

# ZAINAB YUNUSA

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## PROFESSIONAL SUMMARY

An academic and a researcher with more than 13 years working experience in one of the biggest universities in Nigeria and the Kingdom of Saudi Arabia. A registered female engineer with Council for the regulation of engineering in Nigeria (COREN) and the Nigerian Society of Engineers (NSE). Passionate about solving real world problems using engineering solutions. A role model and a mentor to many girls in the field of STEM.

## WORK HISTORY

### Assistant Professor @ University of Hafr Al Batin March 2021 to date

**Bayero University Kano** - Kano, Nigeria

Research collaborator with researchers in Universiti Putra Malaysia after sealing a Memorandum of Understanding with Bayero University Kano. Also research collaborator with Focus Nanotechnology Africa incorporation (FONAI) to carry out research on nanosensor for covid 19 pandemic.

### Visiting Lecturer

02/2020 to 03/2021

**Usman DanFodio University, Sokoto** - Sokoto, Nigeria

Taught Level 100 undergraduate students Engineering Mathematics in the Faculty of Engineering

### Senior Lecturer 10/2019 to Current Bayero University Kano - Kano, Nigeria and currently on leave of absence

Responsibilities include teaching, research, management and administration at undergraduate and postgraduate level in the university

### Lecturer I

10/2016 to 09/2019

**Bayero University Kano** - Kano, Nigeria

Teaching and research at undergraduate and postgraduate level

### Assistant lecturer

10/2013 to 09/2016

**Bayero University Kano** - Kano, Nigeria

Teaching at undergraduate level

### Lecturer II

10/2010 to 09/2013

**Bayero University Kano** - Kano, Nigeria

Assisting in teaching some courses to undergraduate students

### Departmental Examination Officer

12/2010 to 09/2011

Management and processing of students results

### Graduate assistant

07/2007 to 09/2010

**Bayero University Kano** - Kano, Nigeria

Assisting Professors in tutorials and marking of students tests

### Assistant Departmental Examination Officer

01/2009 to 01/2010

Assisting the examination officer towards results processing and compilation

### Lecturer

01/2005 to 01/2007

**School of Technology, Kano State Polytechnic** - Kano, Nigeria

taught diploma I and II diploma students electronics engineering

### Researcher

09/2011 to Current

**Bayero University Kano** - Kano, Nigeria

Research in the area of R.F communications, electronic materials and applications in the area of nanotechnology

**Project Supervisor**

03/2009 to Current

**Bayero University Kano** - Kano, Nigeria

I have successfully supervised 20 undergraduate projects and 4 completed masters project with 7 ongoing.

I have examined 5 Masters projects internally

I have examined 3 Masters theses externally at Nigerian Defense Academy Kaduna

I have participated in electrical services design for residential buildings in Kano Metropolitan

**Level Coordinator** 07/2007 to 03/2021 **Bayero University Kano** - Kano, Nigeria

Management of student registration forms, courses and processing of students registration.

**Taught courses**

**University of Hafr Al Batin, Saudi Arabia**

Electrical Circuits I and II 2021/2022

**Bayero University Kano** - Kano, Nigeria

Electronics materials Technology 2020/2021

Electricity and magnetism 2015/2016

Computer engineering I 2015/2016 to 2020/2021

Computer engineering II 2016/2017 to 2021/2020

Computer engineering III 2015/2016 to 2021/2022

Circuit theory 2015/2016 to 2020/2021

Sensor technology engineering 2015/2016 to 2019/2020

Data Communication and networking 2012/2013

Engineering mathematics 2007/2008

**Journal, Conference and Book chapter Publications**

01/2007 to Current

**BAYERO UNIVERSITY KANO** - Kano, Nigeria

**JOURNAL ARTICLES**

1. **Zainab Yunusa** and Ado Dan-Isa "Fuzzy Control of an Induction Motor Compared with PI control", The Journal of Computer Science Applications, Vol.17 No.2, December, 2010

2. **Zainab Yunusa**, Ado Dan-Isa, Yunusa Ali Sa'id and Reza Shoorangiz "Effects of the Number of Rules on the Quality of Fuzzy Logic Controller", International Journal of Applied Electronics and Robotics, Vol.1 July 2013

3. **Z. Yunusa**, M. N. Hamidon, and A. Kaiser, "Gas Sensors : A Review," Sensors and Transducers vol. 168, no. 4, pp. 61–75, 2014 (Scopus indexed)

4. **Z. Yunusa**, M.N Hamidon, Alyani Isma'il, Maryam Mohd Isa, Mohd Hanif Yaacob, Siti Azlida Ibrahim and Saeed Rahmanian " Development of Double Surface Acoustic Wave Resonator Sensor for hydrogen detection at room temperature" Sensors Mdpi February 15(3), 4749-4765; doi:10.3390/s150304749 2015 (Scopus indexed)

