

# INEMESIT FRIDAY UMOH

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## EDUCATION

**University of Ibadan, Ibadan, Nigeria**

**2015 - 2016**

*M.Sc. Physics (Theoretical Physics)*

**University of Calabar, Calabar, Nigeria**

**2007 - 2012**

*B.Sc. Physics*

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## WORK EXPERIENCE

**Paradise International Academy, Calabar, Nigeria.**

**2021-present**

**Teacher**

- Teaching mathematics to grade nine, ten and eleven students.
- Teaching physics to grade ten students.
- Guiding students to carry out practical physics in the physics laboratory.
- Preparing and delivering subject materials.
- Creating and grading subject assessment and exams to ensure students understand material and stay on track.
- Mentors students to help them make informed decisions about their short and long term goals.

**National Social Investment Programme**

**Government Secondary School, Uwanse, Calabar, Nigeria.**

**2018 – 2020**

**Teaching Assistant**

- Taught mathematics to seventh and eighth grade students.
- Taught mathematics to eleventh grade students.
- Prepared and delivered subject material.
- Created and graded subject assessment and exams to ensure students understand material and stay on track.

**National Youth Service Corps (NYSC)**

**2013 - 2014**

**Teaching Fellow**

- Taught high school physics and mathematics to small and large groups.
  - Prepared subjects' materials, practice problems. Graded exams.
  - Guided and supervised college students on teaching practice.
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## RESEARCH EXPERIENCE

**Put together a compendium of software in Physics implemented in Python**

**2019**

**Co-author:** Prof. Godfrey Akpojotor

- Read several papers and provided an overview of each of them, highlighting the problems each software can be applied to, and also their strengths and weaknesses.
- Serves as a reference to students and researchers who are interested in developing algorithms, implementing efficient programs and modifying the software to suit what problem they seek to solve.

**Department of Physics, University of Ibadan, Nigeria.**

**2016**

*MSc Researcher*

**Advisor:** Dr. Emmanuel Oyewande

- Computed the differential cross section of positron-positron scattering in the center-of-mass frame.
- This work comprises an investigation of probability of occurrence of outgoing particles (antimuon-antimuon) in the collision process.
- Plots indicate the occurrence of the outgoing particles at very small angles.

**Department of Physics, University of Calabar, Nigeria.**

**2012**

*Undergraduate Researcher*

- Reviewed the structures and characteristics of blackholes.
- Examined the different sizes of blackholes and death of massive stars as the primary source of the formation of blackholes

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## **CONFERENCE/SEMINAR/WEBINAR ATTENDED**

**International Centre for Theoretical Physics (ICTP) High Energy and Math Online Colloquium**

**November 2020**

**Title:** Hidden Algebraic Structures in Topology and Quantum Field Theory

**Speaker:** Sergei Gukov

**East African Institute for Fundamental Research (EAFIR) Kigali, Rwanda.**

**September 2020**

*Virtual Seminar*

**Title:** Cosmic Tides and Structure Formation

**Speaker:** Aseem Paranjape

**East African Institute for Fundamental Research (EAFIR) Kigali, Rwanda.**

**September 2020**

*Virtual Colloquium*

**Title:** Perspectives in Quantum Field Theory

**Speaker:** Steven Weinberg

**National Centre for Energy Research and Development**

**2019**

**University of Nigeria, Nsukka (UNN).**

*12th International Seminar on Theoretical Physics and National Development*

**Theme:** Training the next generation of Theoretical/Mathematical

Scientists for National Transformation and Advancement.

Foundation Postgraduate courses on:

- Mathematical methods for scientists and engineers.
- Runge-Kutta Numerical Differential Techniques implemented using QPython.

**University of Nigeria, Nsukka (UNN).**

**2014**

*7th International Seminar on Theoretical Physics and National Development*

- Foundation postgraduate course on introduction to computational approaches to science and engineering using python.
- Introduction to tensor calculus and general relativity, strong interaction superconductivity.

**University of Uyo, Nigeria****2014***36th Annual National Conference of Nigerian Institute of Physics (NIP)***Theme:** The Role of Physics in the Nano World.**Centre for Energy Research and Development (CERD),****Obafemi Awolowo University (OAU), Ile-Ife, Nigeria****2011***34<sup>th</sup> Annual National Conference of Nigerian Institute of Physics (NIP)***Theme:** Physics: The Bedrock of Energy Need.

