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### Local Organizing Committee

- |                            |   |                                   |
|----------------------------|---|-----------------------------------|
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| 2. Prof. E.O. Adeyefa      | - | Member                            |
| 3. Prof. O. S. Ayanda      | - | Member                            |
| 4. Dr. Mrs. O. G. Olaseeni | - | Member                            |
| 5. Dr. L. B. Adewole       | - | Member                            |
| 6. Dr. M.O. Adeoye         | - | Member                            |
| 7. Dr. O. J. Oluwadare     | - | Secretary and NSPS Representative |

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2. Dr. A. O. Adeoye

### Welfare/logistic sub-committee

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2. Dr. Mrs. Aremu

### Technical sub-committee

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3. Mr. Ife

### Publicity sub-committee

1. Dr. L. B. Adewole
2. Mr. Naziru Imam

### Registration sub-committee

1. Prof. E. .O. Adeyefa
2. Dr. O. J. Oluwadare

### Info Tech Unit

Mr. Femi Omotosho

## Appreciation

The Members of the Trustee/Governing Council of the Nigerian Society of Physical Sciences sincerely thank all participants for attending the 3rd International Conference of the Nigerian Society of Physical Sciences, held at the Federal University Oye-Ekiti, Ekiti State, Nigeria.



**NIGERIAN SOCIETY OF PHYSICAL SCIENCES**  
*in collaboration with the*  
**FEDERAL UNIVERSITY OYE-EKITI**  
EKITI STATE, NIGERIA.

# 3<sup>rd</sup> INTERNATIONAL Conference

**OF NIGERIAN SOCIETY OF PHYSICAL SCIENCES**

## Theme:

**PHYSICAL SCIENCES  
FOR A SUSTAINABLE AND  
EQUITABLE FUTURE:  
ADDRESSING GLOBAL  
CHALLENGES**

**CHIEF HOST:**  
**PROF. ABAYOMI SUNDAY FASINA,**  
Vice Chancellor,  
Federal University Oye-Ekiti



**3rd - 6th Feb., 2025.**



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# 3<sup>rd</sup> INTERNATIONAL Conference

OF NIGERIAN SOCIETY OF PHYSICAL SCIENCES

*in collaboration with the*

FEDERAL UNIVERSITY OYE-EKITI

EKITI STATE, NIGERIA.



*Theme:*

**PHYSICAL SCIENCES FOR A SUSTAINABLE AND  
EQUITABLE FUTURE: ADDRESSING GLOBAL CHALLENGES**

KEYNOTE  
SPEAKERS

**DR. SIMPHIWE SPEECH NELANA**

DVC: Research, Innovation, Commercialization and Internationalization,  
Vaal University of Technology, South Africa

**PROF. JIMOH OLADEJO TIJANI**

Department of Chemistry,  
Federal University of Technology, Minna, Niger State.



3rd - 6th Feb., 2025.



9:00am



Federal University Oye-Ekiti, Ekiti State, Nigeria

CHIEF HOST:

**PROF. ABAYOMI SUNDAY FASINA,**

Vice Chancellor, Federal University Oye-Ekiti

HOST:

**PROF. ABIODUN AKEEM AJIBOYE,**

Dean, Faculty of Science

NSPS PRESIDENT

& CHAIRMAN, BOARD OF TRUSTEE:

**DR. OLADIRAN JOHNSON ABIMBOLA**

LOC CHAIRMAN:

