haider Hameed. Journal of Kerbala University Vo.5 No.4, 2007
- 5) - **“Study physical and chemical properties of some kinds of local and imported honeys”, B. Al shafaay,** Luma Ahmed and Zena Mohamad. Journal of Al- Qadisiya/pure sciences Vol.12, No.4, 2008
- 6) - **“Preparation of Anorthite Ceramics from Local Raw Materials” B. Al shafaay,** Fadhil A. Rasin and Muamar Abdu Al-Aziz. The Second Conference of Karbala University 2008.

- 7) - **“Study effect of annealing on forbidden energy gap and optical constants for ZnS thin film prepared by thermal chemistry analysis”, B. Al Shafaay,** Ali Sadam and Falah Hassan. Journal of Kerbala University 2009

- 8) - **“Studying the effect of doping and radiation on optical properties of ZnS thin films prepared by chemical spray pyrolysis”, B. Al Shafaay.** JOURNAL OF KUFA – PHYSICS Vol.2, No.1 (2010).
- 9) - **“Ab initio Study of the fundamental properties of HgSe, HgTe and their HgSe_xTe_{1-x} alloys” B. Al Safaay,** F. El Haj Hassan, S.Ghemid, H.Belkhir and M. Korek.J. Phys. Scr. 84 (2011) 065601 (7pp).
- 10) - **“Preparation of Organometallic Compounds from Schiff Bases and Study their Thermal Properties as a Function of Temperatures” Abdul-Aziz O. Musa Mohammed,** H. Abbas, and **B. Al Shafaay.** Journal of Babylon University/Pure and Applied Sciences/ No. (1)/ Vol. (22): 2012 College of Science/Babylon University Scientific Conference.
- 11) - **“Electronic structure of a metal compounds.” B. Al Shafaay,** Fouad El hajj Hassan and MahmoudEl Korek. The 18th International Conference of the Lebanese association for the Advancement of Science Beirut – Lebanon, March 24, 2012.

- 12) - **“First principle investigation of mercury chalcogenides and their HgS_xSe_{1-x} and HgS_xTe_{1-x} ternary alloys” B. Al Shafaay,** F. El Haj Hassan and M. Korek. J. Computational Materials Science 83 (2014) 107–113.
- 13) - **“Study of Radon and Radium Concentration in Water Samples in Some Regions of Lebanon” Abdalsattar K. Hashim,** **B. Al Safaay**and Fadhil K. Fulyful. Journal of Kerbala University, Vol. 12 No.2 Scientific, 2014.
- 14) - **“Determination of Uranium Concentration, Radium Content and Radon Exhalations Rates in Soil Samples for someRegions in Lebanon” B. Al Shafaay,**Abdalsattar K. Hashim and Fadhil K. Fulyful. J. Al-Kufa Journal of Physics.Vol.8 ,No.1, 2014.

- 15) - **“Structural, electronic, mechanical and thermodynamic properties of CdS compound” B. Al Shafaay,** J. Chem. Bio. Phy. Sci. Sec. C, Aus. 2014 – Oct. 2014; Vol.4, No.4; 0000-0000.
- 16) - **“Density functional study of TiNcompound:mechanical and thermal properties” B. Al Shafaay,** Salman Mahmoud, A. M. Al Saeedi and F. El Haj Hassan. *IPASJ International Journal of Information Technology (IJIT)*, Volume 2, Issue 9, September 2014.
- 17) -Conference **“MEDGREEN-LB2011” April 14th -16th El- Hadath, Beirut –Lebanon,**Lebanese university, Attendance.

- 18) - The 25thInternationalConference on Microelectronics, IEEE ICM 2013, *December 15th-18th,* Beirut,Lebanon, Attendance.

19) –“**Theoretical evaluation of electron transfer rate constant at $C_{23}H_{17}F_8N_8O_2PRu$, $C_{44}H_{30}BF_4N_5O_4Ru$, $C_{56}H_{52}Cl_5N_5OO_5P_2$ and $C_{76}H_{88}F_{80}N_{24}O_{11}P_{10}Ru_4$ Nitrosyl Complexes**”. Hadi J. M. Al-Agealy, **Burhan R. Al Shafaay**, Mohsin A. Hassooni, Ahmed Mousa A. 3th Science Conference of Colloge of Education for Pure Sciences/ Kerbala University, April 2014.

