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**NIGERIAN SOCIETY OF PHYSICAL SCIENCES**  
IN COLLABORATION WITH  
**FACULTY OF PURE AND APPLIED SCIENCES,**  
**KWARA STATE UNIVERSITY, MALETE**



# CONFERENCE OF THE NIGERIAN SOCIETY OF PHYSICAL SCIENCES KWASU, MALETE 2024

THEME:  
**PHYSICAL SCIENCES: CURRENT TRENDS AND  
MODERN PERSPECTIVES**

## PROGRAMME

**CHIEF HOST**  
**PROF. SHAYKH LUQMAN JIMOH,**  
Ag. Vice Chancellor, KWASU



**1st - 4th February, 2024**

## THE CITATION OF PROF. OLUWASESAN ADENIRAN FALAIYE



**P**rofessor Oluwasesan Adeniran FALAIYE, born over 50 years ago, initiated his primary education in Ijumu-Oro. Subsequently, he accompanied his parents to Iyara-Ijumu, where he completed his primary schooling. His secondary education commenced at Ijumu Anglican Secondary School, Iyara-Ijumu. Subsequently, he proceeded to Playfair Memorial College, Oro-Ago, Kwara State, and completed his secondary education between 1982 and 1985.

His academic pursuits led him to the distinguished University of Ilorin, Ilorin, Nigeria, where he achieved significant milestones. He earned his B.Sc. in 1993, followed by an M.Sc. in 2001, and ultimately, a Ph.D. in 2008. His academic specialization encompasses Atmospheric Physics, Meteorology, Air Quality Monitoring, and Solar Radiation.

Professor Oluwasesan Adeniran FALAIYE joined the service of the University of Ilorin in August 2001 as an Assistant Lecturer and rose through the ranks to become a professor on 1st October, 2019. In the year 2013, Professor Falaiye, O. A went on Sabbatical Leave at the Federal University, Lafia, Nasarawa State, Nigeria., from November 2013 to October 2014. He became the Head of Physics Department, University of Ilorin, Ilorin, Nigeria on 1<sup>st</sup> August, 2017 and served for two years.

He is a member of a good number of professional bodies, among which are African Geospace Society (2011 to date), Solar Energy Society of Nigeria (2008 to date), Nigeria Institute of Physics (2005 to date), Nigeria Meteorological Society (2003 to date), Society of Satellite Professionals International Nigeria (2013 to date), etc. Professor Oluwasesan Adeniran FALAIYE has served in various capacities, both administratively and research-wise within the University system and beyond.

Professor Oluwasesan Adeniran FALAIYE has actively participated in workshops and conferences across Nigeria for nearly two decades, contributing valuable research to his specialized field. Renowned for his extensive publication record, Professor FALAIYE has authored over fifty papers in both local and esteemed international journals. His research extends to collaborations with prestigious institutions such as NASA, University of Maryland, USA, BSRN, Davis, Switzerland, CAR, NASRDA, and several other notable research organizations globally. Currently, he serves as the principal investigator of the Atmospheric Research Laboratory at the Department of Physics, University of Ilorin, which hosts the CIMEL SUNPHOTOMETER.

He has evaluated numerous professorial positions and served as an external examiner for B.Sc., M.Sc., and Ph.D. programs at various institutions. Additionally, he has provided training, supervision, and guidance to approximately 20 M.Sc. and 7 Ph.D. students at the University of Ilorin, Ilorin, Nigeria. The individuals he has mentored and graduated are now dispersed across different regions of the country and overseas, testifying to his enduring impact on their lives.

It is noteworthy to mention that he has served as a mentor to the majority of the founding members of NSPS.

Professor Oluwasesan Adeniran FALAIYE is married to one wife and blessed with children.

