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DATE OF BIRTH: 30.11.1972

PLACE OF BIRTH: Kosti . White Nile State.

MARITAL STATUS: Married

OCCUPATION:

Deputy Dean, College of Engineering, SUST (August 2022 -To-date)

Head of Training and Self-Assessment Department –
College of Engineering .(2021-2022)

Assistant prof. Sudan University of Science & Technology. College of Engineering, Department of Biomedical Engineering

QUALIFICATION:

Ph.D. in Biomedical Engineering

Xi'an Jiaotong University, School of Life Science & Technology
Biomedical Engineering Research Institute, January 2012.

M.Sc in Medical Radiation physics

SUDANUNIVERSITY OF SCIENCE & TECHNOLOGY
COLLEGE of Graduate Studies. October 2005.

B.Sc. (HONOUR) in Radiologic Instrumentation Technology.

SUDANUNIVERSITY of SCIENCE & TECHNOLOGY
COLLEGE of MEDICAL RADIOLOGIC SCIENCES.
FIRST CLASS -APRIL 1997.

Publications:

1. Badria Ibrahim Eisa Idris and Mohammed Yagoub Esmail , **Design a Mobile Application for Maintenance of Hemodialysis Machines using Flutter Framework**, 5th ICEHTMC Congress on Clinical Engineering & Health Technology Management, Visakhapatnam, India , November 2023.

2. Nourelhuda Ali Yousif Mohamedand Mohammed Yaqoob Esmail **Designing a Tele-pediatric System based on the internet**, Open Journal of Pediatrics and Child Health, April 2022, pp 009-018, <https://orcid.org/0000-0002-5347-0394>

3. Arwa Alaaeldin. Elamin, Mohammed Yagoub Esmail, **Wavelet-Based ECG Signal Analysis for Human Recognition**, 2020 International Conference on Computer, Control, Electrical, and Electronics Engineering (ICCCEEE20)
4. Mohammed Yagoub Esmail, Doaa Hayder Ahmed, Megdi Eltayeb, **Classification System for Heart Sounds Based on Random Forests**, Journal of Clinical Engineering. 44(2):53, April/June 2019., DOI: 10.1097/JCE.0000000000000335
5. *Nafisa Bahaeldin Abdelrhman ; Mohammed Yagoub Esmail , Megdi Eltayeb ,” Design Of Guide Cane For Blind People By Using Microcontroller International Journal on Recent Researches in Science, Engineering & Technology (IJRRSET), Volume 7, Issue Pages : 8 – 13, 5 May 2019. Available online at: www.jrrset.com*
6. Abdelhalim Nasser , Mohammed.Y.Esmail,**Interactive DICOM image exploration software** ISERD – 497th International Conference on Science and Innovative Engineering (ICSIE) Kuala Lumpur ,Malaysia 1st-2nd December 2018 , Paper ID: ISD-SIEKL-01128-9196.
7. M. Y. Esmail and M. A. Alzain, "**Mobile based Tele-medicine Diabetic Retinopathy Screening**," 2018 International Conference on Computer, Control, Electrical, and Electronics Engineering (ICCCEEE), Khartoum, 2018,pp,1-6.doi: 10.1109/ICCCEEE.2018.8515840.
8. M. Y. Esmail and Y. S. H. Osman, "**Computerized Central Blood Bank Management System (CCBBMS)**," 2018 International Conference on Computer, Control, Electrical, and Electronics Engineering (ICCCEEE), Khartoum, 2018, pp. 1-5. doi: 10.1109/ICCCEEE.2018.8515789.
9. *H. E. M. Abdalla and M. Y. Esmail, "Brain Tumor Detection by using Artificial Neural Network," 2018 International Conference on Computer, Control, Electrical, and Electronics Engineering (ICCCEEE), Khartoum, 2018, pp. 1-6. doi: 10.1109/ICCCEEE.2018.8515763.*
10. Mohammed Y.Esmail, Lijun Sun, Liyin Yu, Hao Xu, Liang Shi, Jianbao Zhang. **Effects of PEMF and Glucocorticoids on Proliferation and Differentiation of Osteoblasts**,[Electromagnetic Biology and Medicine](#), Volume 31, Number 4, December 2012 , pp. 375-381(7) , Informa Healthcare USA, Inc

