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# **Curriculum Vitae**



# 1. Personal Details:

<u>Correspondence Name:</u> <u>Mohamed Hassan Eisa Salim</u> (M. H. <u>EISA</u> or Yi Sang: 易桑)

Date & Place of Birth: 01/01/1970 Elgadarif, Sudan

Nationality: Sudanese
Marital Status: Married
Gender: Male

# 2. Correspondence Address

# **Permanent Address:**

Department of Physics, College of Science, Sudan University of Science & Technology (SUST) Box: 407 Khartoum,

Sudan, Phone: +249-111796203, Fax: +249-183-779219

E-mail: mheisas@hotmail.com/ mheisas87@hotmail.com / mheisas87@gmail.com

Website: http://sustech.edu/faculty\_en/staff2.php

Position: Associate Professor of Physics

### **Present Address:**

Department of Physics, College of Science, Imam University, Box: 11754 Riyadh,, Saudi Arabia,

Phone: +966-566974584,

E-mail: mheisas@hotmail.com/ mheisas87@hotmail.com/ mheisas87@gmail.com

Website: http://imamu.edu.sa/faculty\_en/staff2.php

Position: Associate Professor of Physics

### 3. Academic Particulars:

31-05-2010: Postdoctoral Fellow: Nano Physics, TWAS and Universiti Sains Malaysia (USM), Pinang, Malaysia 08-06-2005: Ph. D., Doctor of Philosophy (Physics) by (Courses + Thesis) Experimental Nuclear Physics, Fudan

University, Shanghai, China

05-07-2001: Diploma, Chinese Language, Fudan University, Shanghai, China

10-02-1997: M. Sc. (Courses+ Thesis) Physics, Nanjing Normal University (NJNU), Nanjing, China

23-03-1992: B. Sc., Physics (Honor, 2nd Class, Division One, 5 years) University of Khartoum, Khartoum, Sudan

# 4. Thesis Title:

Ph. D. Thesis tilted" Nuclear Techniques Investigation on the role of Trace Elements in Bone (Fudan University,

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Published: 2005-04-20) (Supervisor: Advisory committee: Professor Zhou Zhuying Chair Advisor, Professor Mi Yong, Associate Professor Shen Hao, Associate Professor Yao Hui ying and Assistant Professor Yang Ming jie)

M. Sc.: Thesis tilted" Monte Carlo Simulation on Bilayer Vesicle Shapes (Supervisor: Professor: Zheng Chang Liang).

B. Sc: Thesis titled " Studies on Solar Energy and its Applications (Supervisor: Professor: Hisham Mohamed

Wadatallah)

# 5. Area of Interest:

Major Research interest lies in:

- 5.1 Application of Ion-beam Technology in Material Science and in Biomedicine Science
- 5.2 Nanotechnology: (Nanomaterials: Nanoparticles and Quantum Dots, Surface Treatments, Nano-composites,
- **5.3** Carbon Nanotubes, Nanostructured materials, nano biomedicine)
- **5.4** Computational Physics on superconductors

Core skills and competencies are as follows: Well acquainted with experimental aspects of accelerator technology including, Proton Induced X-Ray Emission (PIXE), X-Ray Absorption Near Edge Structure (XANES) and Extended X-Ray Absorption Fine Structure (EXAFS). Well acquainted with analytical skills for PIXE, XAFS, Nuclear Microscopy, XRD, AFM, SEM, MBE, FESEM and ICP. Highly computer literate—Word/PowerPoint/Excel and numerous Nuclear Analytical software as well as scientific program development using Fortran, C++, MATLAB, MAPLE, SEGMA, ORIGIN Professional, LATEX and AXIL.

I would like to "Keep my heart young and my expectations high and never allow my dreams to die... and come to realize that I surrounded by infinite possibilities for growth and achievement" (As Wilfred Peterson nicely said).