## 2ND CONFERENCE OF NIGERIAN SOCIETY OF PHYSICAL SCIENCES

IN COLLABORATION WITH

## FACULTY OF PURE AND APPLIED SCIENCES, KWARA STATE UNIVERSITY, MALETE



THEME

### PHYSICAL SCIENCES: CURRENT TRENDS AND MODERN PERSPECTIVES

GUEST SPEAKER

**PROF. K. J. OYEWUMI**

1st – 4th February 2024. 11:00 Am  
 Kwara State University, Maletе, Kwara State, Nigeria.

CHIEF HOST

**PROF. SHAYKH LUQMAN JIMOH,**  
Ag. Vice Chancellor, KWASU

Chairman

**PROF. BAYO LAWAL**  
Former Director, CRIT, KWASU

Host

**PROF. ABUBAKAR SIDDIQ MOHAMMED,**  
Dean of FPAS, KWASU

NSPS President & Chairman, Board of Trustee:  
**DR. OLADIRAN JOHNSON ABIMBOLA**

LOC Chairman

**DR ALIRU OLAJIDE MUSTAPHA,**  
Ag. Head, Chemistry, KWASU

LOC Secretary

**DR. WASIU A. YAHYA,**  
(Ag. Head, Physics & Materials Science, KWASU)



CHIEF HOST

**PROF. SHAYKH LUQMAN JIMOH,**  
Ag. Vice Chancellor, KWASU



HOST

**PROF. ABUBAKAR SIDDIQ MOHAMMED,**  
DEAN OF FPAS, KWASU



CHAIRMAN

**PROF. BAYO LAWAL,**  
FORMER DIRECTOR, CRIT, KWASU



NSPS PRESIDENT & CHAIRMAN, BOARD OF TRUSTEE:  
**DR. OLADIRAN JOHNSON ABIMBOLA**

He has extensive experience in employing non-perturbative techniques such as the Variational technique, SUSY (Supersymmetry), WKBJ (Wentzel–Kramers–Brillouin–Jeffreys), AIM (Asymptotic Iterative Method), NU (Nikiforov-Uvarov), and their practical applications to diverse physical systems, including Nuclear Physics, Hypernuclear Physics, Atomic Physics, and more.

His expertise extends to the application of the dynamical group theory approach, investigating the symmetries of physical systems in spaces of constant curvature. Additionally, he explores the statistical properties of various physical models, delves into the properties of materials within quantum dots and wells, and engages in Information Measure Theory. His research portfolio encompasses the theory of confined systems, Generalized Uncertainty Principle (GUP), General Relativity, Blackhole physics, Collective models, Bohr Hamiltonian theory, and Radiation and Environmental Physics, among other domains.

He has served and still serving as an External Examiner (B.Sc., M.Sc. & Ph.D.) to many Higher Institutions in Nigeria and abroad. These include Obafemi Awolowo University, Ile-Ife, University of Lagos, Covenant University, Ota, Federal University, Oye-Ekiti, Federal University of Technology, Minna, National Open University of Nigeria, Jabi – Abuja, School of Chemistry, University of Hyderabad, Univeriste d'Abomey Calavi (UAC), Benin Republic, Istituto Nazionale di Fisica Nucleare, Perugia, Italy and so on.

He has served and still serving as an External Assessor for Reader/Professor of Physics: Federal University, Oye-Ekiti, Federal University, Lokoja, Chukwuemeka Odumegwu Ojukwu University, Uli, Anambra State, Lead City University, Ibadan, OAU, Ile-Ife, Osun State University, and so on.

He belongs to the several Research Collaborative Groups: Theoretical Nuclear and Particle Physics group, Aristotle University of Thessaloniki, Greece; Theoretical methods of modern classical and quantum Physics working group I of the International Chair in Mathematical Physics and Applications (ICMPA) of the University of Abomey-Calavi, Cotonou, Benin

Republic; Theoretical Physics Group of the KTH-Mechanics, Royal Institute of Technology, Stockholm, Sweden; Theoretical Chemistry Group of the School of Chemistry, University of Hyderabad, India and High Energy Physics Research Group, INFN, Perugia, Italy.

