

Personal information

Name : Omer Ibrahim Eid

Academic Rank: Assistant Professor Physics Department, Faculty of Science, University of Khartoum.

Nationality: Sudanese

Date & Place of birth: 24/04/1961, Sudan

Marital status: Married.

Religion: Muslim

Address: Department of Physics, Faculty of Science, University of Khartoum, P O Box 321, Khartoum (11115), SUDAN.

Fax: +249-83-780539 (Physics Department)

E-mail: oeid@uofk.edu, omereid@gmail.com

Education

1994-1999: Ph.D. (Chemical Physics) joint program between University of Khartoum & University of Linköping (Sweden), sponsored by the International Program in the Physical Sciences (IPPS).

Thesis Title: "Glutarimide, Sodium Hydrogen Oxalate Single Crystals: An ESR/ENDOR Study" A thesis submitted for the degree of Doctor of Philosophy in the University of Khartoum, (1999).

1991-1993: M.Sc. Physics, Faculty of Post-graduates; University of Khartoum.

Thesis Title: "ESR study of irradiated single crystals of o-Methoxy Phenyl Hydrazide" A thesis submitted in partial fulfillment of the requirement for the degree of Master of Science in Physics, University of Khartoum, (1993).

1989-1990: One Year of M.Sc. Solid State Physics Program (Incomplete due to the Gulf II War), Department of Physics, Faculty of Post-Graduate Studies University of Kuwait, State of Kuwait.

1982-1987: B.Sc. (Honors), Physics Department, Faculty of Science, University of Khartoum.

Honors (Fund):

- Ph.D. Partial fund from the International Program in the Physical Sciences (IPPS). Uppsala, Sweden, 1996.
- M.Sc. (Part I) complete fund from Kuwait University, 1989-1990.

Areas of Specialization:

1. General Physics.
2. Electron Spin Resonance (ESR) spectroscopy.
3. EPR Dosimetry.
4. Laser Physics Spectroscopy.

5. Solar Energy.

Professional Experience

- Part-time Demonstrator: (Undergraduate students), Physics Department, Faculty of Science, University of Khartoum, 1987-1990.
- Research Assistant: Sudan Atomic Energy Commission, Khartoum, Sudan, 1989-1990.
- Teaching Assistant: Physics Department, Faculty of Science, University of Khartoum, 1990-1994.
- Supervision for practical work of the 5th year projects, on the EPR spectroscopy, 1993-1999.
- Supervision for practical work of the M.Sc. theses, on the EPR spectroscopy, 1997-1999.
- Examination officer for the Physics Department, 1996-2003.
- Lecturer: Physics Department, Faculty of Science University of Khartoum, 1994-1999.
- Coordinator for the first year medical sciences students, 1997-2005.
- Acting Head Department of Physics, Faculty of Science, University of Khartoum, June - July 2002.
- Coordinator for the Physics program, Bayan College for Science and Technology, 1999-2008.
- Preparation of the 1st year Physics lab for the students of the medical Laboratory science college, the National Ribat University, 2002.
- Writing and teaching the 1st year Physics syllabus for students of the Medical Laboratory Science (MLS) College, the National Ribat University, 2002.
- Writing and teaching the 1st year Physics syllabus for students of the Pharmacy, the National Ribat University, 2002.
- Supervision and assembly of the appropriate experiments in Physics for the 1st year MLS and Pharmacy colleges, the National Ribat University, 2002.
- Member of the Faculty of Science Board, 2001-Up.
- Member of the Scientific Board of Bayan College for Science and Technology. 2002-2008.

- Member of the Scientific Board of Mashreq College for Science and Technology. 2007-2008.
- Coordinator for Postgraduate Studies, University of Khartoum, 2003-2009.
- Head of the Physics Department, Faculty of Science, University of Khartoum, Oct. 2005-Up.

