|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | First | Father | Grandfather | Family |
| Name: | **Omar** | **Marzouq** | **Mohammed** | **Al-Dossary** |

**Nationality**: **Saudi**

Department of : **Department of** **Physics & Astronomy**

College of: **Science**

University: **king Saud university**

Current Academic Rank:  **Professor**

**B.A./B.Sc.**

University: **KSU**  College: **Science**

University Location (City/State/Country): **Riyadh-KSA**

Date of Obtaining Degree: **9**  **/ 5 /** **1406** Hijra **19 / 1 / 1986** Gregorian

**Ph.D. or (Fellowship):**

University: **University of Essex** College: **Science**

University Location (City/State/Country): **UK**

Date of Obtaining Degree  **3/ 2 /1994**  Gregorian

Title of Ph.D. Dissertation: **Macroscopic Polar Optical Lattice Vibrations and Electron-Phonon Interaction in Layered Semiconductor structures**

Advisor’s Name: **Prof. M.Babiker**

**Major** : **Theoretical Physics**

Employment and Administrative History

|  |  |  |
| --- | --- | --- |
| **Professor** | **Department of Physical Sciences and Astronomy, College of Science, King Saud University (KSU), Riyadh, Saudi Arabia (1/9/2014G – Present).** |  |
| **Associate Prof** | **Department of Physical Sciences and Astronomy, College of Science, King Saud University (KSU), Riyadh, Saudi Arabia (2 /3/2008 G – 1/9/2014 G).** |  |
| **Assistant. Prof.** | **Department of Physical Sciences and Astronomy, College of Science, King Saud University (KSU), Riyadh, Saudi Arabia (23/2/1994 G – 2/3/2008 G).** |  |
| **Teach Tutorial** | **Given responsibilities of Tutorials**  **(Tutorials in Essex university), 1993-1994(First and Second Semester.** |  |
| **Demonstrator** | **Demonstrator (3/31986 until 19/7/1987 G** |  |

1. **Administrative Assignments (in Descending Order):**
2. **Consaltant at National center of Applyed physics ,National center for Mathematics and Physics , king Abdulaziz city for science and technology (25-1-2012 – present)**
3. **Dean of Faculty of Science/Dwadmi (27/5/2009- 25/1/2012)**
4. **Chairman of department of Physical Science and astronomy, College of Science (KSU), (19/12/2005 G – 9/10/2009).**
5. **Physics departmental board secretary, (17/12/2003 until 25/11/2005 G), KSU.**
6. **Physics departmental board secretary, (13/3/1996 until 3/3/1997 G), KSU.**

**3) Scholarships and Awards (if any):**

**Post doctoral summer research scheme. By British Aerospace, 1998 G. For a project under the title : Electron Capture in Quantuum Well Laser II-VI Semiconductor.**

**Almarai Award, 2009, for Scientific Research Prize in the field of Nanotechnology, Kingdom of Saudi Arabia**

**Almarai Award, 2013, for Creative Scientific Work Prize in the field of Nanotechnology, Kingdom of Saudi Arabia**

4) **Supervisory on Ph.D. and MSc. Dissertations**

1. Electron Energy States In Nano Structures of Semiconductors. M.Sc.

2. Electron Transport properties In Coupled Quantum Dots In The Kondo Regime” M.Sc.

3. Design and development of polymeric laser doped by Nano-Particles (Hayat Saeed Al-Thobaiti )M.Sc.

4. Effect of band gap variations on solar cell efficiency (Reem Alsakran)

5. Electron relaxation via Plasmon frequency in several quantum well systems (Lila Altamimi) M.Sc.

6. Dipole relaxation by Plasmon frequency in dispersive photonic band gap structure (Hanan Alenazi) M.Sc.

7. expermental measurements for optical, magnetic and electrical properties of manganites (Masfer Hassan Al Kahtani) M.Sc.