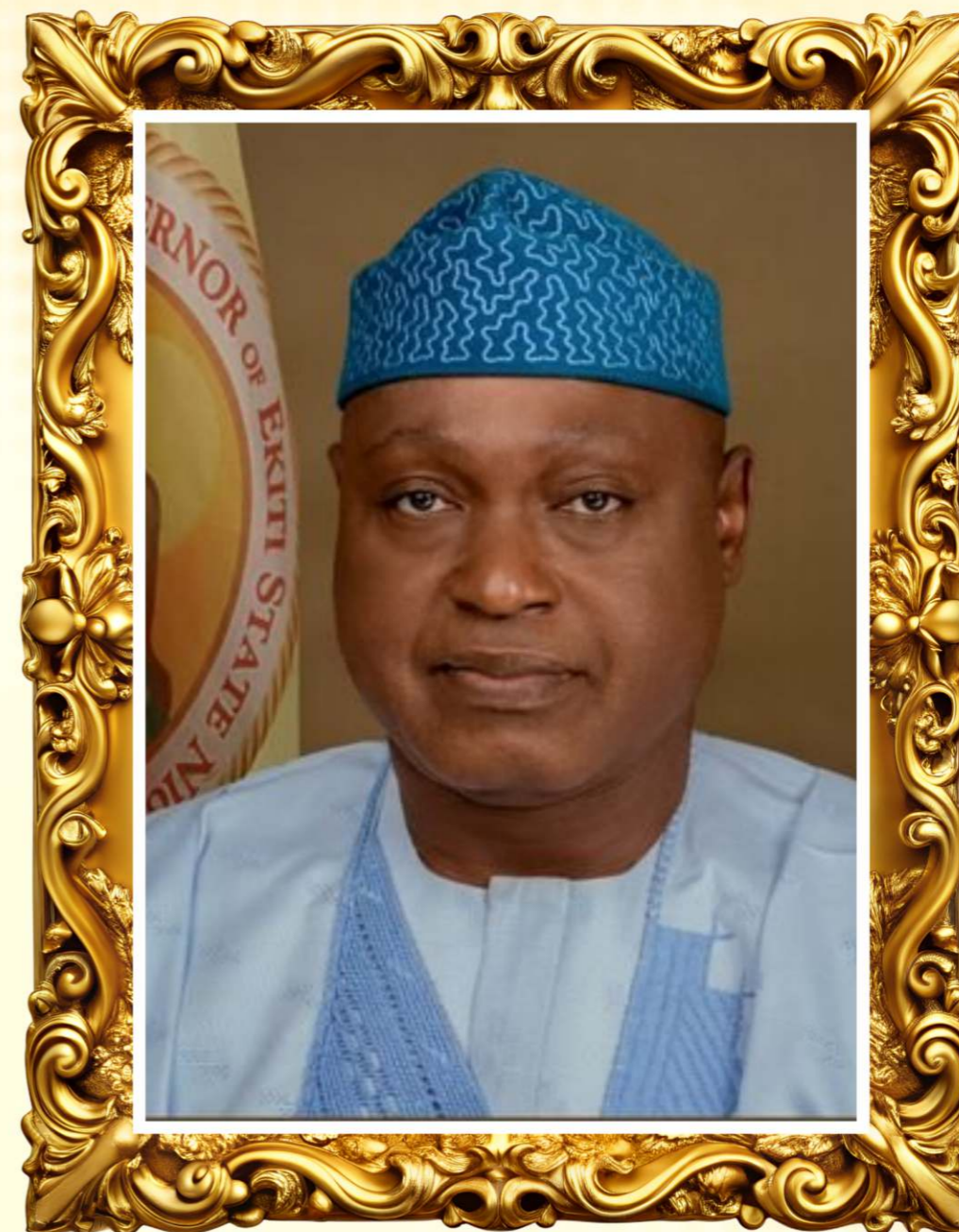
**PROF. OYEBAMIJI OYEDELE OKETAYO,**

Department of Physics, Federal University Oye-Ekiti

LOC SECRETARY:

**DR. OLUWATIMILEHIN JOSHUA OLUWADARE,**

Ag. Head, Department of Physics, Federal University Oye-Ekiti



HIS EXCELLENCY

**BIODUN ABAYOMI OYEBANJI**

GOVERNOR OF EKITI STATE, NIGERIA



**CHIEF HOST:**

**PROF. A. S. FASINA**

**VICE CHANCELLOR, FEDERAL UNIVERSITY OYE-EKITI**



**HOST**

**PROF. A. A. AJIBOYE**  
DEAN, FACULTY OF SCIENCE



**NSPS PRESIDENT &  
CHAIRMAN, BOARD OF TRUSTEES:**

**DR. OLADIRAN JOHNSON ABIMBOLA**



**KEYNOTE SPEAKER 1**

**DR. SIMPHIWE SPEECH NELANA**

**DVC: RESEARCH, INNOVATION, COMMERCIALIZATION  
AND INTERNATIONALIZATION,  
VAAL UNIVERSITY OF TECHNOLOGY, SOUTH AFRICA**



**KEYNOTE SPEAKER 2**

**PROF. JIMOH OLADEJO TIJANI**

**DEPARTMENT OF CHEMISTRY,  
FEDERAL UNIVERSITY OF TECHNOLOGY,  
MINNA, NIGER STATE.**

# ORDER OF EVENTS

## SUNDAY 2ND FEBRUARY, 2025:

Arrival / Collection of conference materials

Venue: New Faculty of Science Auditorium, Phase II, Federal University Oye-Ekiti

Time: 2:00 pm - 4 pm

## MONDAY 3RD FEBRUARY, 2025:

Conference Opening Ceremony, Investiture of Fellows and Recognition of Ph.D. Prize Winners