PEER-REVIEWING EXPERIENCE

Reviewer for the Sudanese Biomedical Engineering Society Award 2016

Reviewer for the ICCCEEE17 Conference

Reviewer for the ICCCEEE18 Conference

Reviewer for the ICCCEEE19 Conference

TEACHING EXPERIENCE:

1. Sudan University of Science and Technology

Biomedical Engineering, Sudan University of Science and Technology
College of Engineering, Department of Biomedical Engineering (2000 – current).

Assistant prof. Department of Biomedical Engineering 2012-to date)

Lecturer (2005-2011)

Teaching Assistant (2000-2005).

2. Future University (Partial contract)

Graduation Project coordinator. (2015-2019)

Department of Biomedical Engineering, College of Engineering, **Future University**. (2013 – 2019).

3. University of Medical Science and Technology (UMST) (Partial contract)

- Subject: **Advanced Physiology Engineering** (Postgraduate studies, Biomedical Engineering programme, UMST, (2014 – 2019).

- (Postgraduate Programme,(**MRI imaging System**) Department of Radiology , UMST, 2015 – 2016).

- Lecturer: **Medical Imaging and Measurement** (Undergraduate, Department of Biomedical Engineering, UMST, 2005 – 2007).

- Lecturer: **Quality controls for Radiology Imaging** (Undergraduate, Department of Radiology, UMST, 2013 – 2014).

4. University of Science and Technology, Omdurman (Partial contract)

- Lecturer: **Research Methodology** (Undergraduate, Department of Biomedical Engineering, University of Science and Technology, Omdurman (2014 – 2016).

- Lecturer: **Quality Assurance and Quality Control** (Undergraduate, Department of Biomedical Engineering, University of Science and Technology, Omdurman (2014 – 2016).

Program Coordinators at the following:

1.College of Technology - Sudan University of Science and Technology:

- **Diploma program coordinator. (2012-2020)**

Undergraduate Diploma program, Department of Biomedical Engineering, College of Technology, Sudan University of Science and Technology.(2012 – 2020).

2.Mashreq University Programme Co-ordinator (Feb 2022- Feb2023)

College of Engineering – Biomedical Engineering

3. Hayatt University college

Programmed Co-Ordinator (2017-2020)

Engineering Programs

Biomedical Engineering programme (2017-2020).

ACADEMIC SUPERVISION:

Master Thesis:

-Classification and Detection of Coronavirus in lung images using Random Forests algorithm ,2021

- Design a Mobile Application for Maintenance of Hemodialysis Machines using Flutter

Framework, 2021

- **Phonetic Recognition using Artificial Natural Networks , 2019.**
- **Malaria detection using ANN , 2019**
- **Implementation and Comparison of different Segmentation techniques for medical Images, 2019**
- **Web-Based medical information system, Hiba Mohamed Abdel Khalig , 2018**
 - **Computerized Central Blood Bank Management System (CCBBMS), Youstra – 2018.**
- **Classification system for heart sounds based on Random Forests, 2018.**
 - **Web-Based Electronic Medical Record Database System Development, 2018.**
- **Medical Imaging compression using Huffman and Arithmetic Algorithms for Telemedicine, 2018.**
- **Segmentation methods for Breast Cancer Detection, 2018.**
- **Design of guide cane for blind people By Using Microcontroller, 2017.**
- **Automatic Segmentation of Liver from CT / MRI Abdominal Image Using Several Techniques, April 2017.**
- **Automated Diabetic Retinopathy Detection By Using Artificial Neural Network**
- **ECG Signal Analysis for Human Recognition (ECG as a Biometric Signature) , 2016.**
- **Brain Tumor Detection using Artificial Neural Networks, 2015.**
- **Epilepsy Signal Analysis and Classification, 2015 .**
- **Heart Rate Variability, 2014.**

