

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Curriculum Vitae

Alnazeir Osman Mohammed Hamza, PhD.

Professor

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1. PERSONAL DATA

- ❖ **Birth Date:** 10/7/1967, Tangasi, Marawe, North of Sudan.
- ❖ **Nationality:** Sudanese.
- ❖ **Religion:** Muslim.
- ❖ **Marital Status:** Married and A father of Six Kids.

2. PRESENT ADRESS

- ❖ **Work:** College of Engineering, Biomedical Engineering dept., Sudan University of Sciences and Technology (SUST),
- ❖ **Home:** Sudan University of Sciences and Technology Campus, Jabra, flat B22.

4. QUALIFICATIONS

- ❖ **PhD. in Medical Physics & Engineering** University of KwaZulu Natal, Durban, South Africa, 2006.
- ❖ **M.Sc. in Medical Physics & Engineering**, Surrey University-UK, Distinction, 1999.
- ❖ **BSc. Diagnostic Radiologic Technology**, Sudan University of Science and Technology, First Class, 1995.

5. THESIS TITLE

- ❖ **PhD Title:** Automatic Analysis of Images Obtained From QC Measurements of Mammography X-ray Units and the Design of an Improved QC Phantom for Mammography.

6. AREA OF INTERSEST

- ❖ Medical Imaging, Quality Control of Medical Equipments, Biomedical Image Processing, Computer Aided Diagnosis, Radiation Protection and Radiobiology.

7. PROFESSIONAL EXPERIENCE

- ❖ **May 2017 - Now, Professor**, College of Engineering (Biomedical Engineering dept.), Sudan University of Sciences and Technology (SUST).
- ❖ **2009- 2016, Associate Professor**, College of Engineering (Biomedical Engineering dept.), Sudan University of Sciences and Technology (SUST).
- ❖ **2017- Now**, Dean Faculty of Radiological Sciences, University of Medical Sciences and Technology (Private University-Khartoum-Sudan).
- ❖ **2016- 2017**, Dean College of Engineering, University of Medical Sciences and Technology (Private University-Khartoum-Sudan).

- ❖ **2006-2016**, Deputy Dean College of Engineering, University of Medical Sciences and Technology (Private University-Khartoum-Sudan).
- ❖ **2006- 2009, Assistant Professor**, College of Engineering (Biomedical Engineering dept.), SUST.
- ❖ **2000- 2001, Senior Lecturer**, College of Engineering (Biomedical Engineering dept.), SUST.
- ❖ **1996- 1997, Teaching Assistant**, College of Medical Radiologic Sciences, SUST.

8. TEACHING EXPERIENCES

A. UNDERGRADUATE

- Radiation Physics and Protection
- Cell and Molecular Biology.
- Anatomy and Physiology.
- Image Recording Techniques.
- MRI System.
- CT System.
- Research Methodology.
- Biostatistics.
- Quality Assurance and Control.
- Digital Image Processing.
- Medical Imaging.
- Digital Signal Processing.
- Ultraviolet Radiation.
- Thermal Method in Medicine.
- Audiometry.
- Audiology.

B. POSTGRADUATE

- Radiation Dosimetry and Protection.
- Radiation Detection and Measurements.
- Radiobiology.
- Electronics.
- Bioinstrumentations.
- Advance Medical Imaging.
- MRI Spectroscopy.
- Biodielectrics.
- Nuclear Medicine Equipments.
- Radiotherapy Systems.
- Laser in Medicine.
- Computing and Micro-computing
- Biomaterial.
- Musculoskeletal Function and Patient Monitoring.

9. SUPERVISION OF POST GRADUATE STUDENTS

A/PhD Research

PhD Thesis (Main Supervisor)

1. Non Invasive Technique for Classification of Brain Tumours Based on Magnetic Resonance Images, Kawther Mohammed Tom, College of Engineering/Biomedical Department, Sudan University of Sciences and Technology, 2013.
2. An algorithm for discrimination of EEG Based Motor Imagery Brain Vcomputer Interface, Rania Elsadig El mahdi,, College of Engineering/Biomedical Department, Sudan University of Sciences and Technology, 2013.
3. Detection of Breast Cancer Using Texture Analysis Methods, Ashgan Mohammed Omer, College of Engineering/Biomedical Department, Sudan University of Sciences and Technology, 2012.
4. Design of an FPGA-based Brain Computer Interface System for Electrical Wheelchair, Montasir Mohamed Mansour Ali, College of Engineering/Biomedical Department, Sudan University of Sciences and Technology, 2014.
5. Non Invasive Technique for Classification of Pulmonary Cancer Based on Computerized Tomography, Mohammed Omer Osman, Sudan Academy of

Sciences, Engineering research and industrial council, Republic of the Sudan, 2015.