Venue: New Faculty of Science Auditorium, Phase II, Federal University Oye-Ekiti

- 09:00 - 10:30 am - Collection of conference materials CONTD
- 10:30 - 10:50 am - Arrival of invited guests and members
- 10:50 - 11:00 am - Arrival of the Board of Trustee/Governing Council  
Arrival of the Vice Chancellor and his management Team, Federal University Oye-Ekiti, Ekiti State, Nigeria  
Arrival of the Executive Governor of Ekiti State, His Excellency Biodun Abayomi Oyeabanji
- 11:00 - 11:05 am - Opening Prayer/National Anthem
- 11:05 - 11:10 am - FUOYE Anthem
- 11:10 - 11:15 am - Introduction of Dignitaries
- 11:15 - 11:20 am - Welcome address by the Host, Prof. Abiodun Akeen Ajiboye, Dean of Science, Federal University Oye-Ekiti, Ekiti State, Nigeria.
- 11:20 - 11:30 pm - Opening Remarks by LOC Chairman, Prof. Oyebamiji Oyedele Oketayo
- 11:30 - 11:40 am - Address by NSPS President: Dr. Oladiran Johnson Abimbola
- 11:40 - 11:50 am - Remarks and Declaration of the Conference Open by the Chief Host & Chairman -- The Vice Chancellor, Federal University Oye-Ekiti, Ekiti State, Nigeria, Prof. Abayomi Sunday Fasina.
- 11:50 - 12:00 pm - Interlude: FUOYE Band
- 12:00 - 12:30 pm - Presentation by the Keynote Speaker I, Prof. Jimoh Oladejo Tijani, Department of Chemistry, Federal University of Technology, Minna, Niger State
- 12:30 - 12:40 pm - Investitures of Fellow:
  1. NSPS Fellow Award to Prof Abdelghaffar Amoka Abdelmalik, *Department of Physics, Ahmadu Bello University, Zaria.*
  2. NSPS Fellow Award to Prof. Olusola Oladele James, *Department of Chemistry, Kwara State University, Malete*
  3. NSPS Fellow Award to Prof. Olusola Johnson Ojo, *Department of Geology, Federal University Oye-Ekiti*
- 12.40 - 12:50 pm - Recognition of Ph.D. Prize Winners
  1. Introduction of each Ph.D. Prize winner
  2. Presentation of certificates, plaques and cash prizes
- 12.50 - 12:55 pm - Investitures of Life Member to Ph.D. Prize Winners:
  1. Dr. Cookey Iyen (Physics & Astronomy Section)
  2. Dr. Ezekiel Omole (Mathematics & Statistics Section)
  3. Dr. Alaba Joseph Adebayo (Chemistry Section)
  4. Dr. Chidiebere Charles (Earth Sciences Section)

- 12:55 - 1:00 pm - Vote of Thanks by LOC Chairman, Prof. Oyebamiji Oyedele Oketayo
- 01:00 - 01:05 pm - Second Stanza of the National Anthem
- 01:05 - 01:30pm - Refreshments
- 02:30 - 03:00 pm - Tour of the FUOYE Campus.
- 04:00 - 6:00 pm - AGM (Venue: Physics 3 IN 1 LAB)

## TUESDAY 4TH FEBRUARY, 2025:

- 8:00 - 8:30 am - Arrival of Participants
- 8:30 - 9:00 am - Virtual Presentation by the Key Speaker II, **Dr. Simphiwe Maurice Nelana**, DVC: Research, Innovation, Commercialization and Internationalization, Vaal University of Technology, South Africa
- 09:00 - 12:00 noon - Workshop on Python I
- 12:00 - 12:30 pm - Tea Break
- 12:30 - 4:00 pm - Parallel Session

## WEDNESDAY 5TH FEBRUARY, 2025:

- 08:00 - 08:30 am - Arrival of Participants
- 08:30 - 11:00 am - Workshop on Python II
- 11:00 - 11:30 am - Tea Break
- 11:30 - 04:00 pm - Parallel Session

## THURSDAY 6TH FEBRUARY, 2025:

- 08:00 - 08:30 am - Arrival of Participants
- 08:30 - 10:30 am - Parallel Session
- 10:30 - 11:00 am - Tea Break
- 11:00 - 01:30 pm - Continuation of Parallel Session

## CLOSING CEREMONY:

- 2:00 - 2:15pm - Presentation by Prof. A.A. Ajiboye (Dean, Faculty of Science)
- 2:15 - 2:30pm - Vice Chancellor's Address, Prof. A.S. Fasina (Vice Chancellor, Federal University Oye-Ekiti)
- 2:30 - 2:45 pm - Vote of Thanks by LOC Chairman, Prof. Oyebamiji Oyedele Oketayo
- 2:45 - 3:00 pm - Closing Prayer/ Collection of Certificates/Departure



## 2025 NSPS Best PhD Thesis Prize Sponsors

We acknowledge and appreciate the generous contribution of the following sponsor:

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Thank you for your continued support in advancing academic excellence!

# HISTORY OF THE NIGERIAN SOCIETY OF PHYSICAL SCIENCES

The Nigerian Society of Physical Sciences (NSPS), a non-profit and non-political organization of physical scientists incorporated by the Corporate Affairs Commission of Nigeria on January 9, 2019 (CAC/IT/NO 123135), has a rich and illustrious history that reflects its commitment to advancing knowledge in the field of physical sciences. Established as a professional organization, NSPS has played a pivotal role in fostering collaboration, promoting academic excellence, and contributing to the scientific community in Nigeria.

## **Inception:**

NSPS was founded with a visionary purpose, aiming to create a platform for scholars, researchers, and professionals in the physical sciences to come together, exchange ideas, and collectively contribute to the growth of scientific knowledge. Its inception marked a significant step toward creating a community that would address the unique challenges and opportunities within the realm of the physical sciences.