B.Sc Thesis:

- **Design of smart shoes for blind people, 2018.**
- **TELEMEDICINE BASED DIABETIC RETINOPATHY SCREENING, 2018.**
- **Design of an automated pediatrics defibrillator, 2018.**
- **Design of Blood Group Detection System, 2017.**
- **Arabic Sign Language Recognition Using Kinect Camera, October 2017**
- **Design of a Healing Apparatus for Diabetic Foot Ulcer, October 2016.**
- **Heart Sound Analysis Based on DSP, August 2014..**

Training Courses: -

- 1. Basic course in Assets Valuation, College of Engineering -Training and self-assessment department, August 2021-December 2022.**
- 2. Specialized Training Programme in Management on Operation, Repair and Maintenance of Cardiac, Imaging and Nuclear Medicine Equipment. Centre for Development of Advanced Computing (CDAC), Mohali, India, 30 Nov 2015 to 22 Jan 2016.**

Content of the Training Course:

- I. MEDICAL ELECTRONICS: -**
Troubleshooting techniques -
- II. BIO-MEDICAL EQUIPMENT**

This module provides in-depth knowledge of theory, the principle of working, building blocks, Circuit diagrams, technical specifications, repair ,maintenance, and operation of the following machines:

- a. **Electrocardiograph(ECG)**
- b. **Cardiac Monitor**
- c. **Multi-parameter Monitor**
- d. **Cardiac Defibrillator**
- e. **Heart Lung Machine**

III. Modern Imaging Systems

This module provides in-depth knowledge of theory, principle of working , building-blocks, , technical specifications ,repair ,maintenance and operation of following machines:

- a. **Ultrasonic Imaging System**
- b. **X-Ray Machine**
- c. **Digital Radiography**
- d. **X-ray Computed Tomography**
- e. **Magnetic Resonance Imaging System**

IV. Nuclear Medical Imaging system

This module provides in-depth knowledge of theory, principle o f w o r k i n g , b u i l d i n g blocks, technical specifications ,repair ,maintenance and operation of following machines:

- a. **Gamma Camera**
- b. **Positron Emission Tomography (PET Scanner).**

3. National Institute of Computer Technology (NICT), Chandigarh, India. Training Certificates in software and Data Processing

- a. (40 Hrs)in AUTO CAD LEVEL I and LEVEL II, 2016 .
- b. (50 Hrs)in C and C++, 2016.
- c. (Three weeks)in MS ACCESS. 2016

4. Micro Controller applications . Sudanese Turkish Training Centre for Trainee . Khartoum - Sudan, 2013.

5. Tuttlिंगing , Germany , 13th - 16th December 2005 , Technical Training at schmitz u Söhne:

Service and repair of the following product: STX /STS 282 /Arco Partura mobilis 200/300/RC115.7 Series.

6. Tutlinging , Germany , Technical Training Programme on the following product from KLS Martin Group , in the field of :

- 1) Electro–Surgical Units:ME 200 / 400 , MEMB1 Endo, MEMB2 : Basic In HF-Surgery, HF Measurement Technique, Schamatic, Troubleshooting and Pre-maintaenance.
- 2) Operating Light installation and Maintainanace [ML 501 , ML 701]
- 3) Pendant.

7. Rashtat, Germany, Maquet Company , Technical Training on

-Central Medical Gas System.