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**LEADERSHIP AND TEAMWORK****Government Secondary School, Uwanse, Calabar, Nigeria.****March 2020***International Day of Mathematics (IDM)***Theme:** Mathematics is everywhere

- Organized and celebrated the international day of mathematics with students of Government Secondary School, Uwanse, Calabar, Cross River State, Nigeria with the following talks:
  - Why do mathematicians always look for X?
  - Help!!! Mathematics is hard
  - Hidden figure: the life and legacy of late NASA mathematician Katherine Johnson
  - Careers in mathematics: what will I use mathematics for?
  - Mathematical modelling session

**Nigerian Institute of Physics (NIP), student's chapter****2011-2012****Zonal President**

- Organized physics laboratory demonstration for 20-25 high school students.
- Organized inter-university debate among physics students.
- Organized and created questions for quiz among students in the department of physics, University of Calabar.

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**VOLUNTEER SERVICE****QWorld****November 2021****Mentor**

- QBronze70: Quantum computing and programming workshop for QNigeria.
  - Helped participants with installation issues with quantum computing library such as Qiskit and Anaconda distribution.
  - Checked assignments and invited participants to canvas learning management system.
  - Answered questions on the contents of the workshop.

**COVID-19 Research Group, Delta State University, Abraka, Nigeria****2020****Field Research Assistant**

- Administered offline and online national surveys, and collated data.

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**SKILLS****Languages:** English (Fluent), French (Beginner)**Computer:** Familiar with Python, Maple, LaTeX, Beamer, JaxoDraw, R, Microsoft Office, Google document, Google Sheet, Google Form, and Good Classroom.

## HONORS/AWARDS

### Certificate of Scholarship

2012

- Nto Annang Foundation Scholarship, Baltimore/Washington DC.  
In honor of outstanding academic achievement and service to the Annang community.

### Academic Scholarship, Rotary Club International, Cross River State, Nigeria.

2011

### Certificate of Achievement

2010

- Zain Africa University Challenge Nigeria National Qualifying Tournament:  
Represented University of Calabar.

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## RELATED COURSES

- Electromagnetic Theory
- Quantum Mechanics
- Classical Mechanics
- Mathematical Methods
- Statistical Mechanics/Thermodynamics

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## RESEARCH ACHIEVEMENTS

### Paper Presentation

Umoh, I., Akpojotor G. (August, 2019). Title: Compendium of Software in Physics Implemented in Python, 12th international seminar on theoretical physics and national development (ISOTPAND), Nsukka, Enugu, Nigeria.

August 2019

### MSc Thesis

The differential cross section of positron-positron scattering in the center-of-mass frame

September 2016

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## SUBMITTED MANUSCRIPTS FOR PUBLICATION

### Journal of the Nigerian Society of Physical Sciences

January 2022

**Title:** Approximate Solutions of the Schrodinger equation with a class of inversely quadratic plus Hulthen potential and its application selected diatomic molecules.

### International Journal of Quantum Chemistry

January 2022

**Title:** Analyzing the effects of magnetic and Aharonov-Bohm flux fields on the energy spectra and thermal properties of  $N_2$ ,  $NO$ ,  $CO$  and  $H_2$  diatomic molecules.

### Physica Scripta

December 2021

**Title:** Influence of magnetic and Aharonov-Bohm (AB) flux fields on the thermo-magnetic properties of Manning-Rosen plus class of Yukawa potential.

### The European Physical Journal D

August 2021

**Title:** Energy states and thermodynamic properties of the Varshni plus inversely quadratic exponential Mie-type potentials

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## PROFESSIONAL DEVELOPMENT TRAINING AND CERTIFICATIONS

### QWorld, Faculty of Computing, University of Latvia, and Unitary Fund.

Sep – Nov 2021

- QCourse511: Graduate course on quantum computing and programming

### QWorld Summer School 2021 (QSilver Diploma).

August 2021

- QSilver online workshop on Quantum Computing and Programming, focusing on complex numbers and Shor's algorithm.

### American Space Calabar, Nigeria.

August 2021

- Workshop training for teachers: Learning beyond the classroom

**QWorld Summer School 2021 (QBronze Diploma)****July 2021**

- QBronze online workshop on Quantum Computing and Programming, focusing on fundamentals of classical and quantum systems, basics of quantum protocols, and Grover's algorithm.

**Microsoft Certified Azure Data Fundamentals****May 2021****African Development Bank Group (AfDB)****November 2020**

- Coding for employment basic skills online training

**Educational Assessment and Research Network in Africa****November 2020**

- Workshop on creating instant citation/bibliography using Reference Managers, Microsoft Word, Digital Object Identifier, Title of Articles.

**The Bridge Leadership Foundation, Calabar, Nigeria****October 2020***Teachers Support Program*

A six weeks virtual training program

- Basic classroom management skills
- Teacher-student relationship
- Teachers' prosperity and posterity
- Leadership and teacher creativity
- Technology appreciation

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**PROFFESIONAL AFFILIATIONS**

Data Science Nigeria (DSN)

**2020-Present**

University of Calabar Alumni Association

**2012-Present**

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