## **Early Years and Formation:**

The process of establishing NSPS commenced in January 2018 through extensive discussions between Dr. Babatunde James Falaye and Dr. Oladiran Johnson Abimbola. These discussions centred around the imperative of advancing research and studies in the physical sciences within Nigeria. The envisioned initiatives included the organization of conferences, workshops, and scholarship programs; the establishment of scientific prizes and awards; and the publication of scholarly journals.

In February 2018, the duo sought counsel from senior colleagues, and by March 2018, they encountered additional like-minded colleagues, namely Dr. Oluwatimilehin Joshua Oluwadare, Dr. Wasiu Yahya, and Dr. Tolulope Latunde, who not only shared the same vision but also made significant contributions toward the realization of society. The public announcement of the society, initially named "Nigerian Physical Society," appeared in several prominent daily newspapers, including The Nation, Daily Trust, and New Telegraph, on May 7, 2018.

In September 2018, a formal notification prompted a reconsideration of the society's name, necessitating a revision before obtaining the consent of the Registrar General of the Corporate Affairs Commission of Nigeria. Following careful deliberation among prospective Trustees, the decision was made to change the name to "Nigerian Society of Physical Sciences." Consent and approval for this name change were successfully obtained in November 2018 and widely publicized in leading newspapers, including Leadership, Pilot, and Blue Print, on November 6, 2018.

Ultimately, the Nigerian Society of Physical Sciences was officially incorporated on January 9, 2019, with the overarching goal of promoting research and study in the physical sciences within Nigeria and providing effective programs and support.

In its early years, NSPS focused on building a strong foundation, establishing its organizational structure, and defining its mission and objectives. The society attracted members from various branches of physical sciences, including physics, mathematics, chemistry, earth sciences, and computer science.

## **Promoting Research and Collaboration:**

The NSPS quickly emerged as a catalyst for academic research and collaboration. The society organized conferences, seminars, and workshops that provided a platform for scientists and researchers to present their findings, share knowledge, and engage in fruitful discussions. These initiatives aimed to foster a spirit of interdisciplinary collaboration and contribute to the advancement of scientific understanding.

## **Journal Publication:**

Recognizing the importance of disseminating high-quality research, NSPS launched the Journal of the Nigerian Society of Physical Sciences. This scholarly publication became a reputable outlet for researchers to publish their work, contributing to the body of knowledge in the physical sciences. Over the years, the journal has gained recognition both nationally and internationally. It is currently indexed in Scopus (Q3), DOAJ, etc. NSPS also published and co-published other journals like African Scientific Reports, Recent Advances in Natural Sciences, and Proceedings of the Nigerian Society of Physical Sciences (PNSPS).

## **Ph.D. Prize Awards:**

As part of its commitment to recognizing and celebrating academic excellence, NSPS instituted the Ph.D. Prize Awards. This initiative acknowledges outstanding doctoral theses in various branches of physical sciences, encouraging researchers to strive for excellence and innovation in their academic pursuits.

## **Global Recognition:**

NSPS has actively sought to enhance its global standing. The inclusion of its journal in renowned indexing databases such as Scopus and the Directory of Open Access Journals (DOAJ) reflects the society's dedication to reaching a broader international audience and contributing to the global scientific discourse. NSPS forged affiliations with various international communities, including the American Meteorological Society, the Israeli Physical Society, and the Geophysical Society of America, among others. This positioned NSPS as a global hub for collaboration and furthered its mission on an international scale.

## **Educational Outreach and Community Impact:**

Beyond academic pursuits, NSPS has engaged in educational outreach initiatives and community impact programs. Workshops, seminars, and outreach activities have aimed at promoting scientific literacy, raising awareness, and inspiring the next generation of scientists.

## **Continued Growth and Future Outlook:**

As NSPS celebrates its journey, society remains committed to its mission of promoting excellence in the physical sciences. The future outlook includes further collaborations, research initiatives, and educational programs that will continue to shape the landscape of physical sciences in Nigeria.

In summary, the Nigerian Society of Physical Sciences stands as a beacon of academic excellence, collaboration, and innovation, contributing significantly to the scientific community in Nigeria and beyond.

## CITATION OF PROF ABDELGHAFAR AMOKA ABDELMALIK



Prof Abdelghaffar Amoka Abdelmalik was born on the 26<sup>th</sup> of December 1976 in Ihima. He obtained his First leaving certificate from Misbaudeen Primary School, Ihima, Kogi state in 1986 and his Senior School certificate from Abdulaziz Atta Memorial College Okene in 1992. He proceeded to Ahmadu Bello University, Zaria where he graduated in 1999 with a BSc. degree in Physics. He then enrolled for an MSc just after the National Youth Service and earned an MSc degree in Physics in 2005. He obtained a PhD degree from the University of Leicester in 2012.

He was also a postdoctoral research fellow at the Electric Power Engineering Department of the Norwegian University of Science and Technology (NTNU) Trondheim, Norway from 2013 to 2015. He was part of a research team on the SINTEF Energy research project "Pressure Tolerant Power Electronics for Oil and Gas Exploitation -PRESSPACK".