8. Similarity Transformations for Dirac equation via the Asymptotic Iteration Method (Khalid Saeed Mohameed Alsadi ) PhD

9. The use of evanescent mode atomic mirrors for three-level atoms (Noha Filimban)

10. OPTICAL FERRIS WHEELS: trapping and manipulation of atoms with applications in atomic physics and quantum optics (Anwar Al Rsheed)

Assistant supervisor

1. Structural stability and cohesive energy of spherical metallic nanocrystals (Esam abdul-hafidh) PhD

**Participation in Conferences, Symposia and Other Activities:**

1) Conferences:

* **International physics conference Japan, July 1991 (invited speaker).**
* **IOP (institute physics) conference in physics with poster for discussion Birmingham, UK.,**

**1992 .**

**Third Meeting for the Saudi Physical Society, KSA, 27-29/11/1427 H (18-20/12/2006 G).**

* **Third Saudi Science Conference, KSA, 20-23/2/1428 H (10-13/3/2006 G)**
* ***The International Conference For Nanotechnology Industries* Rabea II 9-11 1430H- April 5-7- 2009 G Riyadh-Saudi Arabia**
* **75. Annual Meeting of the German Physical Society in Dresden 2011 13th - 18th of March 2011**
* **The Fifth International Symposium "Atomic Cluster Collisions****Berlin, Germany****July 20-25, 2011**
* **International Conference on many particle spectroscopy of atoms, clusters and surfaces Berlin, Germany August 27 - September 1, 2012**

2) Other Activities:

A) Membership of Scientific Associations:

- **Member of the Saudi Physical Society.**

**- Member of the European Physical Society**

B) Committees:

* **Member of the “ Academic Advisory” Committe at Department of Physics & Astronomy council- College of Science- King Saud University**

**- Member of the courses developmental committe.**

C**) Councils**:

**-** **Member of the University council- King Saud University 2009-2010**

**- Member of the University council- Shaqra University2011-2013**

**- Member of the College of Science council- King Saud University,**

**(2005 -2008).**

**- Member of the Department of Physics & Astronomy council- College of Science- King Saud University, (1994 G - Present). .**

**University and Community Service**:

* **Member of the higher scientific committee for developing the science and math. at the ministry of Education 2003-2006**
* **wrote and referee high school physics books and scope and sequence.**
* **Head of the committee to modifies the first year physics book for 1st class secondary school, and is being taught at school for five years.**
* **Wrote Practical book to be taught for 1st year of higher school for both students and teachers.**
* **Review various physics books for higher secondary school, written for the credit hours system. Physics1,2 and 3**
* **Supporting student in the preparation period for the physics Olympiad**
* **Member of the Saudi science centers program council 2013**
* **General lectures to the school student.**
* **Lecture to explain the modified first year physics book to teachers.**

**Research activity:**

* **Work within a team ofresearchers from KSU in the field of mathematical method using asymptotic iteration method –few projects had been funded by research centre of College of Science at KSU.**
* **Work within a team of researchers from KSU, KACST, Najran University, Korea University and Cambridge University in the field of Nano science and technology (spintronics and sensors devises) –few projects had been funded by KACST, King Abdullah institute for Nanotechnology at KSU and NPST programs.**
* **Work within a team of researchers from Fritz-Haber-Institute der Max-Planck-Gesellschaft The team lead by Prof. Uwe Becker a highly cited scientist in the field of photoionization and associated quantum Phenomena where we running a series of experiment using synchrotron light source (Bessy) in Berlin and free electron laser Flash II (Desy) in Hamburg. Few project had been funded by KSU.**
* **Work within a team of researchers from KSU, KACST, York University (UK), and Glasgow University (UK) in the field of quantum optics.**
* **Referee for Research Grants program at King Abdulaziz for Science and Technology.**

**RESEARCH WORK**

**A) Papers Published or Accepted for Publication in Academic, Specialized, and Refereed Journals:**

**1-** O Al-Dossary, M Babiker and N. C. Constantinou “ Fuchs-Kliewer interface polaritons and their interactions with electron in GaAs/AlAs double heterostructures” Sci. Technol. 7:B91, (1992)(UK).