6. Design of Mobile solar Powered Health care Units for Rural Areas and Displaced peoples Camps, Mohammed Ahmed Alshamy, Sudan Academy of Sciences, Engineering research and industrial council, Republic of the Sudan, 2015.
7. Design real time automatic algorithm for Glaucoma disease, Arwa Ahmed Gasm Aseed, College of Engineering/Biomedical Department, Sudan University of Sciences and Technology, 2015.
8. Suggested Diagnostic Reference Levels in Radiography in Sudan, Altahir Abed Almalik Abu Khair, Faculty of Radiological Sciences and Nuclear Medicine Alrebat University (FRSNM), 2015.
9. Medical Equipments Maintenance and Management System, Mohammed Omer Khider, University of Medical Sciences and Technology, 2016.
10. Design 3D medical image from 2D images, Azza Gelly, College of Engineering/Biomedical Department, Sudan University of Sciences and Technology, 2017.

PhD Thesis (Co-Supervisor)

- ❖ Time Saving in Medical Imaging Service Integrating Digital Imaging with Six Sigma Concept, Mohammed Ahmed Alsheekh, Sudan University of Sciences and Technology, 2013.

B/MSc BY Research (Main Supervisor)

Sudan University of Sciences and Technology

- ❖ Determination of Optimum dose for X-ray Aasim Omer Masaid, 2013, College of Engineering/Biomedical Department, Sudan University of Sciences and Technology.

Sudan Academy of Sciences, Engineering Research and Industrial Council

- ❖ Cardiac Arrhythmia detection and analysis from cardiogram using Matlab, Fatima Mustfa Mohammed, Sudan Academy of Sciences, Engineering Research and Industrial Council 2009.
- ❖ Healthcare technology management: developing an integrated computerized assessment system, Sed Ahmed Abayzeed, Sudan Academy of Sciences, Engineering Research and Industrial Council 2009.
- ❖ Improve the performance of the dialysis machine, Sojoud Haidar Mostafa, Sudan Academy of Sciences, Engineering Research and Industrial Council 2013.
- ❖ Detection of breast benign tumours using texture analysis, Suliman Ahmed, Sudan Academy of Sciences, Engineering Research and Industrial Council 2013.
- ❖ Wireless Pulse Oximeter by using Zigbee, Moutaz Isam Eldin Ali, Sudan Academy of Sciences, Engineering Research and Industrial Council 2014.
- ❖ Automatic Subglottic Prevention of Ventilator Associated Pneumonia (VAP), Sara Ali Alhag, Engineering Research and Industrial Council, 2015.

C/MSc by Course (Dissertation)

C1 Sudan University of Sciences and Technology

- ❖ Appropriateness of Clinical Laboratory Photometers Quality Requirements Issam Osman Elhassan Elkhalifa, College of Engineering/Biomedical Department Sudan University of Sciences and Technology, 2009.
- ❖ Comprehensive Quality Control for Conventional X-ray Machine, Marwa Abed Alah Mohammed Alhasan, 2011, College of Engineering/Biomedical Department, Sudan University of Sciences and Technology.
- ❖ Quality Control of Flame Photometers, Rashad Abed Alah Ahmed, 2012, College of Engineering/Biomedical Department Sudan University of Sciences and Technology.
- ❖ Modification of Ultrasound Machine to Diagnose Breast Diseases, Huda Moammed Musa, 2012, College of Engineering/ Biomedical Department, Sudan University of Sciences and Technology.
- ❖ Evaluation of Mechanical Faults in Haemodialysis Machines, Moammed Omer Osman, 2013, College of Engineering/ Biomedical Department, Sudan University of Sciences and Technology.
- ❖ Investigating the Effectiveness of QC in Haemodialysis Machines, Abed Alah Salih Abed Alah, 2013, College of Engineering/ Biomedical Department, Sudan University of Sciences and Technology.
- ❖ Simulation of X-ray Images, Sheima Siulman Warag, 2014, College of Engineering/ Biomedical Department, Sudan University of Sciences and Technology.
- ❖ Home Healthcare System for Prediction of Sudden Cardiac Death, Fatima Mustfa Mohammed, 2014, College of Engineering/ Biomedical Department, Sudan University of Sciences and Technology.
- ❖ Evaluation of Electrical Safety in Healthcare Facilities, Mohammed Ahmed Alshamy, 2014, College of Engineering/ Biomedical Department, Sudan University of Sciences and Technology.
- ❖ Anew X-ray Cooling System, Azza Abdurrahman Mohammed, 2015, College of Engineering/ Biomedical Department, Sudan University of Sciences and Technology.
- ❖ Automatic Detection of Benign Breast Tumors, Mawada Altaib Mohammed Mustafa, 2016, College of Engineering/ Biomedical Department, Sudan University of Sciences and Technology.