Official Missions

Representative for the University of Khartoum to discuss scientific agreements with the following universities:

1. Leiden University. The Netherlands,
2. Addis Ababa University, Ethiopia,
3. Norrköping University, Sweden.

External Support Fetching:

I had the honor in getting some scientific support for the Department of Physics Leiden University (the Netherlands):

1. Nonionizing radiation equipment, EMF.
2. Scanning Tunneling Microscope, STM.
3. 10 computers.
4. 14 Physics books.

I also, arranged for the scientific trips for our 4th year honors students to Leiden University for the last three years, (2007, 2008, & 2009).

Workshops & Conferences

- 1st Workshop on “PASCAL Programming & Computational Physics”, 15 Feb-15 Apr 1992. University of Khartoum (joint workshop between University of Khartoum & University of Lieden, Holland).
- 2nd workshop on “C⁺⁺ Programming and Computational Physics”, 15 Feb.-15 Apr.1993. University of Khartoum (joint workshop between University of Khartoum & University of Lieden, Holland).
- 10 Months Fellowship (Sep. 1993-Jul. 1994) training program EPR, ENDOR spectrometers (University of Linkping, Sweden) participant in the *International Program in the Physical Sciences (IPPS)*.
- 12 Months Fellowship (Oct. 1995-Oct. 1996) training program EPR, ENDOR spectrometers (University of Linköping, Sweden) participant in the *International Program in the Physical Sciences (IPPS)*.

- 10 Days intensive training program on ENDOR-Induced EPR, Jun. 1996, Department of Biophysics, University of Oslo, Norway.
- Participant in the “14th International Conference on Radical Ions” Uppsala, Jul. 1-5 1996. Poster title: “ENDOR study of free radicals in X-irradiated glutarimide single crystals”
- Participant in the “International Nathiagali Summer College on Physics and Contemporary Needs”, 24th June – 6th July 2002, Nathiagali , Pakistan.
- Participant in the “**Sixth International Workshop on LASER PHYSICS AND ITS APPLICATIONS**”, **Poster title:** “Investigation of the interference Pattern of He-Ne laser using the Fast Fourier Transform”, **11 – 17 December 2002 – Tunis – Tunisia.**
- 2 Months Fellowship (Aug. -Oct. 2003) as a guest scientist conducting research work on EPR, ENDOR and EIE spectrometers (University of Linköping, Sweden; and University of Oslo, Norway).
- Participant in the workshop “Uses of Neutron Activation Analysis in Studying some Biological and Environmental Elements Traces”. The International Atomic Energy Commission, Syria, Damascus, 07-11/12/2003.
- Participant in the workshop “XRF Spectroscopy”. Department of Physics, Faculty of Science, University of Khartoum and Sudan Atomic Energy Commission, 20-23/08/2005. Sudan.

Fifth Year and M.Sc. Qualifying Projects:

I have supervised more than 30 projects (Fifth Year and M.Sc. Qualifying), at University of Khartoum and other universities in Sudan.

Books:

- “Introduction to Modern Physics”, in Arabic, Omer I Eid, M O. Seed Ahmed, *Written for the Sudan Open University*, Khartoum, Sudan, 2007.
- “Quantum Mechanics”, in Arabic, Omer I. Eid, written for *the Sudan Open University*, Khartoum, Sudan, 2009, manuscript.

Referee

Currently, I am acting as a referee for the following journals:

1. Sudan Journal of Basic Sciences.
2. Khartoum Record Journal.

Curriculum Development:

- Developed the course: “General Physics”, College of Medical Sciences Laboratories and college of Pharmacy, Ribat National University, 2001, Khartoum, Sudan.

Educational Activities

I have been involved in teaching the following courses at the Department of Physics, University of Khartoum, from 1996 – up:

1. Heat.
2. Optics.
3. Mechanics.
4. Electricity and Magnetism.
5. Thermodynamics.
6. Modern Physics.
7. Solid State Physics.
8. Mathematical Methods.
9. Quantum Mechanics.
10. Origin Program.
11. Spectroscopy.
12. Hyperfine Interactions.