He joined the services of Ahmadu Bello University in March 2005 as a Graduate Assistant just as he was about to conclude his MSc program. He was upgraded to the rank of Assistant Lecturer in July 2005 and rose

through the rank to become a Professor of Physics in 2020. He began his teaching and research activities at the Department of Physics, Ahmadu Bello University, Zaria. He was a laboratory demonstrator at the Department of Engineering, University of Leicester from 2010 to 2012. He was a Visiting Lecturer at the Umar Musa Yar'adua University, Katisina from 2019 to 2020.

He has held several positions in the University, including Assistant Departmental, Examination officer, Level Coordinator, Postgraduate seminar coordinator, and member of several committees within the university.

He was appointed Director of the Equipment Maintenance and Development Centre (EMDC), a position he held from May 2020 to November 2024. As the Director of EMDC,

- ❖ He initiated the revival and full rehabilitation of the Centre. The Centre is currently one of the most active Centres of the University.
- ❖ He created a funding model and financial stability for the Centre
- ❖ He revived the EMDC training workshop for the training and retraining of technical and academic staff in the art of equipment maintenance and repairs and established the capacity to host monthly training workshops at the Centre.
- ❖ He hosted twenty (20) training workshops from 2021 to 2024 and over five hundred participants attended the training workshops.
- ❖ He recorded an improvement in the handling of the repair of broken-down equipment and tools in the university and three hundred and forty-eight (348) faulty equipment was repaired and serviced at EMDC.
- ❖ He initiated the documentation of the university teaching and research equipment and database development with each piece of equipment having a unique ID for easy identification and search.
- ❖ He successfully restored the lost trust between the EMDC and its clients within the university and attracted clients from outside the university.
- ❖ He led the creation of a link between the Centre and industries outside the university environment.
- ❖ He recorded an improvement in scientific and engineering equipment development at the Centre. Under his leadership, two pieces of 2hp chiller machine were developed for the Multiuser Science Research Laboratory of the university, Waste-engine oil and water powered burner for an industrial steam boiler for SAJ Foods Ltd, a dairy company in Zaria, Nigeria. Performed turn-around maintenance of the SAJ Foods, steam boiler, and initiated the development of 10 units of hotplate-magnetic stirrer for the university. The project is ongoing.

As an academic and a professor of physics,

- ❖ He initiated the Materials Physics Research Group in 2018 with a group of like minds in materials physics in his department. He was the Pioneer Group Leader, 2018-2021.

- ❖ Through TWAS Research Grant as the Principal Investigator from 2013 to 2015, He procured characterization facilities that include HAMEG Programmable LCR Bridge, RBD Picoammeter, and Brookfield digital viscometer.
- ❖ Through personal funds, he procured a 35 kV DC Source, 5 kV AC source, HV probe, Multimeters, etc to set up the 35 kV DC high voltage measuring system.
- ❖ He initiated the gift of a 400 kV HVDC Generator from the University of Leicester, UK to Ahmadu Bello University Zaria, Nigeria. This is the highest high voltage source in any high voltage laboratory in a Nigerian university.
- ❖ Set up 400 kV DC and 100 kV AC experimental facilities in Ahmadu Bello University Zaria for dielectrics and electrical insulation materials research.
- ❖ He was key to the revival of High Voltage (HV) research at Ahmadu Bello University after about 30 years of its breakdown. He was responsible for the upgrading of the Materials Science Research Laboratories in the Department of Physics, Ahmadu Bello University Zaria, Nigeria to include a high voltage materials laboratory, the materials Characterization Laboratory, and the Transformer Oil Dissolved Gas Analysis laboratory. Our HV laboratory is one of the three HV facilities in the country and perhaps the only functional high-voltage materials laboratory in any University in the Northern part of the country.
- ❖ He was one of the recipients of the 2008 Islamic Development Bank (IsDB) Merit Scholarship Award for High Technology (PhD) on the development of natural ester insulating fluid from Nigerian vegetable oil in 2008. He was among the five recipients of the 2010 IEEE DEIS Graduate Fellowship Award for Innovative Idea: Effect Side Branching on natural ester insulating fluid. He was a finalist at the University of Leicester's 2011 Postgraduate Festival. He won the World Academy of Science (TWAS) Individual Research Grant for Basic Sciences as Principal Investigator for the project "Nigerian vegetable oil-based fluid as an alternative drilling fluid for offshore rigs" in 2013. The award began the making of their today's materials science research laboratory in ABU. He won TETFund NRF and IBR research grants as Principal Investigator.
- ❖ He has published 68 articles in peer-reviewed journals and conference proceedings. Over 80% of his journal articles are in Scopus index journals.
- ❖ He graduated thirteen (13) postgraduate students (PhD and MSc) and he is currently involved in the supervision of 7 postgraduate students (PhD and MSc).
- ❖ He has also supervised several undergraduate students.
- ❖ He is a Member of the IEEE Dielectric and Electrical Insulation Society Education Committee, an Associate Editor for IEEE Transactions on Dielectrics and Electrical Insulation, a Reviewer of IEEE Transactions on Dielectrics and Electrical Insulation, etc.