C2 University of Medical Sciences and Technology

- ❖ New Non Invasive Automatic Flat Foot Detector, Heba Kamal Ahmed, University of Medical Sciences and Technology, 2013.
- ❖ Computerized Tomography Quality Control, Atif Abed Alaziz Mohammed, University of Medical Sciences and Technology, 2013.
- ❖ Designing Drugs Availability Information Contact Center, Elmoataz Bellah Eltuhami, University of Medical Sciences and Technology, 2013.
- ❖ Adrenaline Indicator Circuit, Firas Mohammed Osman, University of Medical Sciences and Technology, 2013.
- ❖ Enhancement of Cardiac Signals (ECG) using wavelet techniques, Rufeida Eissa Abed Almutalb, University of Medical Sciences and Technology, 2014.

- ❖ Automatic Computer – Aided Detection of Breast Benign Tumors, Eman Mohammed Abd Elrahim Mohammed, University of Medical Sciences and Technology, 2014.
- ❖ Evaluation of Radiation Protection in Some Radiological Departments in Khartoum State, Mohammed Yassin Ahmed, University of Medical Sciences and Technology, 2014.
- ❖ ICU Design Guidelines, Suhaib Alfadul Abdalla Abass, University of Medical Sciences and Technology, 2014.
- ❖ X-Ray Tube Heating Monitoring by Micro-controller, Rihab Abd Elbagi Mohammed, University of Medical Sciences and Technology, 2014.
- ❖ Modeling Sudan Hospital Information System by Using 3LGM², 2015, Fatima Esam, University of Medical Sciences and Technology.
- ❖ Design of Automatic Sleep Apnea System, 2016, Sara Musa Omer, University of Medical Sciences and Technology.
- ❖ Investigation of the Relationship of Thumbprint Pattern and Blood Group, Youstra Osman Abdallaa Mohammed, 2017, University of Medical Sciences and Technology.
- ❖ Detection and Diagnosis the Breast Cancer Using Computer System, Shaded Mahmoud Ibrahim, 2017, University of Medical Sciences and Technology.

10. ADMINISTRATIVE EXPERINCES

- ❖ **2017- Now**, Dean Faculty of Radiological Sciences, University of Medical Sciences and Technology (Private University-Khartoum-Sudan).
- ❖ **2016- 2017**, Dean College of Engineering, University of Medical Sciences and Technology (Private University-Khartoum-Sudan).
- ❖ **2006-2016**, Deputy Dean College of Engineering, University of Medical Sciences and Technology (Private University-Khartoum-Sudan).
- ❖ **2013 – 2015**: Convener of Faculty of Engineering Research Council.
- ❖ **2007 – 2010**: Coordinator of Master of Biomedical Engineering Programme, Sudan University of Sciences and Technology
- ❖ **2000 – 2002**: Head Department of Basic Sciences College of Radiology, Sudan University of Sciences and Technology

11. MEMBERSHIPS

- ❖ **2007 – now**: Member of Biomedical Engineering Council, Republic of Sudan.
- ❖ **2007 – now**: Member of medical and health professional Council, Republic of Sudan.
- ❖ **2007 – now**: Member of General consultancy Board, Ministry of the Cabinet, Republic of Sudan.
- ❖ **2007 – now**: Member of Faculty of Engineering Research Council.
- ❖ **2000 – 2002**: Member of Sudan University Senate.

- ❖ Member of Editorial Board of Journal of Biomedical Image Processing, <http://www.bowenpublishing.com/jbip/EditorialBoard.aspx>.
- ❖ **2010 – 2014:** Member of Editorial Board of Journal of Sciences and Technology, Sudan University of Sciences and Technology
- ❖ **2007 – now:** Member of Faculty of Medical Radiologic Sciences Research Council.
- ❖ **2000 – now:** Member of Sudan University of Sciences and Technology Senate.
- ❖ **2007 – now:** Member of Ionizing Radiation Laws Revision Committee, Ministry of Health, Sudan.
- ❖ **2017 – now:** Member of board of trustee university of medical sciences and technology

12. EXTRA CURRICULAR ACTIVITIES

- ❖ **Shawahid Anibog Program**, Sudan TV, 2009.
- ❖ **Radiation in Our Life** A TV program”, Khartoum TV, 2009.
- ❖ **Multi Talks** in Biomedical Engineering, Medial Radio FM 99.3, 2007-2009.
- ❖ **Many Articles** of Radiation Awareness in Alwatan Daily News Paper.
- ❖ **Participation in the Establishment** of the Department of Medical Physics in the Colleges of Veterinary Sudan University.
- ❖ **Participation in the Establishment** of the Department of Medical Physics in the Colleges of Medicine University of Alribat, Khartoum, Sudan.
- ❖ **Participation in the Establishment** of the Department of Biomedical Engineering Alneelen University.
- ❖ **External Examiner** of Alneelen University, Faculty of Sciences, Medical Physics Department, 2007, 2008, 2012, 2014.
- ❖ **External Examiner** of University of Science and Technology, Faculty of Engineering, Biomedical Engineering Department, 2009-2010 and 2010-2011.
- ❖ **Evaluation of Many Certificates** to department of admission and certificate authentication and accreditation.
- ❖ **Evaluation of Many MSc Proposals** for the ministry of higher education (University of Science and Technology and University of Medical Sciences and Technology).
- ❖ **Evaluation and Selection** of good researcher for Sudan University good researcher prize.
- ❖ **Consultant** for ministry of higher education for approval of the new radiology and biomedical engineering departments (Almogtrbeen University, Albian College, Sudan International University, Almashrig University, Future University, University of Sciences and Technology).
- ❖ **Consultant** for Engineering Council for approval of biomedical engineering departments, Albian College, Almashrig University, University of Sciences and Technology.