## 6. Academic Awards:

1994-1997: Chinese's Scholarship, M. Sc., NJNU, China

2000-2001: Chinese's Scholarship, Diploma, Fudan University, Shanghai, China 2001-2005: Chinese's Scholarship, Ph. D, Fudan University, Shanghai, China

the 2006 TWAS Prize for Young Scientists awarded in the field of Physics, Trieste, Italy

2009-2010: Universiti Sains Malaysia (USM and Third World Academy of Science (TWAS) Post Doctoral

Fellowship- Universiti Sains Malaysia, Pinang 11800, Malaysia

## 7. Professional Experience:

### 7.1. Part Time Experience

1991-1994: University of Khartoum (Faculties of Science and Education), [Teaching Assistant] Sudan

1990 -1994: Different High Schools in Khartoum, Sudan [Teaching Physics]

1999-2000: Different Universities in Sudan, Lecturer - Physics

2000-2002: High School, Shanghai, China [Teaching English]

2011: Faculty of Engineering, Almughtaribeen University, Khartoum, Sudan

2011: Faculty of Education, University of Khartoum, Khartoum, Sudan

### 7.2. Full Time Experience

04-1992 -04-1994, Al-Sharg University, Kassala, Sudan, Teaching Assistant of Physics

03-1997 -11-1997, Kassala University, Kassala, Sudan, Lecturer of Physics

11-1997 -04-1999, Kassala University, Kassala, Sudan, Head of Physics Department

04-1999- 09-1999, Sudan Institute for Natural Sciences (SIFNS) Khartoum, Sudan, Research Unit, Researcher

10-1999 -08-2000, SUST- Khartoum, Sudan, Lecturer

30-08-2005 - 12-05-2009, SUST- Khartoum, Sudan, Assistant Professor of Physics

2006-2009, SUST- Khartoum, Sudan, Coordinator of Master Program of Physics

12-05-2009 up to now, SUST- Khartoum, Sudan, Associate Professor of Physics

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2010 (25-10 to 25-11) SUST- Khartoum, Sudan, Head of Physics Department

#### 7.3. Professional

2001-2005: The Institute of Modern Physics, Fudan University, Shanghai - China

2002-2005: Applied Ion Beam Laboratory for Accelerator, Fudan University, Shanghai, China

1999-2009: Physics Department, College of Science, Sudan University of Science & Technology, Khartoum, Sudan

2009-2010: Nano-Optoelectronics Research Laboratory, School of Physics; Universiti Sains Malaysia, Pinang, Malaysia

# 8. Teaching Experiences:

### Undergraduate1999- 2009:

In SUST, I taught the following courses: First Year: Mechanics and Vectors

Second Year: Modern Physics, Classical Mechanics and Vibrations & Waves Third Year: Nuclear Physics, Plasma Physics and Quantum Mechanics Fourth Year: Applied Nuclear Physics and Physics spectroscopy

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#### **Undergraduate** 1999- 2009: In Other Universities:

1999: In International Africa University, I taught the course of General Physics, College of Science and College of Medicine

2000: In Alzaim Alazhary University, I taught the course of Radiation Physics, College of Medical Laboratories

1999, 2006 and 2008: In Elneelain University, I taught the course of Optical Physics, College of Engineering

2006 and 2008: In Elneelain University, I taught the course of General Physics, College of Science

2011: Elmgetrabeen Universities, I taught the course of General Physics, Faculty of Electronic Engineering

### **Graduate** in **SUST**

High Diploma: Non Destructive Test course

Master of Science: Advanced Nuclear Physics and Plasma Physics, Spectroscopy of Physics and Electrodynamics

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#### **Graduate** in Other Universities

2010-up to date: Sudan Academy of Science, I taught the courses of High Vacuum Physics and Optoelectronics Physics, Sudan Institute of Materials