**2**- N. C. Constantinou, O Al-Dossary and M Babiker “Interaction of electrons with polaritons” J. Phys. C5: 5581, (1993)(UK).

**3**- N. C. Constantinou, O Al-Dossary and B K Ridley “ Dispersion of superlattice optical phonons” Solid St Common. 86: 191, (1993)(UK).

**4**- B K Ridley, O Al-Dossary, N. C. Constantinou and M Babiker “ Continuum model of the optical modes of vibration of an ionic crystal slab” *Phys. Rev. B50*,11701, (1994)(USA).

**5-** O Al-Dossary, M Babiker and N Enfati, "Quantum optics of plasmon polaritons and velocity sum-rules", Phys. Rev. Vol. A54, pp 2419, (1996), (USA).

**6**- M Babiker, N Enfati, O Al-Dossary and A Kamli, "Polariton quantisation and cavity QED in low-dimensional systems", invited Talk, Quantum Optics Conference, Palm Cove, Cairns, July 1996 (AUSTRALIA).

**7-** B K Ridley, O Al-Dossary, M Babiker, N A Zakhleniuk and C R Bennett, "Optical phonon tunnelling and the electron scattering rate", Superlatt. Microstruct., vol. 23, pp 201 (1998), (NETHERLAND ).

**8-** V. N. Stavrou, C. R. Bennett, O. Al-Dossary and M. Babiker, "Electron scattering and capture rates in quantum wells", Phys. Rev. Vol. B63, pp 5304 (2001), (USA).

**9-** T. Barakat, K. Abodayeh, and O. M. Al-Dossary “Exact solutions for vibrational levels of the Morse potential via the asymptotic iteration method ” Czechoslovak Journal of Physics, Vol. 56, pp 583, (2006), (CZECH REPUBLIC).

**10-** T.Barakat, K. Abodayeh, B. Abdallah, and O. M. Al-Dossary “The asymptotic iteration method for the angular spheroidal eigenvalues with arbitrary complex size parameter c” Canadian Journal physics. Vol. 84, pp 291 , (2006), (CANADA).

**11-** T. Barakat, O. Al-Dossary “Rare  decay with polarized  in the fourth generation model” Journal of King Saud University (Science), Vol. 19(2), (KSA).

**12-** T. Barakat, and O. M. Al-Dossary “The asymptotic iteration method for the eigenenergies of the asymmetrical quantum anharmonic oscillator potentials ” International Journal of Modern Physics, Vol. A22, pp 203, (2007), (USA).

**13-** O.M. Al-Dossary “Morse Potential eigen-energies through the asymptotic iteration method” International Journal of Quantum Chemistry. Vol.16(3), p2040-2046, (2007), (USA).

**14-** O.M. Al-Dossary “ The asymptotic iteration method for the eigenenergies of quartic-sextic anharmonic oscillator potential, Journal of King Saud University (Science), Vol. 21(1), (KSA).

**15**- T. Barakat, O. M. Al-Dossary and A. A. Alharbi “The Effect of Mie-Type Potential Range on the cohesive Energy of Metallic nanoparticales” international journal of Nanoscience v6 n6 2007

**16**- Sadiek, Gehad, Huang, Zhen, O M Aldossary, Kais, Sabre" Nuclear-induced time evolution of entanglement of two-electron spins in anisotropically coupled quantum dot " Molecular Physics, Vol. 106, No. 14. (July 2008), pp. 1777-1786.