13. SCIENTIFIC PUBLICATIONS

1. **Hamza A O**, Alport M J, (2009). Automatic Scoring of the Collimation QC phantom Using Image Processing Techniques, Journal of Sciences and Technology, Vol. 10 (No 2, June), p. 157-173, Sudan.
2. **Hamza A O**, Alport M J, Rae W I D (2009). Automatic Scoring of the Test Objects in ACR (American College of Radiology) Phantom Images Using Image Processing Techniques, Journal of Sciences and Technology, Vol. 10 (No 2/ June), p. 140-156, Sudan.
3. **Hamza A O**, Ayad C E , Mustfa S A, Alrhman K A, Asir W T, (2009). Effect of MRI Static Magnetic Field on Certain Blood Parameters, Journal of Sciences and Technology, Vol. 10 (No 3/ October), p. 159-167, Sudan.
4. **Hamza A O**, Alport M J, Rae W I D, (2009). Review and Critical Evaluation of the Current Mammography QC Phantoms, Journal of Sciences and Technology, Vol. 10 (No 3/ October), p. 188-204, Sudan.
5. **Hamza A O**, Alport M J, Rae W I D, W I D Rae, (2009). Qualitative and Quantitative Evaluation of the APG Phantom, Journal of Sciences and Technology, Vol. 10 (No 3/ October), p. 168-187, Sudan.
6. **Hamza A O**, Alport M J, Rae W I D, (2009).The Design and Fabrication of A Full Field Quantitative Mammographic Phantom, Journal of Sciences and Technology, Vol. 10 (No 3/ October), p. 141-158, Sudan.
7. **Hamza Alnazier O**, El-Sanosi Maha D, Habbani Asma K, Mustafa Nada A, Mohamed O. Khider (2013). Computer-Aided Detection of Benign Tumors, of the Female Breast, Journal of Clinical Engineering, Vol. 38 (No 1/January/March), p. 32–37 © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.
8. **Hamza Alnazier Osman**, Elkhalifa Issam Osman Elhassan, Hassan_Mohamed Omer Khider, (2012) Appropriateness of Clinical Laboratory Photometers Quality Requirements, Journal of Clinical Engineering, Vol. 37 (Issue 3/ July/September) p. 102–108, © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.
9. Abayazeed SidAhmed A, **Hamza Alnazier O**, (2010). Software Applications in Healthcare Technology - Management, Journal of Clinical Engineering, Vol. 35 (Issue 2/ April/June), p. 88-92, © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.
10. Abayazeed SidAhmed A, **Hamza Alnazier O**, (2010). Developing an Integrated Assessment System for Clinical Engineering Department, Journal of Clinical Engineering, Vol. 35 (Issue 4/ October/December), p. 189-194, © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.
11. El-sheikh Mohammed Ahmed, Adlan Shamboul M, **Hamza Alnazier**, (2011). Appropriateness of six sigma to the management of quality in radiology department, Sudan medical Monitor (SMM), Vol. 6 (No 2/ April-June), p. 101-111, Sudan.