# 9. Supervision of Graduate Students:

### Supervisor and co-supervisor of High Diploma, M.Sc. and Ph.D. students in SUST

- 1. **Abdullah Elrasheed Mohamed**, Studies on Energy Loss of Electron at Low Velocities, Master thesis (Partial), SUST, Khartoum, Sudan, 2006
- 2. **Elnapega Mohamed Nageeb**, Electrons Velocity Distribution for Plasma Debye Sphere in Tokomak, Master Thesis (Partial), SUST, Khartoum, Sudan, May 2009
- 3. **Elsadig Gumaa Elnour Gumaa**, Calculation of Stopping Power and Energy Range for Hydrogen Ion in Concrete, Master thesis (Partial), SUST, Khartoum, Sudan, June 2009
- 4. **Habib Suleiman Judi Bush**, Monte Carlo Simulation of X- Ray Absorption of Bismuth Oxide, Nano Particles Master Thesis (Full), SUST, Khartoum, Sudan, September 2011
- 5. Ali Yahia Ali, Simulation of Proton Induced X- Ray Emission in Superconductor Materials, Master Thesis (Partial), SUST, Khartoum, Sudan, August 2012
- 6. **Adam Suleiman Ibrahim**, Conductivity Simulation of Gallium Arsenide (GaAs), Master Thesis (Partial), SUST, Khartoum, Sudan, August 2012
- 7. Ibrahim Omer Abdullah, X-ray Attenuation on some Materials, High Diploma, Thesis (Partial), SUST,

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Khartoum, Sudan, February 2012

# 10. Internal and External Examiners

- 10.1. I have examined 6 Theses of Ph. D. in Physics as an external Examiner.
- 10.2. I have examined 25 Theses of M.Sc. in Physics as an internal Examiner
- 10.3. I have examined 60 projects of B.Sc. in Physics as an internal Examiner

### 11. Research Projects:

- 11.1. The Chinese National Science Foundation under the Grand (No. 10175015 and 10490180) 2003 -2005)
- 11.2. The Egyptian Center for Theoretical Physics (ECTP)
- 11.3. Nano Optoelectronic (Nano Biomedicine Materials) School of Physics; Universiti Sains Malaysia, Pinang, Malaysia, 05/2009-05/2010

### **12. Administrative Experience:**

11-1997 -04-1999, Head of Physics Department, Kassala University- Kassala -Sudan

**04-1999 -09-1999**, SIFNS, Research Assistant, Sudan

2006-2009, Coordinator of Master Program of Physics at SUST, Khartoum, Sudan

# 13. Foreign Research Institutes Visited for Academic Work:

- **13.1.** Institute of High Energy Physics: IHEP, Beijing, China, 2001, 2004
- 13.2. Institute of High Energy Physics: IHEP, Beijing, China, 2002
- 13.3. National Synchrotron Radiation Line: NSRL, Hefei, China
- 13.4. Shanghai Institute of Nuclear Research: SINR, Shanghai, China, 2003, 2004, 2005
- 13.5. Shanghai Synchrotron Radiation Facilities: SSRF, Shanghai, China, 2003, 2004, 2005
- **13.6.** Egypt Research Reactor **2**: EG RR 2- Cairo Egypt, 2007, 2008
- 13.7. International Centre for Theoretical Physics (ICTP), Trieste, Italy, 2007, 2008
- 13.8. Nano Optoelectronics Research Laboratory (NOR), USM, Pinang, Malaysia, 2009, 2010
- 13.9 Physics Department, College of Science, Imam University, Riyadh, Saudi Arabia, 2012

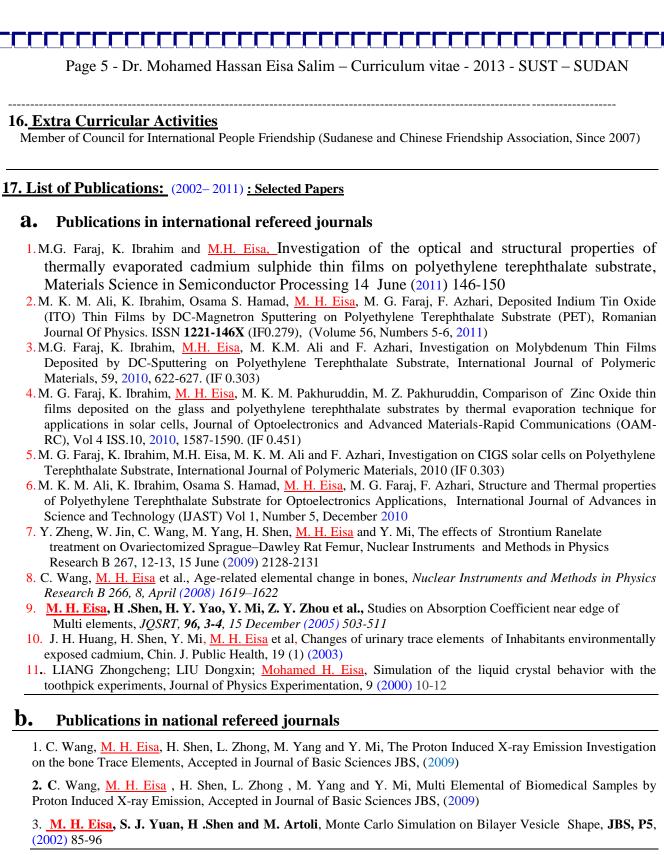
### 14. Languages:

Language	Speaking	Reading	Writing	Listening
Arabic (Native)	Excellent	Excellent	Excellent	Excellent
English	Very Good	Excellent	Very Good	Excellent
Chinese [Mandarin]	Good	Good	Good	Very Good
French	Good	Good	Good	Good

### 15. Memberships:

### **Membership of Committees**

- **15.1.** Member of Sudanese Physical Society (SPS)
- 15.2. Member of SIFNS, Research Unit, KH, Sudan
- 15.3. Member of Applied Ion Beam Laboratory, Institute of Modern Physics (IMP), FU, Shanghai, China
- 15.4. Member of the Egyptian Center for Theoretical Physics (ECTP) Center of Excellence
- 15.5. Member of the of Committee of Prof. Dr. Olfat Aly Kamel Post- Graduate Fellowships, at ECTP
- 15.6. Member of the International X-ray Absorption Fine-Structure (XAFS) Society (IXAS)
- **15.7**. Member of Materials Research Society (MRS)



# b.

- on the bone Trace Elements, Accepted in Journal of Basic Sciences JBS, (2009)
- 2. C. Wang, M. H. Eisa, H. Shen, L. Zhong, M. Yang and Y. Mi, Multi Elemental of Biomedical Samples by
- (2002) 85-96

C. Books:	Two books (Electrodynamics book and Plasma book) in preparation					

# **d.** Contributions to conference proceedings

- M.G. Faraj, K. Ibrahim, M. H. Eisa, M. K. M. Ali and F. Azhari, Comparative studies of the Properties of Molybdenum Thin Films Deposited on Different Substrates by DC Sputtering, The 2<sup>nd</sup> ISESCO International Workshop and Conference on Nanotechnology 2010 (IWCN2010) (<a href="http://pkukmweb.ukm.my/~iwcn2010/">http://pkukmweb.ukm.my/~iwcn2010/</a>) on 25<sup>th</sup>-27<sup>th</sup> January 2010, Nanotechnology in Energy, Materials and Health.
- M. K. M. Ali, K. Ibrahim, M. H. Eisa, M. Z. Pakhuruddin and M.G. Faraj, Optical and Electrical Properties of Indium Tin Oxide (ITO) Thin Films Prepared by Thermal Evaporation Method on Polyethylene Terephthalate (PET) Substrate, The 1<sup>st</sup> International Conference on Advancement of Materials and Nanotechnology (ICAMN 1) 2010 Kuala Lumpur
- 3. M. H. Khalid, K. Ibrahim, M. N. Najimudin, M. H. Eisa and F. Azhari, A Novel Technique to Trap and Investigate Single Cell E-Coli Bacteria on psi, The 2nd ISESCO International Workshop and Conference on Nanotechnology 2010 (IWCN2010), 25th to 27th January (2010)–(<a href="http://pkukmweb.ukm.my/~iwcn2010/">http://pkukmweb.ukm.my/~iwcn2010/</a>), Kuala Lumpur, Malaysia
- 4. M. H. Khalid, K. Ibrahim, M. N. Najimudin, M. H. Eisa and F. Azhari, Effect of Variable Current Density Parameter to Fabrication Porous Silicon, the 2nd ISESCO International Workshop and Conference on Nanotechnology 2010 (IWCN2010), 25th to 27th January (2010)-(http://pkukmweb.ukm.my/~iwcn2010/), Kuala Lumpur, Malaysia
- 5. M. H. Eisa, H. Shen, Y. Mi, K. Ibrahim, K. M. Haroun, I. M. Elfaki and M.H. Khalid, X-Ray Absorption Fine Structure Measurements on Bone Composition, International Conference on Nanotechnology Research and Commercialization (ICONT2009) (http://icont2009.sirim.my), 14-17 December 2009, Langkawi, SIRIM