8. TIWAN – Tipe , K&H MFG. CO. LTD. Manufactureer Exporter & Importer –October 2005

Diploma in Educational Equipment and Maintainance Lab.course on the following Module :

- 1.Biomedical Measurement System.[KL-700]
- 2.Computer Interface System [CIC – 800].
- 3.Microcomputer Sensing Control System [KL-600 , KL 620]
- 4.Microcomputer system [MTS-80A , MTS- 86C]
- 5.Programmable Logic Devices (CPLD&FPGA) [CIC- 310 ,CI -33001]
- 6.System on Chip(SoC) Design [CIC- 900], [CIC- 910]
- 7.Programmable Logic controller (PLCs) [plc- 100]
8. Mechatronics System [MS-1000]
9. Digital Signal Processing System [CIC- 500]
10. Digital System Simulation Software (labview) [LV-100 ,ETS-8000]
- 11.Comunication System (Basic Comunication) [KL- 900A],Analog Comunication [KL-900B] ,AM/FM Transmitter&Receiver[KL- 900C],FiberOptic Transmission[KL-900D]
12. Internet TCP/IP ProtocolTraining system [ITS- 101]
13. Lon Work Control NetWork SYSTEM[CIC- 700]

9. Sudan Atomic Energy Commission (SAEC) In Co-operation with International Atomic Energy Agency (IAEA)

NATIONAL TRAINING COURSE ON MAINTENANCE AND QUALITY CONTROL OF CONVENTIONAL X-RAY MACHINES.KHARTOUM - SUDAN
3rd – 14th September 2005.

10. Sudan Atomic Energy Commission (SAEC) In Co-operation with International Atomic Energy Agency (IAEA).

NATIONAL TRAINING COURSE ON MAINTENANCE AND QUALITY

CONTROL OF **CT-SCAN SYSTEMS**

KHARTOUM - SUDAN 1ST – 13TH April 2005.

11. International Center for Theoretical Physics (ICTP).

Miramare , trieste , Italy.

- College on Medical Physics .2004

12. Sudan Institute for National Science Collaboration with Faculty of Science & Technology Al-Nilain University.

- *LASER PHYSICS and APPLICATIONS.*

13. Itgan quality consultant & training, Khartoum , sudan
1-Qualification of Quality Management Supervisor

- Principle of quality.
- Planning.
- Documentation.
- Internal Auditor.

2- Principles of Quality at university and higher institute

14. FACULTY OF EXTRA MURAL STUDIES :

Princile of Measurement and Education.

15. Republic of Sudan , MINISTRY OF HEALTH:

LABORATORY GENERAL MANAGEMENT & BLOOD TRANSMISSION SERVICES

Preventive Maintainance of Medical Lab Equipment.

16. ALZaeim ALAZhari Univesity ,Sudan collabiration with Middle East Branch of Jefferson Ultrasound Research and Educational Institute ,Department of Radiology ,Thomas Jefferson University Hospital ,Philadephia ,USA

† Advances In Ultrasound

17. KAFCO MEDICAL Ltd, Khartoum -Sudan : MEDICAL EQUIPMENT

- OPERATION.
- CALIBRATION.
- MAINTAINANCE.

18. Sudan Atomic Energy Commission (SAEC) Khartoum National Training Course on Diagnostic X-ray.(2000)

X-RAY INSTRUMENTATION

X-RAY QUALITY CONTROL

RADIATION PROTECTION.

Work shop :

1. *Workshop (ICCCEEE20)*, Biomedical Engineering Workshop. UMST ,Khartoum – Sudan. Feb 2021.
2. Medical Applications of Synchrotron Radiation (MASR 2004) , Miramare , Trieste ,Italy .

WORK EXPERIENCE:-

- 1. Participate in Operation and Calibration of DIREX NOVACOMPACT SYSTEM (Shock Wave Lithotripter) at Omdurman Chinese Friendship Hospital - 2000.**
- 2. Installation and Operation the following items at Omdurman Teaching Hospital (CCU) 2001:**
 - Central Station ECG monitors.
 - Bed Side Monitor Wall Mounted .
 - Telemetry ECG Monitor with Central Station.
 - Ultra-Sound Doppler . Ventilators .
- 3. Servicing Engineer in KAFCO MEDICAL Company 1999-2000.**
- 4. Servicing engineer in MEC (Medical Engineering Company) from 1998 to June 1999.**
- 5. Technical Engineer in the Department of Physics and Instrumentation from June 1997 to October 1998 at Radiation & Isotopes Centre Khartoum (RICK)**