12. El-sheikh Mohammed Ahmed, Adlan Shamboul M, **Hamza Alnazier**, (2012). Time saving in medical imaging service integrating digital imaging with six sigma concept, Journal of Sciences and Technology, Vol. 13 (No 1/ June), p. 42-55, Sudan.
13. Germa Fatehia bushara, Almona Maha Abd Elhady, Bakyr Mlihad Mahmood, Mohamed Mohamed Elfadil, **Osman Alnazeir**, (2013). Detection of breast cancer cells by using texture analysis, Journal of Clinical Engineering, Vol. 38 (No 2/April/June), p. 79-83, © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.
14. **Hamza Alnazier O**, Ebraheem Fatima A, Abbas Alaa K, Abaza Alaa M, Karrar Halah E, Garma Fatehia B, (2013). Design Biological Phantom for Human Breast, Journal of Clinical Engineering, Vol. 38 (No 3/ July/August), p. 117-122 © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.
15. **Hamza Alnazier O.M**, Mohammed Rashad A.A, Elkhalifa Issam O.E. and Khider Mohamed O, (2013). Effectiveness of calibration on flame photometer Performance, Int. J. Biomedical Engineering and Technology, Vol. 12, (No. 4), p. 334-345, Copyright© Inderscience Enterprises Ltd UK.
16. **Hamza Alnazier O**, Osman Mohammed O, Khider Mohamed O, (2013). Evaluation of mechanical and electrical faults in dialysis machines, Journal of Physical Therapy and Health Promotion, Vol. 1 (Issue 1/ December), p 1-7, Copyright© Bowen Publishing, New York, USA.
17. Hamid Mekki Kuku, Suleman Saad Dawood, Hussein Altahir Mohamed, Elfadil Mohamed, **Hamza Alnazier**, (2013). Increasing efficiency of the digital imaging prototype, The Scientific Journal of Alzaiem Alazhari University, Vol 12, p 1-7, Sudan.
18. **Hamza Alnazier O**, Khider Mohamed O, Saeed Nuha O, Mohammed Sara A, Mohammed Yosra E. (2014). Skin Dose Measurements from Conventional X-Ray Equipments in Sudan, Journal of Biomedical Imaging Processing, Vol 1 (Iss 3), p. 57-67, Copyright © Bowen Publishing Company LTD, USA.
19. **Hamza Alnazier**, Farah Esraa, Salman Esraa, Hassan Rowa, Garma Fatehia B., (2014). Design of An Infrared Physiotherapy Monitor, Journal of Physical Therapy and Health Promotion, Vol. 2 (Issue. 1/ March), p. 24-28, Copyright© Bowen Publishing, New York, USA.
20. **Hamza Alnazier O**, Garma Fatehia B, Eisa Badria I, Almahdi Osman A, Awadalla Ahmed M, Dafaallah Aya S, (2014). Application of Solar Energy in Medical Instrumentation: Microscope, Journal of Clinical Engineering, Vol. 39 (Issue 3/ July/September), p. 132-135, Copyright © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.
21. **Hamza Alnazier O**, Ahmed Hiba K, Khider Mohamed O, (2015). A New Noninvasive Flatfoot Detector, Journal of Clinical Engineering. Vol. 40 (Issue 1/ January/March), p. 57-63, Copyright © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.

22. **Hamza O.M Alnazier**, Ahmed B.E.Elmotaz and Khider O Mohamed., (2015). Designing drugs availability information contact centre. *Int. J. Medical Engineering and Informatics*, Vol. 7, (No. 3), 2015. P. 250-268, Copyright © Inderscience Enterprises Ltd. UK, www.inderscience.com.
23. Abu Khia A A, **Hamza A O** and Abbas N A., (2016). Dose Reference Levels in Radiography for the Most Common Examinations in Sudan, *Sudan JMS* Vol. 11, (No.1), p. 7-16, © Sudan JMS Vol. 11, No.1. Mar 2016, Sudan.
24. Mostafa, Sojoud H, **Hamza Alnazier O.**, Khider Mohamed O., (2016) Chemical Analysis of Water Treatment in Sudan, *Journal of Clinical Engineering*, Vol. 41 (Issue 4/ October/December), p. 181–185, Copyright © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.
25. Sara Hassan Ali Elhaj, Mohamed Omer Khider, **Alnazier Osman Hamza** and Naif Ahmed Al Motiri., (2017) Designing an Automatic Subglottic Suction for Prevention of Ventilator-Associated Pneumonia, *Journal of Clinical Engineering*, Vol. 42 (Issue 2/ April/June), p. 73–97, Copyright © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.
26. Kawther M. Toum, MSc, Zeinab A. Mustafa, PhD, Banazier A. Ibraheem, PhD, and **Alnazier O. Hamza**, PhD., (2017) Brain Tumor Segmentation From Magnetic Resonance Imaging Scans, *Journal of Clinical Engineering*, Vol. 42 Issue 3/ July/September), p. 115-120, Copyright © 2018 Wolters Kluwer Health, Inc. All rights reserved., USA.
27. Rahman Mohammed Ali Geili and **Alnazier Osman** Mohammed Hamza., (2018) LITERATURE SURVEY ON 3D BRAIN TUMOR SEGMENTATION IN MRI IMAGES, *International Journal of Current Research in Life Sciences*, Vol. 07 (No. 08), p.2558-2566, August, 2018, ISSN: 2319-9490, Available online at <http://www.ijcrls.com>.
28. Arwa Ahmed, MSc and **Alnazeer Osman**, PhD., (2018) Optic Disc Segmentation Using Manual Thresholding Technique, *Journal of Clinical Engineering*, Volume 44 & Number 1 & January/March 2019, P. 28-34, Copyright © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.
29. Arwa A. Gasm Elseid and Alnazier O. Hamza, (2018) Glaucoma Detection Based On Shape Features and SMOTE Algorithm, *CiiT International Journal of Digital Image Processing*, Vol 10, (No 10), October - November 2018, Published by the Coimbatore Institute of Information Technology.
30. Arwa Ahmed Gasm Elseid, Mohamed Eltahir Elmanaa, **Alnazier Osman Hamza**, (2018). Evaluation of Spatial Filtering Techniques in Retinal Fundus Images, *American Journal of Artificial Intelligence*. Vol. 2, (No. 2), p. 16-21. USA.
31. Ashgan M. Omer, Frederique Frouin, **Alnazier Osman**, (2019). The breast tissue density classification based on haralick and SFTA features extraction methods, *international journal of computer sciences engineering (IJCSE)*. Vol. 8 (No. 5), p. 13-22.
32. Arwa A. Gasm Elseid, PhD and **Alnazier O. Hamza**, Prof., (2019). Glaucoma Detection Using Retinal Nerve Fiber Layer Texture Features, *Journal of Clinical Engineering*, Volume 44 & Number 4 & October/December 2019, P. 180-185, Copyright © Wolters Kluwer Health | Lippincott Williams & Wilkins, USA.
33. Rania Elmahdi, MSc, Nosaiba Yusuf Amed, BSc, Magdy Baker M. Amin, PhD, **Alnazier O. Hamza**, PhD, Sanaa Ali Babaker, BSc, and Walaa Abd Alrahman Elgylani, BSc, (2019). Comparative Study Between Daubechies and Coiflets