He has participated in several Conferences, Workshops, and Technical Meetings in Italy, Mexico, Norway, the UK, and the USA. I participated in the IAEA/ICTP School on Pulsed Neutrons: Characterization of Materials, at the Abdus Salam International Centre for Theoretical Physics, Trieste (ICTP), Italy in 2007. He was also at the Institute of Physics (IOP) Conference on Early Career Research in Electrostatics and Dielectrics, London, UK in 2009. He participated in the European Electrical Insulation Manufacturers (EEIM) Seminar on Electrical Insulation for Transformers Materials, Design, Reliability & Performance, Testing, Research & Development, University of Manchester, UK in 2010. He participated in the UK University High Voltage Network (UHVnet) Colloquium in the UK in 2010, 2011, and 2012. He participated in the IEEE/NTNU Seminar on Silicon Carbide in Power Electronics in Trondheim, Norway in 2014. He also participated in the International Topical Meeting on Nuclear Applications of Accelerators conference and the pre-conference PUFFIn (Penelope-Based User-Friendly Fast Interface for Calculating Dose Distribution in Irradiated Products) training in 2024 in Norfolk, Virginia, USA.

His major contribution to the advancement of dielectric physics in Nigeria and globally has been in five principal areas: (i) Properties of engineered insulation materials, (ii) integrity of high voltage insulation systems, (iii) electrical ageing, degradation, and breakdown, (iv) insulation reliability studies, (iv) "nano-dielectrics" i.e. dielectric materials made from nanocomposites, (v) the measurement and study of partial discharges (PD). In a pioneering work, He authored work on optical PD study of the insulating system under fast transient voltage an area in which work is still on to develop a suitable technique for PD study on converters, transformers, and penetrators under fast-rise voltage. He delivered his Inaugural Professorial Lecture titled "The Dirty Dielectrics: Imagine a World of Electricity without It" on the 30th of July 2024.

He is a member of the ASUU media team called the ASUU Rapid Response Team (RRT). He is very active on social media and engages his audience with thought-provoking discussions on Nigeria's public university crises. He is an education rights activist and a commentator on issues of national development. He is a bodybuilder and loves children. He is married with five children.

## CITATION OF PROF. OLUSOLA OLADELE JAMES



**P**rof. Olusola Oladele James obtained his B.Sc. and M.Sc. degrees in Chemistry from the University of Ilorin, Ilorin, Nigeria, in 2001 and 2005, respectively. He earned a Ph.D. in Applied Chemistry from the Indian Institute of Technology, Dhanbad, India, in 2013, supported by the TWAS-CSIR Postgraduate Fellowship. He gained his first research experience in Germany at the Department of Technical Chemistry II, University of Duisburg-Essen, Essen, Germany, through the TWAS-DFG Cooperation Visit Fellowship. He later undertook postdoctoral research at the Technical University of Braunschweig as an Alexander von Humboldt Research Fellow. Additionally, he has participated in several academic training programs, including “Young Scholars in Africa Challenges and Opportunities,” sponsored by the German Academic Exchange Service (DAAD) and held in Nairobi, Kenya, in March 2019.

Prof. James began his academic career at Joseph Ayo Babalola University (JABU), Ikeji-Arakeji, Osun State, in 2006, where he delivered the first lecture at the Faculty of Science in October 2006. He was a faculty member at Covenant University, Ota, Ogun State, from 2007 to 2009. Between 2009 and 2013, he served at the Central Institute of Mining and Fuels Research (CIMFR, Digwadih Campus) in India, initially as a Junior Research Fellow (2009-2011) and later as a Senior Research Fellow (2011-2013). He joined Kwara State University (KWASU), Malete, as a Senior Lecturer in 2014 and was promoted to Professor in 2021, becoming the first Professor of Chemistry at KWASU.

Prof. James' academic contributions have been marked by excellence and innovation. At Covenant University, he introduced several innovations in undergraduate physical chemistry practicals. He played a pivotal role in fostering research collaboration between CIMFR, Digwadih Campus, and IIT Dhanbad in India. At KWASU, he has held several administrative positions, including Head of the Chemistry Unit (2014-2015), Chairman of the Department Curriculum Review Committee, Chairman of the Faculty Curriculum Review Committee, Chairman of the Faculty Accreditation Committee, and Chair of the University Lecture Attendance Monitoring Committee. He has also served as a member of various committees, such as the LOC for the Faculty Hands-on Training on Laboratory Instruments and the LOC for the Second NSPS Conference held at KWASU in 2023. Additionally, he chaired the ACT3B Workshop Series at KWASU and is a member of the KWASU Business Committee of the Senate.

Prof. James' research interests include heterogeneous catalysis, material chemistry, photosensitizers, and photoantimicrobials. He has published extensively on these subjects in peer-reviewed outlets and serves as a reviewer for numerous high-impact chemistry journals. He has supervised many undergraduate and postgraduate students and has served as an external examiner for B.Sc., M.Sc., and Ph.D. programs at various Nigerian universities and institutions outside Nigeria.

He is a member of the Chemical Society of Nigeria (CSN), the American Chemical Society (ACS), and the Royal Society of Chemistry (RSC), United Kingdom.