5. **Z. Yunusa**, M.N Hamidon, Suraya Abdul Rashid, Ismayadi Isma'il and Saeed Rahmanian "Synthesis of Y-tip Graphitic Nanoribbons from Alcohol Catalytic Chemical Vapor Deposition on Piezoelectric Substrate" Journal of Nanomaterials April 2015 (Scopus indexed)

6. A. A. Shabaneh, S. H. Girei, P. T. Arasu, S. A. Rashid, **Z. Yunusa**, M. a. Mahdi, S. Paiman, M. Z. Ahmad, and M. H. Yaacob, "Reflectance Response of Optical Fiber Coated With Carbon Nanotubes for Aqueous Ethanol Sensing," *IEEE Photonics J.*, vol. 6, no. 6, pp. 1–10, Dec. 2014 (Scopus indexed)

7. N.Kure, MN Hamidon, S Azhari, NS Mamat, HM Yusoff, BM Isa, **Z Yunusa** "Simple microwave-assisted synthesis of carbon nanotube using polyethylene as carbon precursor," Journal of Nanomaterials 2017
8. **Z.Yunusa**, M.N Hamidon, S.A Rashid and I.Ismail " Potential Application of Y-tip Graphene Nanoribbons to Gas Sensing" International Journal Of Scientific and Engineering Research Volume 9, Issue 5, May 2018
9. Y.R Magaji, L.M Bello and **Zainab Yunusa**, "Improved Design of Compact Dual band Microstrip Patch Antenna for Wi-fi and WIMAX Applications" International Journal of Information Processing and Communications Vol.6 No.2 December 2018, pp 372-381
10. Abubakar Yakubu, Zulkifly Abbas, **Zainab Yunusa** "Easy determination of Radiation Absorption in brain tissue from mobile phones using Finite Element Method" Open Journal of biophysics, 2019,9, 147-154
11. AA Shehu, Z Yunusa and MN Hamidon, "Graphene based microstrip patch antenna for X-band application" Journal of Innovative Science and Engineering (JISE) 3 (2), 57-65, 2019
12. AA Gabari, Z.Yunusa, MN Hamidon " Octagonal Microstrip patch antenna array with gain enhancement for WiMAX and WLAN applications" Journal of Innovative Science and Engineering (JISE) 3 (2), 73-85, 2019
13. I Ismail, MS Mamat, NL Adnan, **Z.Yunusa**, IH Hasan, "Novel 3 Dimensional Cotton-Like Graphenated- Carbon Nanotubes synthesized via floating catalyst chemical vapour deposition method for potential gas sensing applications" Journal of Nanomaterials 2019
14. Abubakar Yakubu, Zulkifly Abbas, **Zainab Yunusa** "Easy determination of Radiation Absorption in brain tissue from mobile phones using Finite Element Method" Open Journal of biophysics, 2019,9, 147-154
15. A.A. Ahmad, M. Ajiya, L.M. Bello, and **Z.Y Yusuf**. *Comparison of Various Instantaneous Power Methods for The Estimation of Time-Parameters of Poly Phase Coded Radar Signal* – – 2019 2nd International Conference of the IEEE Nigeria Computer Chapter (IEEEngComputConf'19). 14th – 17th October 2019.
16. A.A. Ahmad, M. Ajiya, **Z.Y Yusuf** and A.E. Airoboman. *On The Identification of Low Probability of Intercept Radar Signals using Time-Frequency Signal Analysis and Processing* – Journal of Electrical and Electronics Engineering (JEEE) – vol 12, no2, pp 5 – 10. October 2019
17. A. A. Ahmad, A. Muhammad Lawan, M. Ajiya and **Z. Y. Yusuf**. *Sorting of Low Probability of Intercept Radar Signals Based on Frequency Modulation Constancy using Wigner-Ville Distribution* – 2019 IEEE Asia-Pacific Conference on Applied Electromagnetics (2019 APACE). 25th – 27th November 2019
18. A. A. Ahmad, S. Lawan, M. Ajiya, **Z. Y. Yusuf** and L.M. Bello. Extraction of the Pulse Width and Pulse Repetition Period of Linear FM Radar Signal using Time-Frequency Analysis - Journal of Advances in Science and Engineering (JASE) - vol 3, no1, pp 1 - 8. May 2020
19. A. A. Ahmad, M. Ajiya, **Z. Y. Yusuf** and H. Hussaini. Classification of Airborne Radar Signals based on Time-Frequency Features using Wigner-Ville Distribution - 2019 IEEE Asia-Pacific Conference on Applied Electromagnetics (2019 APACE). 25th – 27th November 2019