Wavelet Decomposition Mother Families in Feature Extraction of BCI Based on Multiclass Motor Imagery Discrimination, Journal of Clinical Engineering, Volume 44 & Number 1 & January/March 2019, P. 41-46, Copyright © Wolters Kluwer Health Lippincott Williams & Wilkins, USA

34. Rania Elsadig Elmahdi, MSc, Nosaiba Yusuf Ahmed, BSc, Magdy Baker M. Amin, PhD, and **Alazier O. Hamza**, PhD., (2020). A Review of Using Common Spatial Pattern in Discrimination of Multiclass Motor Imagery-Based Brain-Computer Interface, Journal of Clinical Engineering, Volume 45 & Number 1 & January/March 2020, P. 45-50, Copyright © Wolters Kluwer Health Lippincott Williams & Wilkins, USA

14. SEMINARS, CONFERENCES AND SYMPOSIA

A. ATTENDED WORKSHOPS

- ❖ Participating in a workshop entitled (basic of Quality Assurance System ABET, held in Amman, the Hashemite Kingdom of Jordan during the period of 12-14/03/2017).
- ❖ International **Conference** on Radiation Medicine (ICRM) organized by (KFSH&RC) Feb.2014.
- ❖ International Forum for innovators in University teaching (IFIUT) **Conference** Imam Mohamed Bin Saud University, February, 2013.
- ❖ Curriculum Development Course Hands – on Training **Workshop**, College of education, SUST, April 2012.
- ❖ Outcome Based Education **Workshop**, College of education, SUST, April 2012.
- ❖ Research in health institutions higher education **Workshop**, Sudan, (2012).
- ❖ Arab Universities Union Workshop, Dubai, (2008).
- ❖ First scientific **Conference** for camels researches, SUST, Sudan, (2007).
- ❖ Sudanese higher education conference, (2000).
- ❖ Teaching development course & **Workshop**, SUST, College of education June 1996.
- ❖ **Workshop** on updating medical equipments in Sudan, Central medical supplies public corporation, January 2011.
- ❖ Second hands medical and laboratories equipments **Workshop**, Sudanese Standard and metrology organization, November 2009.
- ❖ Jordanian and Italian **Conference** in orthopedics, Amman Jordan, June 2009.
- ❖ Medical physicist professional training development **Workshop**, national council for health professions and international atomic agency, Khartoum, Sudan, October 2014.
- ❖ **Conference** of medical research horizon in Sudan, Academy of Medical Sciences and Technology (2005).