**17**- T. Barakat, O. M. Al-Dossary, Isam Hafeeza, "An investigation of the size-dependent cohesive energy and the structural stability of spherical metallic nanoparticles"*J.* Phys. B: At. Mol. Opt. Phys. **42** No 16 (28 August 2009) 165104 (5pp)

**18**-Neji Khelifi , Riadh Dardouri, O. M. Al-Dossary and Brahim Oujia"Theoretical study of the electronic structure of LiNa and LiNa+ molecules" [Journal of Russian Laser Research](http://www.springerlink.com/content/106479/?p=fc49d617323a4e9db9dfa0cce3b040bd&pi=0) [Vol. 30, No. 2](http://www.springerlink.com/content/lv4871571035/?p=fc49d617323a4e9db9dfa0cce3b040bd&pi=0)  *2010*

**19**- O. M. Al-dossary " Ordering of Ground State Energy Levels of Two Electron Quantum Dot in a Magnetic Field".Int. J. Theor phys.49 (2010) 1187-1194

**20**-**-** A. Hindi, S**.** Albashir, O. M. Al-dossary, **"***Preparation of Crystalline Gold Nanoparticles and their Prospects in Enhancement of Solar Energy Conversion Efficiency***"**from **“**Journal of Materials Science and Engineering.,USA,2010.

21 - Gehad Sadiek, Bedoor Alkurtass, and Omar Aldossary “Entanglement in a time-dependent coupled XY spin chain in an external magnetic field” Physical Review A 82, 052337 2010

22- S.Korica, A. Reinkoster, M.Braune, J. Viefhaus,D.Rolles,B. Langer, G. Fronzoni, D.Toffoli, M. Stener, P. Decleva, O. M. Al-Dossary, U. Becker “Partial Photoionization cross sections of C60 and C70: A gas versus adsorbed phase comparison” Surface Science V604 Issues 21-22 P1940-1944, 2010

23-[Houria Triki](http://www.informatik.uni-trier.de/~ley/db/indices/a-tree/t/Triki:Houria.html), [T. Hayat](http://www.informatik.uni-trier.de/~ley/db/indices/a-tree/h/Hayat:T=.html), [Omar M. Aldossary](http://www.informatik.uni-trier.de/~ley/db/indices/a-tree/a/Aldossary:Omar_M=.html), Anjan Biswas: Solitary wave and shock wave solutions to a second order wave equation of Korteweg-de Vries type. [Applied Mathematics and Computation 217](http://www.informatik.uni-trier.de/~ley/db/journals/amc/amc217.html#TrikiHAB11)(21): 8852-8855 (2011)

24-Langer, B., Ueda, K., Al-Dossary, O. M., and Becker, U.,  
[Photoinduced localization and decoherence in inversion symmetric molecules.](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6TGC-5230PP3-2&_user=28741&_coverDate=02%2F01%2F2011&_rdoc=1&_fmt=high&_orig=gateway&_origin=gateway&_sort=d&_docanchor=&view=c&_acct=C000003598&_version=1&_urlVersion=0&_userid=28741&md5=e3c3cddee3d5186702f1f3e2fc7d2cda&searchtype=a)Journal of Electron Spectroscopy and Related Phenomena,[Volume 184, Issues 3-6](http://www.sciencedirect.com/science?_ob=PublicationURL&_tockey=%23TOC%235251%232011%23998159996%233247740%23FLA%23&_cdi=5251&_pubType=J&view=c&_auth=y&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=16c87213c912ddd05d5d8c58459e4157), April 2011, Pages 154-156

25- [N. Khelifi](http://www.springerlink.com/content/?Author=N.+Khelifi), [R. Dardouri](http://www.springerlink.com/content/?Author=R.+Dardouri) and [O. M. Al-Dossary](http://www.springerlink.com/content/?Author=O.+M.+Al-Dossary)  ‘’ ELECTRONIC STATES OF CsLi and CsLi+ OLECULES’’ [Journal of Applied Spectroscopy](http://www.springerlink.com/content/0021-9037/), 2011, [Volume 78, Number 1](http://www.springerlink.com/content/0021-9037/78/1/), Pages 11-24

26**-** Abdul-Hafidh, Esam H.; Barakat, T.; Al-Dossary, O.M.” Many-Body Interaction and Computer Simulations for the Cohesive Energy of Spherical Metallic Nanocrystals” [Journal of Computational and Theoretical Nanoscience](http://www.ingentaconnect.com/content/asp/jctn;jsessionid=1ed37d9n6pgjt.victoria), Volume 8, Number 7, July 2011 , pp. 1134-1138(5)  
27-Anjan Biswas , Houria Triki , T. Hayat , O. M. Aldossary "Soliton solution of the generalized Burgers equation with generalized evolution" Applied Mathematics and Computation 217 (2011) 10289–10294