#### **Conference Proceedings**

1. **Z.Yunusa**, M.N Hamidon and Suraya Abdul Rashid "Growth of Multi walled Carbon nanotubes on Platinum" IEEE Regional Symposium 2013 Langkawi Malaysia.
2. **Z.Yunusa** and M.N Hamidon, "Hydrogen Gas Sensor Using Double SAW Resonator System" ICAEES 2016 Malaysia
3. A. Fauthan, **Z. Yunusa**, and M. Nizar, "Synthesis and Characterization of Carbon Nano Structures on Gallium Phosphate," *IEEE-ICSE 2014* pp. 5–8, 2014.
4. S.G Ling, M.N Hamidon and **Z.Yunusa**, "Relation of Parallel Resistance to the Passive Double SAW Resonator," *IEEE RSM 2015* Kuala Terrangganu Malaysia

5. **Z Yunusa**, JA Oladapo, DS Shuaibu, MN Hamidon "E-band slotted microstrip patch antenna array for 5G broadband applications" 2nd International Conference on Telematics and Future Generation" IEEE 2018 pp 121-124
6. Aminu Atiku, **Zainab Yunusa** and Mohd Nizar Hamidon, "Graphene based antenna using multiple slots for X-band and Ku applications" International Symposium on Advanced Materials and Nanotechnology 2020
7. Jamila Lamido, **Zainab Yunusa** and Mohd Nizar Hamidon, "Development of a thick film gas sensor using Rice Husk Ash Nanoparticles" International Symposium on Advanced Materials and Nanotechnology 2020
8. **Zainab Yunusa**, "Functional Materials for Electronic Devices Applications" Invited paper at ISASE 2021 Turkey.
9. Auwalu Abubakar and **Zainab Yunusa**, "Comparative Analysis of Microstrip Patch Antenna on Different Substrate Material using slit technique for X-band Applications" ISASE 2021
10. Musa Umar, Babani Sulaiman, **Zainab Yunusa** and Abubakar Sani Ali, "Bandwidth Enhancement of Microstrip Patch Antenna using slits for 5G Mobile Communication Networks" International Symposium on Antennas and Propagation (ISAP) 2021
11. **Zainab Yunusa**, 'Synthesis of Graphene Nanoribbons and Its application to Ammonia gas sensing" Invited paper at ICANAS 2021 Turkey.

#### **PATENT**

1. Suraya Abdul Rashid, **Zainab Yunusa**, M.N Hamidon and Ismayadi Isma'il " Graphene nanoribbons and A Process for Preparation Thereof" - P12014703236 Patent filed Universiti Putra Malaysia 2014

#### **BOOK CHAPTER**

1. Nuraddeen Magaji and **Zainab Yunusa**, "*Genetic Algorithm*" Soft Computing and Metaheuristics Volume 1: Introduction
2. M.N Hamidon and Z.Yunusa, "Sensing Materials for SAW Gas Sensors" Chapter Intech Open Science August 2016

#### **JOURNAL REVIEWER**

I have reviewed 10 papers in Sensors and Actuators B Chemical from 2018 to date

## **EDUCATION**

**Doctor of Philosophy:** Sensor Technology Engineering, 08/2015

**Universiti Putra Malaysia - Malaysia**

During my candidature, I got international scholarship. I got CGPA of 4.00 out of 4.00 points in my coursework. I also filed a patent on the synthesis of graphene nanoribbons and preparation thereof. I also published my research findings in high impact journals and conference proceedings.

**MASTER M.Eng:** Electrical Engineering, 2010 **Bayero University Kano-Nigeria**

The title of my project is Development of fuzzy logic controller for the speed control of induction motor using different membership functions.

**BACHELOR B.Eng:** Electrical Engineering, 2003

**Bayero University Kano-Nigeria**

The title of my project is "Design and construction of electronic interval timer using PIC microcontroller"

## **AFFILIATIONS**

MEMBERSHIP OF ASSOCIATIONS Institute of Electrical and Electronics Engineering (IEEE electron devices society) Council for Regulation of Engineering in Nigeria (COREN 22100) Association of Professional Women

Engineers (APWEN Chairperson Kano State Chapter) Nigerian society of Engineers (NSE 25690)

## **MEMBERSHIP OF BOARD, COMMITTEES AND COMMUNITY RESPONSIBILITIES**

Chairman Association of Professional Women Engineers in Nigeria, Kano Branch from 2018 to 2020

Member on Committee on viability on the creation of Nigerian Society of Engineers, Kabuga Branch Kano 2018

Member for COREN accreditation team to Geidam Polytechnic Yobe State 2017

Member for COREN accreditation team to Department of Electrical Engineering Bayero University Kano 2018

Treasurer for Nigerian Society of Engineers Kabuga Branch from 2018 to 2020

Member for Technical Committee Conference Organizing for ACiCon 2015, 2017 and 2019

Member for Technical Committee Conference Organizing APWEN conference 2018 to 2021

## **REFERENCES**

Prof. Mohd Nizar Hamidon

Institute of Advanced Technology

Universiti Putra Malaysia

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Prof. Ado Dan Isa

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