B. CONFERENCE PRESENTATIONS

- ❖ **A.O.M.Hamza**, The Design And Fabrication Of A Full Field Quantitative Mammographic Phantom, IEEE, CIBEC'08 Proceedings, 2008. http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?isnumber=4786031&arnumber=4786058&count=89&index=26
- ❖ S. A. Abayazeed, M. A. Alamin, **A. O. Hamza**, B. Tawfik, Benchmarking Clinical Engineering Services in Sudanese Hospitals: Survey and Assessment, IEEE, CIBEC'08 Proceedings, 2008. http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=4786107
- ❖ S. A. Abayazeed, M. A. Alamin, **A. O. Hamza**, B. Tawfik, Benchmarking Clinical Engineering Services in Sudanese Hospitals: Gap – bridging Solutions, IEEE, CIBEC'08 Proceedings, 2008. <http://ieeexplore.ieee.org/search/freeresult.jsp?history=yes&queryText=%28abayazeed%29>
- ❖ M.D. El-Sanosi, A.K. Habbani, N.A. Mustafa, **A.O. Hamza**, Computer-Aided Detection of Benign Tumors of the Female Breast, IEEE, CIBEC'08 Proceedings, 2008. http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=4786082
- ❖ **Hamza, A. O. M.**, Spyrou, N. M., Amaee, W. B. Modelling the effects of stomach Secretions in gastric emptying rates, First conference of Medical Physics in Alzargaa Ahlia University, Jordan, April 2000.
- ❖ **Hamza, A. O. M.**, Alport, M. J., Rae, W. I. D. June 2003. Quality control of mammographic images: automated detection of masses in phantom images, The 43rd congress of SA Association of Physicists in Medicine and Biology, iThemba LABS, Cape Town, South Africa, Poster # 4, p. 19.
- ❖ **Hamza, A. O. M.**, Alport, M. J., Rae, W. I. D. August 2003. Quality control of mammographic images: automated detection of masses and micro-calcifications in phantom images, The 1st Science Faculty Post Graduate Research day, University of Natal, Durban, South Africa, Hosted by The Science Student's Council, Poster # 6, p. 13.
- ❖ **Hamza, A. O. M.**, Alport, M. J., Rae, W. I. D. August 2004. An evaluation of automatic QC algorithms used with a new phantom for digital mammography, The 2nd Science Faculty Post Graduate Research day, University of KwaZulu-Natal, Durban, South Africa, Hosted by The Science Faculty Research Committee and Science Student's Council, Poster # 19, p. 38.
- ❖ **Hamza, A. O. M.**, Alport, M. J., Rae, W. I. D. September 2004. Quality control of mammographic images: automated analysis of collimation test images, The 44rd congress of SA Association of Physicists in Medicine and Biology, Johannesburg Hospital, Johannesburg, South Africa, Poster # 10, p. 30.
- ❖ **Hamza, A. O. M.**, Alport, M. J., Rae, W. I. D. September 2004. New improved quality control phantom for digital mammography, The 44rd congress of SA Association of Physicists in Medicine and Biology, Johannesburg Hospital, Johannesburg, South Africa, Paper # S3.3, p. 48.

C. PRESENTATIONS

- ❖ **Presentation** (The importance of medical equipment quality control) in the medical equipment's Khartoum international Fair 2007.
- ❖ **Presentation** (The role of medical equipment quality control in health care improvement) in the medical physics week 2007.
- ❖ **Presentation** “the Medical errors”, in the engineer's week 2010.
- ❖ **Presentation** “the role of Biomedical Engineer in health care” in the engineer's week 2012.

15. REFERENCES

- ❖ Dr. Esam Eldeen Mohammed Toom Babiker, King Suood University,
- ❖ Professor **M A Alport**, University of Kwa-Zulu Natal, Durban, South Africa. (PhD Supervisor), mike.alport@gmail.com, alport@ait-sa.com.
- ❖ Dr. **W I D Rae**, Addington Hospital, Durban, South Africa (PhD Supervisor), RaeWID@ufs.ac.za, williamrae@ialch.co.za, raew@dohho.kzntl.gov.za.
- ❖ Professor **Ali Abed Alrahman Ali Alhag** College of Medical Radiologic, 00249912303169.
- ❖ Professor **Saad Daoud Suileman**, X-Head Department of Biomedical Engineering, Sudan University of Sciences and Technology. saaddaoud2003@yahoo.com.

16. SPECIALIZED TRAINING CERTIFICATES

- ❖ Radiation Protection and Safety Course -Ministry of Energy Amman–April (2000).
- ❖ Diagnostic X-ray Quality Control and Safety Advanced Course (National Atomic Energy Commission, Khartoum, Sudan March (2001).

17. SKILLS

- ❖ Extensive knowledge and experience in medical imaging (Teaching and clinical)
- ❖ Ability to work in a team environment, communicate effectively with adaptability, creativity, and willingness to collaborate and provide constructive feedback.
- ❖ Ability to work independently and manage multiple tasks to meet deadlines.
- ❖ Proficient computer skills with excellent communication, presentation, critical.
- ❖ Thinking and problem solving skills.
- ❖ Languages (English Language/Native Arabic Speaker).

18. PRIZES

- ❖ **Best Poster Prize**, at the 44rd congress of SA Association of Physicists in Medicine and Biology, Johannesburg Hospital, Johannesburg, South Africa.
- ❖ **Greatest Student** 1995, College of Medical Radiologic Sciences.
- ❖ Developing an Integrated Assessment System for Clinical Engineering Department (2009)
- ❖ Design Biological Phantom for Human Breast (2012)
- ❖ **Second Place Runner-Up of the Popular Blue Nile TV Program, 'Mashrouy'** (My project). Winner Maha Abdul Hadi, Name of the Project: Auto Diagnosis of Breast Cancer, Supervisor: **Dr Alnazeir Osman Hamza 2016.**