He (co)-authored several scientific papers published in outstanding ISI-ranked Journals in mathematical physics, theoretical physics and nuclear physics. He has to his credit over 90 Journal articles in Physics and related disciplines in reputable outlets covering journals, edited conference proceedings and chapters in books. He has supervised several M.Sc. dissertations and 3 Ph.D. theses and currently supervising 4 Ph. D. theses. He attended several Local, National and International Schools/Seminars/Conferences. He is a member of many learned professional bodies.

**Professor Oyewumi** is a recipient of the following awards: Doctoral Fellowship Award, Aristotle University of Thessaloniki, Thessaloniki, Greece; ICMPA-ICTP-UNESCO Postdoctoral Fellowship, Universite d'Abomey Calavi, Benin Republic; TWAS-UNESCO Research Associate Fellowship, School of Chemistry, University of Hyderabad, India and Abdus Salam International Centre for Theoretical Physics (ICTP)-Training and Research in Italian Laboratories (TRIL) Fellowship Award, Istituto Nazionale di Fisica Nucleare (INFN), Sezione di Perugia, Italy.

It is noteworthy to mention that he has served as a mentor to the majority of the founding members of NSPS.

He is happily married and the union is blessed with wonderful children.

## THE CITATION OF PROF. KAYODE JOHN OYEWUMI



**P**rofessor Kayode John OYEWUMI hails from Ogbomoso, Oyo State, Nigeria. His secondary school education was completed at The Apostolic Grammar School, Ogbomoso. He earned his B.Sc. in Mathematics and M.Sc. in Mathematical

Physics from the University of Ilorin, Ilorin. For his Doctoral Research Training in Theoretical Physics, he pursued studies at Aristotle University of Thessaloniki, Greece. During this period, he collaborated with his primary supervisor, Emeritus Prof. M. E. Grypeos, at the Department of Nuclear and Particle Physics, Aristotle University of Thessaloniki, Greece. He successfully obtained his Ph.D. in Physics (Theoretical Physics) from the University of Ilorin, Ilorin, Nigeria.

His academic journey continued as he commenced his career as a Graduate Assistant in the Department of Pure and Applied Mathematics at Ladoko Akintola University of Technology, Ogbomoso, on the 31st of August 1994. Later, on the 1st of November 2001, he transitioned to the Department of Physics at the University of Ilorin, starting as a Lecturer II. Over the years, he progressed through the academic ranks, culminating in his promotion to the position of a full professor in 2015.

Throughout his tenure, spanning from 1994, Professor Oyewumi has been actively involved in teaching both Physics and Mathematics courses, catering to students from the foundational 100 level to the advanced postgraduate level. Additionally, he has demonstrated his commitment to research and mentorship by supervising numerous postgraduate students. Some of his mentees have pursued further studies in various universities in Nigeria, while others have ventured abroad for advanced studies in their respective fields of study.

**Prof. Kayode John OYEWUMI** is a Professor of Theoretical Physics in the Department of Physics, Faculty of Physical Sciences, University of Ilorin.

He has more than twenty-nine years of University teaching, research and administrative experience. He has served as a Level adviser, Co-ordinator of Physics Programme (Sandwich Programme), Chairman Accreditation Committee, member of Committee on Review Series of Presentations of General Studies on UNILORIN 89.3 FM Radio 2012, Ag. Head, Department of Physics. 1<sup>st</sup> August 2013 to 31<sup>st</sup> July 2015 (with a success of full Accreditation Status), University of Ilorin member of Senate, 2013-2015 and 2015 to date, member of Senate of Federal University of Technology, Minna, 2016 to 2018, member of Library and Promotion Committee, Unveristy of Ilorin, Ilorin. 2018 to 2021. Member, NUC Team for Accreditation exercise to several universities, Resourceful Person on NUC Resource Verification visit to several universities, LOC Member (Exhibition) for the 40<sup>th</sup> Nigerian Institute of Physics Annual Conference at Federal University of Technology, Minna, Niger State, Nigeria, 20<sup>th</sup>-24<sup>th</sup> November, 2017.