I have been involved in teaching the following courses:

1. General Physics.
2. Optics and Heat.
3. Electricity and Magnetism.
4. Quantum Mechanics.
5. Solid State Physics.

At the Physics Departments of the following Sudanese Governmental and private Universities and colleges:

1. University of Juba.
2. Sudan University for Science and Technology.
3. AlNeelain University.
4. The Ribat National University.
5. The Academy of Medical science and Technology.
6. Bayan College for Science and Technology.
7. The Razi College.
8. Al Mashreq College for science and Technology.
9. Computer Man College.

Courses Translated

The following courses were translated and given to universities' students:

(A) English to Arabic:

1. Mechanics,
2. Optics,
3. Electricity and Magnetism,
4. Modern Physics,
5. Quantum Mechanics,
6. Solid State Physics,
7. Heat and Thermodynamics,
8. Spectroscopy,
9. Mathematical Methods,

(B) Arabic to English:

1. Solid State Physics,
2. Quantum Mechanics,
3. Heat and Thermodynamics,
4. Optics.

Societies and organizations

1. Basic Science Committee, Ministry of Higher education and Scientific research Member
2. Sudanese Physics Society: Member.
3. The Scientific Club: Head.
4. Sudan Institute for Natural Sciences Organizer of the material science section.
5. Sudanese Environment Conservation Society: Member
6. Mygoma Orphanage: Member

Awards

The prize of the Minister of Higher Education and Scientific Research in Physics. *Sudan, Jul. 2005.*

List of Publications

1. Salih, O. I. Eid, N. P. Benetis, M. Lindgren, A. Lund, E. Sagstuen. "Reversible conformation change of free radicals in X-irradiated glutarimide single crystals studied by ENDOR", *J. of Chem. Phys.* , **212** , 409-419 (1996).
2. E. Sagstuen, E. O. hole, S. R. Haugedal, A. Lund, O. I. Eid, R. Erickson. "EPR and ENDOR analysis of X-irradiated L-Alanine and $\text{NaHC}_2\text{O}_4\text{H}_2\text{O}$ Simulation of microwave power dependence of satellite lines". *Nukleonika* , **42 No. 2** , 353-372 (1997).
3. Nimir Ali Salih, Audun Sanderud, Einar Sagstuen, Omer I. Eid, and Anders Lund. "ESR and ENDOR studies of Hippuric acid single crystals X-irradiated at 295K: A reinvestigation", *J of Phys. Chem.*, **101, No. 44**, 8214-8220 (1998).
4. Omer I Eid, "Glutarimide, Sodium Hydrogen Oxalate single crystals: An ESR/ENDOR study", A thesis submitted for the degree of Doctor of Philosophy in the University of Khartoum, July 1999. Khartoum Sudan.
5. M. Abedelbagi, O. I. Eid, W. S. A/Rahman "Evaluation of the Influence of Practical Physics Study in Sudanese Universities", Conference Paper, 2nd International Conference on Physics Education, Feb. 7-9-2003, Karachi, Pakistan.
6. Omer. I. Eid, Anders Lund, Einar Sagstuen "Ally Type Radical Formation in X-irradiated Glutarimide Single Crystals studied by ENDOR and ENDOR-Induced EPR" *J. of PCCP*, **6**, 3604-3610 (2004).
7. Mustafa A. Ali, Omer I. Eid "Detection of air pollution and temperature stress on Cotton plant utilizing Laser Induced Fluorescence (LIF) technique", Accepted, the Journal of Physics. sifns Jul 2008.
8. T. S. Saaed, O. I. Eid "Study on the effect of heating some frying oils by using the Laser Induced Fluorescence technique", Poster: Winter College on Optics in Environmental Science (2-13 February 2009), ICTP, Trieste, Italy