- 6. M. H. Khalid, K. Ibrahim, M. N. Najimudin and M. H. Eisa, A comparison of Atomic Force Microscopy and Field–Emission Scanning Electron Microscopy for Imaging the Single Cell of E- Coli Bacteria, the National Physics Conference 2009 (PERFIK2009), 7<sup>th</sup> to 9<sup>th</sup> December (2009)-(http://pvmc.uitm.edu.my/perfik/index.htm), Malacca, Malaysia
- 7. M.K.M. Ali, K. Ibrahim, M. H. Eisa, M. G. Faraj, Osama S. Hamad and F. Azhari, Characterization of Polyethylene terephthalate (PET) substrate for Optoelectronic Applications, the First International Conference on Engineering, Environment, Economic, Safety & Health, CONVEEESH'09, (http://acta.fih.upt.ro/pdf/2009-3/ACTA- 2009-3-14-Event-3.pdf) Manado Island, Indonesia 26-27 October 2009
- 8. M.K.M. Ali, K. Ibrahim, M. H. Eisa, M. G. Faraj, Osama S. Hamad and F. Azhari, Characterization of Indium Tin Oxide Thin Films Deposited by DC-Magnetron Sputtering on Polyethylene terephthalate (PET) substrate, The First International Conference on Engineering, Environment, Economic, Safety & Health, CONVEEESH'09, (http://acta.fih.upt.ro/pdf/2009-3/ACTA- 2009-3-14-Event-3.pdf), Manado Island, Indonesia 26-27 October (2009)
- 9. F. Azhari, K. Ibrahim, M.H. Eisa, M.K.M. Ali, M. H. Khalid, M. G. Faraj, Liu Chao Zhuo, Characterization of Aluminium Deposited on PET Substrate by DC Sputtering and Evaporation Methods, the 7<sup>th</sup> Asia Pacific Conference on Sustainable Energy and Environmental Technologies, China Academy of Science, (http://apcseet2009.upc.edu.cn) Qingdao, China, 15-17 October (2009)
- 10. C. Wang1, Y. Zheng, W. Jin, H. Shen, L. Zhong, M.H. Eisa, Y. Mi, M. Yang, J. Gao, Evaluation of strontium in the bone development, Tuesday 22 July 2008, 10:00, Biology, Medicine and Botany abs115, p34, ICNMTA 2008 (11th International Conference on Nuclear microprobe Technology and Applications 20-25-(2008), Hungary
- 11. Wang Cheng-Hua; M. H. Eisa; Shen Hao; Lijia Qing; Zhang Jiexiong; Wang Jianzhong; Yang Mingjie; Mi Yong; Yao Huiying, thirteenth meeting of the National Nuclear Physics Conference and the Eighth Congress, Proceedings of the thirteenth National Nuclear Physics Conference and the Eighth Congress Abstract Book, (2007), Chinese Nuclear Physics Society Press, Lanzhou, Gansu, Jiayuguan, China
- 12. M. H. Eisa et al, A nuclear Technique Study on the Content of Zinc and Strontium in Different Annual Rings Layer of Whale Tooth, Seventh Symposium on Use of Nuclear Techniques in Environmental Studies, 3-5 September, (2007) Yarmouk University, Irbid-Jordan
- 13. M. H. Eisa et al., Measurement of Mass Absorption Coefficients of Multi Elements, the XXXVI Conference, Solid State Physics and Materials Science Workshop Nanostructure; Science; Fabrication; Characterization and Devices, 10<sup>th</sup> to 14<sup>th</sup> September (2006) Alexandria, Egypt
- 14. Mohamed. Hassan Eisa, L. Zhong, H. Shen, Y. Mi, H. Y. Yao, Z. Y. Zhou, Limitation of Quantitative Measurement to Biological Samples by PIXE (*CAARI 2004, On Line*)

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### **e.** Internal Reports

I have written several reports about, laboratory report, course report, visit report, thesis report, workshop report and exam report.