Prof. James is happily married and blessed with a beautiful baby girl.

## CITATION OF PROFESSOR OLUSOLA JOHNSON OJO, FNMGS, FNAPG, FNAEGE



**P**rof. Sola Ojo was born in Ikole Ekiti. He earned his B.Sc. in Geology from the University of Ilorin and an M.Sc. in Petroleum Geology from the University of Ibadan. In 2000, he obtained a Ph.D. in Petroleum Geology from the University of Ilorin and subsequently undertook post-doctoral research at the Technical University, Berlin, Germany, in 2001.

His academic career began at the University of Ibadan in 1993. After a brief stint, he moved to the University of Ilorin, where he rose through the ranks, from Assistant Lecturer to becoming a full Professor of Petroleum Geology at the Federal University Oye-Ekiti (FUOYE).

Prof. Ojo has served the university community in various administrative capacities, including Acting Vice Chancellor, Deputy Vice Chancellor (Academics), Member of the University Council, Member of the University Senate, Chairman of the University Examination Committee, and Head of Department, among others. He has also served as an external examiner (both undergraduate and

postgraduate) to universities in Nigeria (including UI, UNIBEN, EKSU, FUT MINNA, and FUTA AKURE) and internationally (Ghana, Zimbabwe, South Africa, and Malaysia).

He has attended numerous international conferences and collaborated with researchers from countries such as the USA, Germany, France, the Netherlands, and South Africa. He has received grants from the Volkswagen Germany Foundation and the Petroleum Technology Development Fund (PTDF) for research on the petroleum and basin studies of Nigeria. Currently, he holds a National Research Grant and serves as the Principal Investigator for a National Research Fund TetFund-sponsored project on the petroleum prospectivity of the Bida Basin.

His research focuses on the petroleum prospectivity of Nigeria's inland sedimentary basins. He applies sedimentological, palynological, and geochemical tools to unravel the stratigraphy, paleoenvironments, and petroleum potential of these basins, often collaborating with senior colleagues, peers, and students. His work has significantly advanced knowledge in Nigerian sedimentary basins through the publication of over 100 impactful articles in journals, books, and conference proceedings.

Prof. Ojo has mentored and supervised numerous M.Sc. and Ph.D. theses. He had the privilege of a sabbatical tenure at Shell Petroleum Development Company (SPDC) in Port Harcourt.

He has received several awards, including DAAD fellowship awards (Doctoral and Post-Doctoral), the Nigerian Association of Petroleum Explorationists (NAPE) Most Outstanding Earth Science Lecturer Award (NOELA) in 2017, the NMGS/Total Energies Award for Best Paper Presented at the NMGS Conference in 2021 and 2022, the Most Outstanding Researcher Award in FUOYE (2021), and the NRF/TetFund Grant Award (2021 to date).

Prof. Ojo has also contributed to his immediate community and the nation through professional services as a resource person for government agencies such as the Nigeria Geological Survey Agency (NGSA), the Petroleum Technology Development Fund (PTDF), and the Kwara State Ministry of Solid Minerals, among others.

He is actively involved in professional societies and is a Council Member and Fellow of the Nigerian Mining and Geosciences Society (NMGS). He is also a Fellow of the Nigerian Association of Petroleum Explorationists (NAPE), Editor-in-Chief of the Journal of Mining and Geology, Associate Editor of the NAPE Bulletin, and an Executive Member of the NMGS Council. Additionally, he is a member of the American Association of Petroleum Geologists (AAPG), the Geological Society of America (GSA), and a registered member of the Council of Mining Engineers and Geoscientists (COMEG).



# 2025

## NSPS PhD THESIS PRIZE WINNERS

We are thrilled to announce the distinguished recipients of the 2023 Nigerian Society of Physical Sciences (NSPS) PhD thesis Prize. These individuals have demonstrated exceptional research contributions, academic excellence, and a commitment to advancing knowledge in their respective fields.

Without further ado, we extend our heartfelt congratulations to the following outstanding scholars:

### DR. EZEKIEL OLAOLUWA OMOLE



Ezekiel Olaoluwa Omole graduated with a Second Class degree in Mathematics from the University of Ado Ekiti in 2011. He furthered his education by earning an M.Tech in Industrial Mathematics (Numerical Analysis) from the Federal University of Technology, Akure, in 2016. In 2018, he completed a Professional Diploma in Education, becoming a certified teacher and member of the Teachers Registration Council of Nigeria (TRCN). In 2024, he obtained a Ph.D. in Mathematics (Numerical Analysis) from the Federal University Oye-Ekiti. Ezekiel has taught Mathematics at Joseph Ayo

Babalola University and the Federal University Oye-Ekiti. He currently holds the position of Lecturer II at Landmark University. With a strong research portfolio, he has published over 33 SCOPUS-indexed papers, earning recognition as one of Africa's top 300 prolific mathematics authors between 2021 and 2024. His outstanding contributions have been acknowledged through the Landmark University Research Excellence Award for publishing in Q1 journals. Ezekiel is an active member of several professional societies. He specializes in numerical analysis, serves on the editorial boards of academic journals, and reviews for reputable publications in his field.