Theses: Examiner

I was one of the examiners committee for the following M.Sc & Ph.D. theses in Physics:

1. "Radiation Dose on the Local Sudanese Cement", Nada Abbas, University of Khartoum, Faculty of Science, Department of Physics, 2001.
2. "Absorption spectroscopy of Rb87 & Rb85 near infrared by using diode laser", Adil Adam Mohamed Salih, University of Khartoum, Faculty of Science, Department of Physics, 2001.
3. "ESR Spectroscopy On Gd^{+3} Single Crystals studied at room temperature", Ilham Mohammed Kamal, University of Khartoum, Faculty of Science, Department of Physics, 2002.
4. "Study and Analysis of the Spectra of Rubidium Isotopes Using an Extended Cavity Diode Laser", Mubark Mohammed, University of Khartoum, Faculty of Science, Department of Physics, 2002.
5. "Investigation of the interference Patten of He-Ne laser using the Fast Fourier Transform", Mai ElTag Mohammed Osman. University of Khartoum, Faculty of Science, Department of Physics, 2003.

6. "Gamma Irradiation Effect on Bipolar Junction Transistor", Rania Elgaili Ali Ibrahim, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. Jan. 2004.
7. "Spectroscopy of Flame Emission", Hala AbdelRahman AbdelGaleil Mohammed, University of Khartoum, Faculty of Science, Department of Physics, Jul, 2004.
8. "Determination of the trace elements in petroleum by laser induced-fluorescence", Ruta Ahmed Warille, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. Jul. 2004.
9. "Effect of Annealing on Bipolar PNP-Transistor Junction Type (AC-128)", Amin Ahmed Omar Yousif, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. Aug. 2004
10. "Assessment of radiological impact of phosphate fertilization on arable land", Saif Adin Yassin Mohamed, Sudan University of Science and Technology. Dec. 2004.
11. "Nuclear Energy: A Comparative Study with others Energies" Salwa Mohammed Ibrahim Mahmood, Sudan University of Science and Technology. Jan. 2005.
12. الريونات (الحرير الصناعي) ، المعز ميرغني مكاوى، جامعة السودان للعلوم والتكنولوجيا، مايو 2005 م.
13. "Solar pumping system by utilizing fixed tilted mode and the passive solar tracker mode" Hiba Kamal Abd Elmaged, University of Khartoum, Faculty of Science, Department of Physics, Jul, 2005.
14. Calibration of Gammacell 220 E Irradiator using Ficke and Alanine Dosimetry. Mohamed A. H. Rushdi. Sudan University of Science and Technology. Sep. 2005.
15. "Structural and magnetic properties of magnetism ferrite doped with Cr+3/Mn+2) cations" Omaima Abubaker Osman. University of Khartoum, Faculty of Science, Department of Physics, Aug, 2005
16. "Determination of trace elements in some crops using LIF combustion diagnostic" Nada Omer Ibrahim, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. Oct. 2005.
17. "Review on environmental radioactivity monitoring studies in Sudan" Noha Shamaseldin Hassan, University of Khartoum, Faculty of Science, Department of Physics, Oct, 2005.
18. "Applications of fiber optics in telecommunication" Wishah Salah Eldien Elhag, University of Khartoum, Faculty of Science, Department of Physics, Dec, 2005.
19. "Concentration of Radon222 in Kassala State", Abd E Moniem Ahmed Elzain, University of Kassala, Ph.D thesis, 2006.
20. "Nanoparticles: A Quantum Dots study", Yssir Mohammed Al-Hassan Ahmed, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. Apr. 2006.
21. "Some structural and Magnetic Properties of Y doped $\text{La}_{1.2} \text{Sr}_{1.8} \text{Mn}_2 \text{O}_7$ magnetite", Anas Al Amin Hassan, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. Jun. 2006.
22. جامعة امدرمان الاسلامية كلية العلوم - قسم : دراسة الانهيار الكهربائي في السوائل " مظفر على سخنودي البغدادي " الفزياء يونيو 2006 م.
23. "Fabrication and Stability of some Polymer -based devices", Fatima Al Gilany Ahmed, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. Oct. 2006.