### 18. Submitted papers

- **18.1 M. H. Eisa and et al,** PIXE Investigation on the Effects of Parathyroid Hormone on Elemental Content in Rat Bones, submitted (2013)
- **18.2 M. H. Eisa and et al,** Gravitational self energy mass and Gravitational radiation quantization within the frame work of the generalized general relativity (2013)
- **18.3 M. H. Eisa and et al,** A Review: Atomic Force Microscopy a Powerful Tool in Biomedical Materials (2013)

# 19. Seminars (Selected)

- [1]. M. H. Eisa, Monte Carlo Simulation on Bilayer Vesicle Shape, 2001, Fudan, Shanghai, China
- [2]. M. H. Eisa, EXAFS Studies on Biomedical Science, 2002, Fudan, Shanghai, China
- [3.] M. H. Eisa, PIXE Limitation of Quantitative Measurement to Biological Samples, 2003, Fudan, Shanghai, China
- [4]. M. H. Eisa, Applications of PIXE Technique, 2003, SIFNS, Khartoum, Sudan
- [5]. M. H. Eisa, PIXE Study on the effects of Parathyroid Hormone on the Trace Elements, 2004, Fudan, Shanghai, China
- [6]. M. H. Eisa, Studies on Absorption Coefficient near edge, 2005, Fudan, Shanghai, China
- [7]. M. H. Eisa, PIXE Study on the effects of different Age of rat on Bone mineral Content, 2005, Fudan, Shanghai, China
- [8]. M. H. Eisa, Modern Nuclear Analytical Techniques and Their Applications (NATs), 2006, SUST, Khartoum, Sudan
- [9]. M. H. Eisa, Applications of Nuclear Techniques in Biomedical, 2006, SUST, Khartoum, Sudan
- [10]. M. H. Eisa, Theory and Characteristics of Atomic Force Microscopy, 2009, USM, Pinang, Malaysia
- [11]. M. H. Eisa, ICP-Matching Network, 2009, USM, My
- [12]. M. H. Eisa, Upgrade of AFM Imaging for Biomedical Material Samples, 2009, USM, Pinang, Malaysia

# 20. Referees

### The following people I have written them as referees

- 1. Ali El-Tahir Sharaf Eldin (SUDAN), Professor, Physics Department, Faculty of Science, Khartoum University Professor, Director of the Sudan Institute for Natural Science (SIFNS), (Higher Ministry of Education, Sudan) Elgamah Street, Khartoum, 11115, Sudan, Tel: +249-183-779219, Fax +249-183-779219, E-mail: <a href="mailto:sifns@gmail.com">sifns@gmail.com</a>
- **2. Izz-Eldin Mohamed Osman** (SUDAN), **Professor**, Former Vice Chancellor of SUST, Khartoum, Sudan, E-mail: <a href="mailto:izzeldin@acm.org">izzeldin@acm.org</a>
- **3. Hisham Mohammed Widatallah** (SUDAN), **Professor**, Physics Department, College of Science, **Sultan Qaboos** University P.O. Box 36 Al-Khodh, Muscat 123 OMAN, E-mail: hishammw@squ.edu.om
- **4. Shen Hao (China), Professor**, Institute of Modern Physics, Fudan University, Shanghai 200433, P. R. China, Corresponding author. Tel.: +862155664131, E-mail address: haoshen@fudan.edu.cn (H. Shen).
- **5. Kamarulazizi Ibrahim (Malaysia) Professor**, Nano-Optoelectronics Research & Technology Laboratory (NOR), the School of Physis, **Universiti Sains Malaysia**, 11800, Pulau Pinang, Malaysia, Tel: +6046533599 Fax: +606579150, Office No. 105, E-mail: kamarul@usm.my

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M.H.ELEO

Assoc. Prof. Dr. Mohamed Hassan Eisa Salim (M. H. Eisa, 易桑)

Date: 04-02-2013