**Thesis Title:** Formulation of Hermite-based block integrators for the numerical solution of second-order elliptic partial differential equations.

**Section:** Mathematics & Statistics.

**University:** Federal University, Oye Ekiti, Ekiti State, Nigeria.

#### Publications from the thesis:

1. <https://www.nature.com/https://www.mdpi.com/2504-3110/6/9/497>
2. <https://www.sciencedirect.com/science/article/pii/S2211379722005447>
3. <https://www.inderscienceonline.com/doi/abs/10.1504/IJMOR.2023.129482>
4. <https://www.sciencedirect.com/science/article/pii/S2211379723000633>
5. <https://www.mdpi.com/2075-1680/12/9/891>
6. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0301505>

### DR. CHIDIEBERE CHARLES AGOHA



Agoha Chidiebere Charles earned a Second-Class Upper degree in Physics from the Federal University of Technology, Owerri (FUTO), in 2009. He went on to complete a Master's degree in Geophysics from the same institution in 2015 and later obtained a Ph.D. in Applied Geophysics from FUTO in 2023. Motivated by a passion for teaching and instilling values in young minds, Agoha began his career as an Instructor at Christian Child Care Secondary School, Owerri, in 2013. Later that year, he secured an internship with Shell Petroleum Development Company. In 2019, he joined FUTO

as an Assistant Lecturer, where he has continued to excel as an educator and researcher. Agoha's research focuses on solving real-world problems by leveraging his expertise in physics. His work has resulted in over 15 publications in SCOPUS-indexed journals, as well as numerous contributions to conference proceedings. A dedicated professional, he is a member of the Nigerian Mining and Geosciences Society (NMGS) and the Nigerian Association of Petroleum Explorationists (NAPE).

**Thesis Title:** 3D geomechanical characterization of reservoirs of "BETA" and "FUJA" fields, offshore Niger Delta, Nigeria, using an integrated approach

**Section:** Earth Sciences

**University:** Federal University of Technology, Owerri, Imo State, Nigeria

#### Publications from the thesis:

1. <https://link.springer.com/article/10.1007/s13202-021-01244-9>
2. <https://link.springer.com/article/10.1007/s12145-024-01464-7>

### DR. COOKEY IYEN



Cookey Iyen earned a Second-Class Upper B.Sc. degree in Physics from Nasarawa State University, Keffi, in 2006. He went on to obtain a master's degree in Physics from the same institution in 2016. In 2019, he embarked on a Ph.D. program at the Federal University of Lafia, successfully completing it in 2024. Driven by his passion for teaching, research, and community service, Coockey joined the Department of Physics at the Federal University Wukari in 2013 as a Graduate Assistant. Over the years, he progressed in his career, attaining the rank of Senior Lecturer in 2024. Coockey Iyen's research endeavors have

yielded significant outcomes, with publications in high-impact Q1 journals such as Nature Scientific Reports. He has also presented his findings at esteemed conferences and contributed to conference proceedings. Beyond academia, he actively engages in community service, leveraging his expertise to make a positive impact on his community and the nation at large. Coockey is a proud member of several prestigious professional organizations, including the Nigerian Society of Physical Sciences (NSPS), the Nigerian Institute of Physics (NIP), and the American Physical Society (APS).

**Thesis Title:** Quantum information and quantum metrology of an open system in the background of Schwarzschild black hole

**Section:** Physics & Astronomy

**University:** Federal University of Lafia, Nasarawa State, Nigeria

#### Publications from the thesis:

1. <https://www.nature.com/articles/s41598-024-76007-7>
2. <https://www.nature.com/articles/s41598-023-34949-4>

# DR. ALABA JOSEPH ADEBAYO



**A**laba Joseph Adebayo graduated with a Second-Class Upper degree in Industrial Chemistry from Joseph Ayo Babalola University (JABU) in 2013. He proceeded to earn a Master's degree in Industrial Chemistry from the Federal University of Technology, Akure (FUTA), in 2017, and later achieved a Ph.D. in Industrial Chemistry from FUTA in 2023. Driven by a passion for teaching and inspiring the younger generation, Alaba accepted an offer from Olusegun Agagu University of Science and

Technology (OAUSTECH) as an Adjunct Lecturer in 2023. Alongside his teaching role, he serves as a Chief Technologist at the institution, a position he continues to hold. As a dedicated researcher, Alaba focuses on problem-oriented studies, applying his expertise in chemistry to address practical challenges. His scholarly contributions include several journal articles, with three of his Ph.D. research outputs published in SCOPUS-indexed journals.

**Thesis Title:** Production and characterisation of rigid biobased foams from plant-derived chemicals

**Section:** Chemistry

**University:** Federal University of Technology, Akure, Ondo State, Nigeria.

**Publications from the thesis:**

1. <https://link.springer.com/article/10.1007/s42250-023-00594-7>
2. <https://www.sciencedirect.com/science/article/pii/S2666086523000085>
3. <https://link.springer.com/article/10.1007/s13762-023-05164-5>

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