

Curriculum Vitae



1. Personal Details:

Correspondence Name: *Mohamed Hassan Eisa Salim* (M. H. *EISA* 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

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Position: Associate Professor of Nuclear Physics and Nano 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 titled " Nuclear Techniques Investigation on the role of Trace Elements in Bone (Fudan University, 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 titled " 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:

- a. Application of Ion-beam Technology in Material Science and in Biomedicine Science
- b. Nanotechnology: (Nanomaterials: Nanoparticles and Quantum Dots, Surface Treatments, Nano-composites, Carbon Nanotubes, Nanostructured materials, nano biomedicine)
- c. Computational Physics

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
2006: 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
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7. Professional Experience:

a. 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
2011: Faculty of Education, University of Khartoum

b. Reviewer for Journals

1. World Applied Science Journal (WASJ), <http://www.wasj.org>, 2010-2011
-

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

Undergraduate

1999- 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

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

Graduate in SUST

High Diploma: Non Destructive Test course

M. Sc.: Advanced Nuclear Physics and Plasma Physics

9. Supervision of Graduate Students:

a. Supervisor and co-supervisor of 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, in progress 2011

b. Supervisor and co-supervisor of High Diploma, M.Sc. and Ph.D. students in other Universities:

1. Mohamed Gaseim Abdel-Mohammud, Studies on Nuclear Fission Reaction, High Diploma Thesis, University of Khartoum, Khartoum, Sudan, December 2008

10. Research Projects:

10.1. The Chinese National Science Foundation under the Grand (No. 10175015 and 10490180) 2003 -2005)

10.2. *The Egyptian Center for Theoretical Physics (ECTP)*

10.3. *Nano Optoelectronic (Nano Biomedicine Materials) School of Physics; Universiti Sains Malaysia, Pinang, Malaysia, 05/2009-05/2010*

11. 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

12. Foreign Research Institutes Visited for Academic Work:

12.1. Institute of High Energy Physics: **IHEP**, Beijing, China, 2001, 2004

12.2. Institute of High Energy Physics: **IHEP**, Beijing, China, 2002

12.3. National Synchrotron Radiation Line: **NSRL**, Hefei, China

12.4. Shanghai Institute of Nuclear Research: **SINR**, Shanghai, China, 2003, 2004, 2005

12.5. Shanghai Synchrotron Radiation Facilities: **SSRF**, Shanghai, China, 2003, 2004, 2005

12.6. Egypt Research Reactor 2: **EG RR 2**- Cairo – Egypt, 2007, 2008

12.7. International Centre for Theoretical Physics (**ICTP**), Trieste, Italy, 2007, 2008

12.8. Nano Optoelectronics Research Laboratory (**NOR**), USM, Pinang, Malaysia, 2009, 2010

13. 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

14. Memberships:

Membership of Committees

14.1. Member of Sudanese Physical Society (**SPS**)

14.2. Member of Several International Journals of Physics

14.3. Member of SIFNS, Research Unit, KH, Sudan

14.4. Member of Applied Ion Beam Laboratory, Institute of Modern Physics (**IMP**), FU, Shanghai, CN

14.5. Member of the Egyptian Center for Theoretical Physics (**ECTP**) Center of Excellence

14.6. Member of the of Committee of Prof. Dr. Olfat Aly Kamel Post- Graduate Fellowships, at **ECTP**

14.7. Member of the International X-ray Absorption Fine-Structure (XAFS) Society (**IXAS**)

14.8. Member of Materials Research Society (**MRS**)

15. Extra Curricular Activities

Member of Council for International People Friendship (Sudanese and Chinese Friendship Association, Since 2007)

16. List of Publications: (2000 - 2011): Selected Papers

1. M.G. Faraj, K. Ibrahim and M.H. Eisa, Investigation of the optical and structural properties of thermally evaporated cadmium sulphide thin films on polyethylene terephthalate substrate, *Materials Science in Semiconductor Processing* 14 June (2011) 146-150
2. M. K. M. Ali, K. Ibrahim, Osama S. Hamad, M. H. Eisa, M. G. Faraj, F. Azhari, Deposited Indium Tin Oxide (ITO) Thin Films by DC-Magnetron Sputtering on Polyethylene Terephthalate Substrate (PET), *Romanian Journal Of Physics*. ISSN **1221-146X** (IF0.279), (Volume 56, Numbers 5-6, 2011)
3. M.G. Faraj, K. Ibrahim, M.H. Eisa, M. K.M. Ali and F. Azhari, Investigation on Molybdenum Thin Films Deposited by DC-Sputtering on Polyethylene Terephthalate Substrate, *International Journal of Polymeric Materials*, 59, 2010, 622-627. (IF 0.303)
4. 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 2nd ISESCO International Workshop and Conference on Nanotechnology 2010 (IWCN2010) (<http://pkukmweb.ukm.my/~iwcN2010/>) on 25th-27th January 2010, Nanotechnology in Energy, Materials and Health.
5. M. G. Faraj, K. Ibrahim, M. H. Eisa, M. K. M. Pakhuruddin, M. Z. Pakhuruddin, Comparison of Zinc Oxide thin films deposited on the glass and polyethylene terephthalate substrates by thermal evaporation technique for applications in solar cells, *Journal of Optoelectronics and Advanced Materials-Rapid Communications (OAM-RC)*, Vol 4 ISS.10, 2010, 1587-1590. (IF 0.451)
6. M. G. Faraj, K. Ibrahim, M.H. Eisa, M. K. M. Ali and F. Azhari, Investigation on CIGS solar cells on Polyethylene Terephthalate Substrate, *International Journal of Polymeric Materials*, Accepted for publication 2010 (IF 0.303)
7. 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 1st International Conference on Advancement of Materials and Nanotechnology (ICAMN 1) 2010 Kuala Lumpur
8. M. K. M. Ali, K. Ibrahim, Osama S. Hamad, M. H. Eisa, M. G. Faraj, F. Azhari, Structure and Thermal properties of Polyethylene Terephthalate Substrate for Optoelectronics Applications, *International Journal of Advances in Science and Technology (IJAST)* Vol 1, Number 5, December 2010
9. 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)–(<http://pkukmweb.ukm.my/~iwcN2010/>), Kuala Lumpur, Malaysia
10. 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
11. 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
12. 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), 7th to 9th December (2009)–(<http://pvmc.uitm.edu.my/perfik/index.htm>), Malacca, Malaysia
13. 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
14. 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)
15. 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 7th Asia Pacific Conference on Sustainable Energy and Environmental Technologies, China Academy of Science, (<http://apcseet2009.upc.edu.cn>) Qingdao, China, 15-17 October (2009)
16. Y. Zheng, W. Jin, C. Wang, M. Yang, H. Shen, M. H. Eisa and Y. Mi, The effects of Strontium Ranelate treatment on Ovariectomized Sprague-Dawley Rat Femur, *Nuclear Instruments and Methods in Physics*