24. "Synthesis and physical characterization of Cr⁺³ doped Mg_{0.9}Mn_{0.1}Fe₂O₄", Hassan Abdelhalim Abdellah Seed Ahmed, University of Khartoum, Faculty of Education, Department of Physics, Sep., 2006.

25. "The use of Laser-induced fluorescence for studying the effect of leaf reflectivity on water hyacinth growth", Khaled Abdel Aziz El Khidder, Sudan University of Science and Technology, Nov. 2006.

26. "Structural and Dielectric Impedance Studies on some Ferrites Spinel", Nagala Mohammed Hussein, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. Apr. 2006.

27. "Investigation of thermal stability of ZnS: Semiconductor quantum dots", Yssir Mohammed Al-Hassan Ahmed, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. Apr. 2006.

28. "The effect of [Coulm 500.Rh6G] dye laser produced by pumping nitrogen laser on silver nitrate (AgNO₃)", Rehab Awad Al-Karim Ibrahim, University of Khartoum, Faculty of Science, Department of Physics, Feb., 2007.

29. "Use of X-Ray Fluorescence for Analysis of Gold", Nadreen Yousif Mohamed Yousif, University of Khartoum, Faculty of Science, Department of Physics, Jul., 2007.

30. "Modeling of Bulk Hetero Junction Solar Cell", Mayson Abdelmageed Mansour, University of Khartoum, Faculty of Science, Department of Physics, Nov., 2007.

31. "Porous Silicon for Chemical Sensing", Rihab Ahmed Mohamed Ali Nimir, University of Khartoum, Faculty of Science, Department of Physics, Aug., 2008.

32. "Calculations of exciton behavior for extended Peierls-Hubbard system using Density Matrix Renormalization Group", AnasOmer Abdelwahab, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. May. 2009.

33. "Analysis of gold samples using different x-ray fluorescence system", Saria Mustafa Abdalla Sid Ahmed, University of Khartoum, Faculty of Science, Department of Physics, Jun., 2009.

34. "Study of Some Ores Rare Earth elements by using X-Ray Fluorescence and Neutron Activation Analysis.", Almughera Hussein Salim, University of Khartoum, Faculty of Science, Department of Physics, Jun., 2009.

35. "Simulation of Organic Solar Cell by AMPS-1D", Samah Gasm Allah Babiker, Sudan University of Science and Technology, Jul.2009.

36. "Investigation of Radon concentration in drinking water from wells in Khartoum State", Hajo Idriss Mohammed Idriss, Sudan academy of sciences, Jul. 2009.

37. "The precise extraction of the barrier height of Schottky junction", Hana Ahmed ElBashir ElFadl A. Elraouf, University of Khartoum, Faculty of Science, Department of Physics, Sep., 2009.

38. "Radioactivity levels of staple foodstuffs and dose estimates in Sudan", Hatem Eltayeb Fadlalla Hemada, Sudan Academy of Sciences, Oct., 2009.

39. "Analysis of different types of cement using XRF techniques", Alia Abdel Aziz Mohammed AlFaki, University of Khartoum, Faculty of Science, Department of Physics, Oct., 2009.

40. "Physics Properties of Zinc Sulfide (ZnS) thin film", El Hadi Abd alla Adam Arbab, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. Nov. 2009.