28- Houria Triki, B.J.M. Sturdevant, T. Hayat, O.M. Aldossary, and A. Biswas

"Shock wave solutions of the variants of the Kadomtsev–Petviashvili equation" Can. J. Phys. 89: 979–984 (2011)

29- Houria Triki , T. Hayat , O. M. Aldossary, Anjan Biswas" soliton and shock wave solutions to degasperis-procesi equation with power law nonlinearity" Waves in Random and Complex Media Volume 21, Issue 4, 2011

30- Houria Triki, Daniela Milovic, T. Hayat, Omar. M. Aldossary & Anjan Biswas. "topological soliton solutions of (2+1)-dimensional kdv equation with power lawnonlinearity and timedependent coefficients" International Journal of Nonlinear Sciences and Numerical Simulation Vol 12 (2011) pp35-43.

31- Alharbi, A. A.; Alkahtani, M.; Al-Dossary, O." The Role of Oxygen Vacancies on Magnetic Properties of LSMO" AIP Conference Proceedings;2011, Vol. 1370 Issue 1, p116

32- Alharbi, A. A.; Alkahtani, M.; Umar, Ahmad; Al-Dossary, O.; Abdullah, M. M. " Growth of La0.7Sr0.3MnO3 Thin-Films on SrTiO3 (100) Substrate by Pulsed Laser Deposition: Structural, Optical and Electrical Properties"  [Advanced Science Letters](http://www.ingentaconnect.com/content/asp/asl;jsessionid=32lngsfo2h8ln.alexandra), Volume 4, Numbers 11-12, November 2011 , pp. 3475-3479(5)

33-Houria Triki , T.Hayat , Omar M. Aldossary , AnjanBiswas" Bright and dark solitons for the resonant nonlinear Schr¨odinger’s equation with time-dependent coefficients" Optics & Laser Technology 44 (2012) PP2223–2231

34-Fayequa Majida, Houria Trikib, Tasawar Hayatc, Omar M. Aldossaryd,

Anjan Biswas" Solitary wave solutions of the Vakhnenko–Parkes

Equation" Nonlinear Analysis: Modelling and Control, Vol. 17, No. 1, (60–66),2012

35- O. M. Aldossary and V E Lembessis" Deflection of a Λ-type three-level atom by a light field: a mechanical demonstration of the coherent population trapping effect" J. Phys. B: At. Mol. Opt. Phys,V45,N11, 2012

36- O. Al-Dossary, Ahmad Umar, A. A. Al-Harbi, Shabi Abbas Zaidi, and G. N. Dar " La0.7Sr0.3MnO3 Nanoparticles Based Ultra-High Sensitive Ammonia Chemical Sensor" J. Nanosci. Nanotechnol. 12, 6368-6373 (2012)

37. Houria Triki, Ahmet Yildirim, T. Hayat, Omar M. ALDossary , Anjan Biswas "Topological and non-topological solitons of a generalized derivative nonlinear schrödinger's equation with perturbation terms " Romanian Reports in Physics, Vol. 64, No. 3, (2012)P. 672–684

38. Houria Triki , Ahmet Yildirim , T. Hayat , Omar M. Aldossary , Anjan Biswas "Topological and non-topological soliton solutions of the bretherton equation " Proceedings of the romanian academy, Series A, Vol 13, N 2 (2012), pp. 103–108