Research B 267, 12-13, 15 June (2009) 2128-2131

17. C. Wang, [M. H. Eisa](#), H. Shen, L. Zhong, M. Yang and Y. Mi, Multi Elemental of Biomedical Samples by Proton Induced X-ray Emission, Accepted in Journal of Basic Sciences JBS, (2009)
18. C. Wang, [M. H. Eisa](#), H. Shen, L. Zhong, M. Yang and Y. Mi, The Proton Induced X-ray Emission Investigation on the bone Trace Elements, Accepted in Journal of Basic Sciences JBS, (2009)
19. 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
20. C. Wang, [M. H. Eisa](#) et al., Age-related elemental change in bones, *Nuclear Instruments and Methods in Physics Research B* 266, 8, April (2008) 1619–1622
21. 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*
22. [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*
23. [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, 10th to 14th September (2006) Alexandria, Egypt*
24. [M. H. Eisa](#), [H. Shen](#), [H. Y. Yao](#), [Y. Mi](#), [Z. Y. Zhou et al.](#), Studies on Absorption Coefficient near edge of Multi elements, *JQSRT*, **96**, 3-4, 15 December (2005) 503-511
25. [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*)
26. J. H. Huang, H. Shen, Y. Mi, [M. H. Eisa](#) et al, Changes of urinary trace elements of Inhabitants environmentally exposed cadmium, *Chin. J. Public Health*, 19 (1) (2003)
27. [M. H. Eisa](#), [S. J. Yuan](#), [H. Shen](#) and [M. Artoli](#), Monte Carlo Simulation on Bilayer Vesicle Shape, *JBS*, **P5**, (2002) 85-96
28. LIANG Zhongcheng; LIU Dongxin; [Mohamed H. Eisa](#), Simulation of the liquid crystal behavior with the toothpick experiments, *Journal of Physics Experimentation*, 9 (2000) 10-12

17. 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

18. International Conferences-Participant (Selected)

- [1]. **1996:** International Conference on Holography and Optical Processing [ICHOP 96] Aug 26-28-1996, NNU, Nanjing, China
 - [2]. **2005:** The 15th International Conference on Dynamical Processes in Excited States of Solid [DPC2005] 30-05 July -2005 F U, Shanghai, China
 - [3]. **2006:** The XXXVI Conference, Solid State Physics and Materials Science Workshop Nanostructure; Science; Fabrication; Characterization and devices 10-14- September 2006 Alexandria, Egypt
 - [4]. **2007:** The first International Conference in Laser Science and Engineering and its Application, SUST, January 2007, Khartoum, Sudan
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19. Symposia, Summer School and Workshops (Selected)

- [1]. **2007:** Seventh Symposium on Use of Nuclear Techniques in Environmental Studies, 3-5 September, 2007 Yarmouk University, Irbid- Jordan
- [2]. **2007:** CTP, Egypt, Cairo, Summer School 2007, Computational Techniques and Application, 9-11 September 2007, at the British University, Cairo, Egypt
- [3]. **2007:** ICTP, Italy, Trieste, School on Physics, Technology and Applications of Accelerator Driven Systems (ADS), 19 - 30 November 2007
- [4]. **2008:** EAEA, Egypt, Cairo, Arab School on Research Reactors, 06-24 April 2008
- [5]. **2008:** ICTP, Italy, Trieste, International Workshop on the Frontiers of Modern Plasma Physics 14 –25 July 2008.

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: sifns@gmail.com


2. **Izz-Eldin Mohamed Osman (SUDAN), Professor**, Former Vice Chancellor of SUST, Khartoum, Sudan, E-mail: izzeldin@acm.org

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

Dr. Mohamed Hassan Eisa Salim (M. H. Eisa)



Date: 14-08-2011