Supervised the following M.Sc. research:

1. "Comparison between the measurement of Solar raditation by pyrameter and solar cell reference", Ahmed Mohamed Salih Hamid, University of Khartoum, Faculty of Science, Department of Physics, Nov., 2009
2. "Thermal and Electrical Conductivity for Copper and Aluminum.", Hana Mohamed El-Hassan Ahmed, University of Khartoum, Faculty of Science, Department of Physics, Sep. 2009
3. "Applications of Laser in Medicine", Nuha Hassan Kinash, University of Khartoum, Faculty of Science, Department of Physics, Feb. 2009
4. "Assessment of the EMF emitted from electric high-voltage towers in Khartoum state, Sudan", Sami Abdella Elbadawi Mohamed, University of Khartoum, Faculty of Education, Department of Physics, Jan. 2009.
5. "Study on the effect of heating some frying oils by using the laser induced fluorescence technique and the ultraviolet/visible spectroscopy", Tamador Salih Saeed Ali, University of Khartoum, Faculty of Education, Department of Physics, Mar. 2009.
6. "Determination of the density and the mobility of the charge carriers in n-germanium", Abdelrhman Yousif Mohamed Ahmed, University of Khartoum, Faculty of Science, Department of Physics, Oct. 2008.
7. "Alanine Single Crystals: EPR Study of the Stability of the Alanine Free Radical", Wafa Mahmoud Mohammed Elyas, University of Khartoum, Faculty of Science, Department of Physics, Jan. 2009.
8. "Crycooler: Theory and Applications", Basma Mutasim Mohammed El Sayed, University of Khartoum, Faculty of Science, Department of Physics, November, 2008.
9. "Detection of air pollution and temperature stress on Cotton plant utlizing Laser Induced Fluorescence (LIF) technique", Mustafa Ahmed Ali, Sudan University of Science and Technology, Oct. 2006.
10. "Investigation of the effect of the magnetic water on plants using Laser-Induced Fluorescence Spectroscopy" Hussam Abdella Eljak, Sudan University of Science and Technology. Jul. 2005.
11. "Proposed Dynamical Models to Describe the beta-Proton Motion for some Free Radicals", Rasha Mohammed Saeed, University of Khartoum, Faculty of Science, Department of Physics, Nov.2004.
12. "Dosimetry in ESR Spectroscopy", Ghada Faisal Merghani, University of Khartoum, Faculty of Science, Department of Physics, Oct. 2003.
13. "Spectroscopic Study of the Rb87 and H2O near Infrared Laser", Nahid Osman, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University. Feb. 2003.
14. "Study of Dynamical Models Involved in the β -proton Motion for some Free Radicals Using Electron Paramagnetic Resonance Spectroscopy", Imad Adin Ahmed Abd A/Rahim Medani, School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University, Dec., 2002.

Current Research:

Some of my current interests are related to scientific issues of my work in Laser spectroscopy (particularly: the Laser Induced Fluorescence technique), the field of Nonionizing radiation (Measurement of high and low frequency fields), and solar energy.

1. "Measurement of the high frequency field emitted from the Mobile towers in Khartoum State, Sudan" Nahid Ahmed Abdelrahman, University of Khartoum, Faculty of Science, Department of Physics, (M.Sc. project, expected to finish May. 2010).
2. "Uses of the plastic Detectors CR-39 in Detecting the Fast and Thermal Neutron", Abbas Yassin Abdalla El amain. University of Khartoum (M.Sc. project, expected to finish Dec. 2010).
3. "An XRF study on the traces elements in soil", Adil Kamel Hassan. School of Physics and Applied Physics Faculty of Science and Technology Al-Neelain University, (M.Sc. project, expected to finish Apr, 2010).
4. "Measurements on the cell phone signal", Wafa Eltayeb Mohammed, University of Khartoum (M.Sc. project, expected to finish Feb. 2010).
5. "Analysis of Basalt using XRD technique", Mohammed Abdelgadir Mohammed, University of Khartoum (M.Sc. project, expected to finish May. 2010).
6. "XRD study of Quartz", Thowiba Yousif Sagiroon, University of Khartoum (M.Sc. project, expected to finish Apr. 2010).
7. "Study of the Gum Arabic using XRF techniques", Manal Mohammed Abdalla, University of Khartoum (M.Sc. project, expected to finish Jan. 2010)