20) - “**Influence of Substrate Temperature on Structure and morphology of Thermally Evaporated Nano C60 Thin Films**”, Ali Jalaukhan, Talib Abdulridha Abdulwahid, **B. Al Shafaay**. 6th International Conference on Nanostructures (ICNS6) 2016, March 7th-10th, Kish Island- Iran.

21) –“ **Theoretical Study of Electronic Transfer rate constant At Solar Cell**” Hadi J.M Al-agealy, Mohsin A. Hassooni Ahmed, A. shweik, B. Alshafaay Raad H. Mjeed, Abbas K. Sadoon. Mesopo. Environ. j., Special Issue C :24-33, 2017 , proceeding of 1st National conference of science and Art. University of Babylon, Mesopotemia Environmental journal /journal homepage: www.bumej.com

22)- “**Effect addition Al₂O₃ on the (A.C, D.C) Electrical Properties of Ethylene-Alpha Olefin Copolymer**“. Bahaa H. Rabee-Bairaq Abd Al-Kareem and B. Al Shafaay. International Journal of Science and Research (IJSR (ISSN (Online): 2319-7064 Index Copernicus Value (2015): 78.96 .

23)-“ **Theoretical study of Charge Transfer Simulation at Fe Metal with Ge and ZnO Semiconductors Nano devices Material**”. Hadi J.M Al-agealy, Taif Saad AL Maadhede, B. Al Shafaay, Raad H. Mjeed and Ahmed M. Ashweik . ScienceDirect/ Energy Procedia 119 (2017) 325-331.

24)-“**Theoretical study of electron transfer rate at Ag/ITO and Ag/ GaAs Devices**”. Hadi J. M. Al-agealy, B. Alshafaay, Mohsin A. Hassooni , Abbas K. Sadoon and Ahmed M. Ashwiekh, First International Science Conference for College of Education for Pure Sciences, 12-13 April 2017/Kerbala University.

25)-“**Theory of charge Current Transition at interface of TCNQ Molecules with GaAs and InAs Semiconductor at Rang (260nm-340nm)**”. Hadi J. M. Al-agealy, Mohsin A. Hassooni , B. Alshafaay, , Abbas K. Sadoon, Ahmed M. Ashwiekh, Raad H. Majeed, Rawnaq Q. Ghadhban and Shutha H. Mahdi . , First International Science Conference for College of Education for Pure Sciences, 12-13 April 2017/Kerbala University.

26)-“**Theoretical Calculation including a standard electron energy distribution function and the transport parameter in a weakly ionized plasma gases**”. Raad H. Majeed, Enas A. Jawad, Rawnaq Q. Ghadhban B. Alshafaay and Abbas K. Sadoon . First International Science Conference for College of Education for Pure Sciences, 12-13 April 2017/Kerbala University.

27) “**Theoretical discussion of electron Transport rate constant at TCNQ/Ge and TiO₂ system**”. 1st International Science Conference of Ibn –Al Haitham College /Baghdad University 13-14 December 2017.

-Member of many committees of Ph.D., MSc. Degree and proposal of Ph.D. students.

- Member of the Iraqi Society of Nanotechnology.

- Member of the Iraqi Physics and Mathematics Society.

- Reviewer and organization committee member of the 3rd Conference Science of college of Education for Pure Sciences April 2015.

- Reviewer and organization committee member of the 4th Science Conference and the 1st International of college of Education for Pure Sciences April 2017.

- Reviewer of the” journal of kerbala university “. Publisher Kerbala university.

Research under publish:

- 1- "Theoretical estimation of charge transfer rate at some Nitrosyl Complexes".
- 2- "Density functional study of HgS compound: Structural, electronic and thermal properties".
- 3- "Theoretical discussion of electron transport rate constant at TCNQ/GE, TiO₂ system".