Furthermore, he has served in the past as: Editor-In-Chief, Ilorin Journal of Science, Faculty Representative to the Faculty of Business and Social Sciences. He was an External Assessor for Internal and External promotion for Faculty of Engineering and Technology, University of Ilorin, Ilorin (2018-2021); Examination Commissioner for the Harmattan Semester Examination for Faculty of Arts, University of Ilorin, Ilorin, 2020. He served as the Dean, Faculty of Physical Sciences. 1<sup>st</sup> August 2021 to 31<sup>st</sup> July 2023 (with a success of full Accreditation Status of the following Departments: Industrial Chemistry, Chemistry and Geology). He was a member: Governing Board of the National Centre for Hydropower Research and Development, Board of the Centre for Affiliated Institutions and Member, Board of the School of Preliminary Studies (1<sup>st</sup> August 2021 to 31<sup>st</sup> July 2023) and University of Ilorin ICT Board, June, 2022 – Dec. 2022.

He is a Theoretical Physicist with a specialized focus on various areas within mathematical physics. His keen interests encompass both perturbative and non-perturbative methods, including Hypervirial Theorems (HVTs), Renormalization HVTs, and HFFs in mathematical physics.

## PROGRAMME OF EVENT

TIME	AGENDA
10:30 – 10:50 am	- Arrival of invited guests and members
10:50 – 11:00 am	- Arrival of the Ag. VC, Kwara State University, Malet
11:00 – 11:05 am	- Second Stanza of the National Anthem
11:05 – 11:10 am	- KWASU Anthem
11:10 – 11:15 am	- Introduction of Dignitaries
11:15 – 11:20 am	- Welcome address by the Host, Prof. Abubakar Siddiq Mohammed, Dean of Faculty of Pure & Applied Sciences, Kwara State University, Malet
11:20 – 11:30 pm	- Address by NSPS President
11:30 – 11:40 am	- Opening Remarks by Chairman of the Occasion, Prof. Bayo Lawal.
11:40 – 11:50 am	- Remarks and Declaration of the Conference Open by the Chief Host, Prof. Shaykh Luqman Jimoh -- Ag. VC, Kwara State University, Malet
11:50 – 12:00 pm	- Interlude: Ewi Rendition
12:00 – 12:30 pm	- Presentation by the Guest Speaker, Prof. Kayode John OYEWUMI
12:30 – 12:40 pm	- Investitures of Fellow: 1. NSPS Fellow Award to Prof. Kayode John OYEWUMI, <i>Department of Physics, University of Ilorin</i> 2. NSPS Fellow Award to Prof. FALAIYE Oluwasesan Adeniran, <i>Department of Physics, University of Ilorin</i>
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 prize
12.50 – 12:55 pm	- Investitures of Life Member to Ph.D. Prize Winners: 1. Dr. Sulaimon Femi ABIMBADE (Mathematics & Statistic Section) 2. Dr. Eucharua ONYEKWERE (Computer Science Section) 3. Dr. Kehinde Adam OMOTESO (Physics Section) 4. Dr. Abiodun Oluwatosin ADEOYE (Chemistry Section)
12:55 – 1:00 pm	- Vote of Thanks by LOC Chairman, Dr. Aliru Olajide Mustapha
01:00 – 01:05 pm	- Second Stanza of the National Anthem
01:05 – 01:30 pm	- Refreshments
02:30 – 03:00 pm	- Tour of the KWASU Campus.

## HISTORY OF THE NIGERIAN SOCIETY OF PHYSICAL SCIENCES

The Nigerian Society of Physical Sciences (NSPS), a nonprofit and nonpolitical organization of physical scientists incorporated by the Corpo-rate 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 centered 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 Results in Mathematical Sciences.

### 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.