39. [Tasawar Hayat](https://www.researchgate.net/researcher/10267210_Tasawar_Hayat) · [Zahid Iqbal](https://www.researchgate.net/researcher/84153240_Zahid_Iqbal) · [Muhammad Qasim](https://www.researchgate.net/researcher/72763390_Muhammad_Qasim) · Omar M. Aldossary "[Heat Transfer in a Couple Stress Fluid over a Continuous Moving Surface with Internal Heat Generation and Convective Boundary Conditions](https://www.researchgate.net/publication/273498606_Heat_Transfer_in_a_Couple_Stress_Fluid_over_a_Continuous_Moving_Surface_with_Internal_Heat_Generation_and_Convective_Boundary_Conditions?ev=prf_pub)"Zeitschrift für Naturforschung A [Volume 67, Issue 5 (May 2012)](http://www.degruyter.com/view/j/zna.2012.67.issue-5/issue-files/zna.2012.67.issue-5.xml)

40. Houria Triki, T. Hayat, Omar M. Aldossary and Anjan Biswas" Soliton solution of the three component system of wu-zhang equations " Hacettepe Journal of Mathematics and Statistics, Vol 41 (4) (2012), 537 – 543

41. Anjan Biswas, Ahmet Yildirim, T. Hayat, Omar M. Aldossary, Ryan Sassaman" Soliton perturbation theory for the generalized klein-gordon equation with full nonlinearity" Proceedings of the romanian academy, Series A, Vol 13, N 1 (2012), pp. 32–41

42. Houria Triki, Sihon Crutcher, Ahmet Yildirim, T. Hayat, Omar M. Aldossary, Anjan Biswas" Bright and dark solitons of the modified complex ginzburg landau equation with parabolic and dual-power law nonlinearity " Romanian Reports in Physics, Vol. 64, N 2 (2012), P. 367–380,

43. [A. Biswas](https://www.researchgate.net/researcher/18990565_A_Biswas) · [K.R. Khan](https://www.researchgate.net/researcher/2077604256_KR_Khan) · [A. Rahman](https://www.researchgate.net/researcher/2077565270_A_Rahman) · [A. Yildirim](https://www.researchgate.net/researcher/60530838_A_Yildirim) · [T. Hayat](https://www.researchgate.net/researcher/10267210_T_Hayat) · O. Aldossary "[Bright and dark optical solitons in birefringent fibers with Hamiltonian perturbations and Kerr law nonlinearity](https://www.researchgate.net/publication/279899932_Bright_and_dark_optical_solitons_in_birefringent_fibers_with_Hamiltonian_perturbations_and_Kerr_law_nonlinearity?ev=prf_pub)" OPTOELECTRONICS AND ADVANCED MATERIALS-RAPID COMMUNICATIONS 07/2012; 14(7):571-576

44. Laila Girgis, Daniela Milovic, Tasawar Hayat, Omar M. Aldossary, Anjan Biswas "Optical soliton perturbation with log law nonlinearity" Optica Applicata, Vol. XLII, No. 3, (2012)

45. [F. Shahzad](https://www.researchgate.net/researcher/77379692_F_Shahzad) · [T. Hayat](https://www.researchgate.net/researcher/10267210_T_Hayat) · Omar M. Aldossary "[OSCILLATORY FLOW OF FOURTH-ORDER FLUID IN A POROUS HALF SPACE](https://www.researchgate.net/publication/239936869_OSCILLATORY_FLOW_OF_FOURTH-ORDER_FLUID_IN_A_POROUS_HALF_SPACE?ev=prf_pub)" Chemical Engineering Communications 08/2012; 199(8):1072-1084.DOI:10.1080/00986445.2011.617799

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47. [Houria Triki](https://www.researchgate.net/researcher/70062928_Houria_Triki) · [Ahmet Yildirim](https://www.researchgate.net/researcher/60530838_Ahmet_Yildirim) · [T. Hayat](https://www.researchgate.net/researcher/10267210_T_Hayat) · Omar M. Aldossary · [Anjan Biswas](https://www.researchgate.net/researcher/18990565_Anjan_Biswas) "Soliton Solution of the Generalized Resonant Nonlinear Dispersive Schrödinger's Equation with Time-Dependent Coefficients " Journal of Computational and Theoretical Nanoscience 09/2012; 16(1):309-312. DOI:10.1166/asl.2012.3255

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