19. PATENTS

1. **PATENT** Basheer Shema Ismail, Osman Dalia Abed Alilah, Osman Ahemed Mohammed, **Hamza Alnazier Osman Mohammed (Supervisor)**, (2013). Testing an alternative power to operate medical equipments, College of Engineering/Biomedical Dep. University of Sciences and Technology, Patent No: 3193, Republic Of Sudan, Judgment Ministry.
2. **PATENT** Sara Osman Ali, Samah Salih Ahmed, Barah Abed Alah Ahmed, **Alnazier Osman Hamza**, (2015). Design A quality Control Kidney Phantom for Ultrasound, College of Engineering/Biomedical Dep. Sudan University of Sciences and Technology, Patent No: 3486, Republic Of Sudan, Judgment Ministry.
3. **PATENT** Ahmed Yousif, Abed Alhfeez Mohammed, Abed Alrheem Jamal, Alteb Abed Alhfeez, Omer Abed Algader, Husham Hasan, Mohammed Esam Mohammed, **Alnazier Osman Hamza (Supervisor)**, College of Engineering/Biomedical Dep. Sudan University of Sciences and Technology, Design A quality Control Tools (step wedge), Patent No: 3378, Republic Of Sudan, Judgment Ministry.
4. **PATENT** Ahmed Yousif, Abed Alhfeez Mohammed, Abed Alrheem Jamal, Alteb Abed Alhfeez, Omer Abed Algader, Husham Hasan, Mohammed Esam Mohammed, **Alnazier Osman Hamza (Supervisor)**, College of

Engineering/Biomedical Dep. . Sudan University of Sciences and Technology,
Design A quality Control Tools (beam alignment), Patent No: 3377, Republic
Of Sudan, Judgment Ministry.

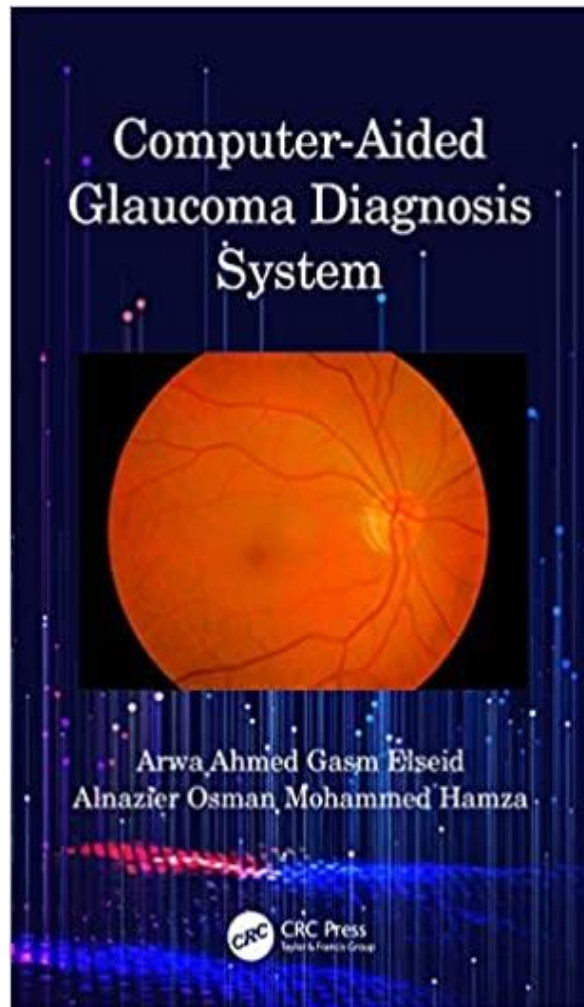
5. **PATENT** Ahmed Yousif, Abed Alhfeez Mohammed, Abed Alrheem Jamal,
Alteb Abed Alhfeez, Omer Abed Algader, Husham Hasan, Mohammed Esam
Mohammed, **Alnazier Osman Hamza (Supervisor)**, College of
Engineering/Biomedical Dep. Sudan University of Sciences and Technology,
Design A quality Control Tools (beam alignment ruler), Patent No: 3376,
Republic Of Sudan, Judgment Ministry.

20. PUBLISHED BOOKS

1. **Hamza A O**, Alport M J, Rae W I D, (2009). Digital Toolkit for Digital
Mammography Quality Control, LAP LAMBERT Academic Publishing AG &
Co. KG. (ISBN 978-3-8383-2243-8, (November). WWW. Amazon.com.
<https://www.lap-publishing.com/extern/listprojects>.
(<https://www.morebooks.de/store/gb/book/digital-toolkit-for-digital-mammography-quality-control/isbn/978-3-8383-2243-8>)



2. Arwa Ahmed Gasm Elseid, **Alnazier** Osman Mohammed Hamza, (2020). Computer-Aided Glaucoma Diagnosis System, Publisher CRC Press, UK, ISBN-10: 0367406268, ISBN-13: 978-0367406264, <https://www.amazon.ae/-/ar/Arwa-Ahmed-Gasm-Elseid/dp/0367406268>



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3. Badria Ibrahim Eisa Idris, Ahmed Mohamed, Ayah Salah, Osman Abdurrahman, Fatehia Germa and **Alnazier Osman**, (2021). Application of Solar Energy in Medical Instruments (Microscope), <https://www.intechopen.com/online-first/application-of-solar-energy-in-medical-instrument-microscope>, Published June 2nd 2021, DOI:10.5772/intechopen.97177

