

SAMUEL SEGUN OKOYA

CURRICULUM VITAE

A. PERSONAL DATA

1. **Full Name:** OKOYA, Samuel Segun
2. **Place of Birth and Date:** ZARIA, 20/10/58
3. **Contact Details:**
 - (a) **Physical Address** Dept of Mathematical and Computer Sciences
 - (b) **E-mail Address** ssokoya2003@yahoo.it or sokoya@oauife.edu.ng
 - (c) **Mobile Phone Number** +234 803 562 2581
4. **Nationality:** Nigerian
5. **State of Origin:** Lagos state
6. **Senatorial District** Lagos Island
7. **Local Government** Lagos Island
8. **Permanent Home Address:** Plot 3/5/7, Zone 3, Isokan Estate, Off Akobo
Ojurin, Ibadan
9. **Marital Status:** Married
10. **No. of Children and their Ages:** Three (3) and 32+, 30+, 25+
11. **Next of Kin:** Dr. (Mrs.) Adetutu A. Okoya
Institute of Ecology and Environmental Studies
Obafemi Awolowo University, Ile – Ife,
Nigeria
12. **Contact Details of Next of Kin:**
 - (a) **Physical Address** Institute of Ecology and Environmental Studies
Obafemi Awolowo University, Ile – Ife,
 - (b) **E-Mail Address** rokoya@oauife.edu.ng or ronkeokoya@yahoo.com
 - (c) **Mobile Phone Number** +234 803 471 9511
13. **Date of Assumption of Duty:** 1st October, 1984
14. **Rank/Status on First Appointment:** Professor
15. **Present Status:** Professor
16. **Date of Last Promotion:** 1st October 2003
17. **Present salary, Grade Level & step:** CONUASS Grade 7 Step 11
18. **Date of Confirmation of Appointment:** 18th December 1989
19. **Faculty/Directorate:** Science
20. **Department/Unit:** Mathematics.

B. EDUCATIONAL BACKGROUND

1. **Higher Educational Institutions Attended with dates:**
 - i. University of Ife, Ile – Ife, Nigeria 1979 - 1983
 - ii. University of Ife, Ile – Ife, Nigeria 1984 - 1986

iii. Obafemi Awolowo University, Ile – Ife, Nigeria 1986 - 1989

2. Academic and Professional Qualifications and Distinctions Obtained with dates:

- i. B. Sc. (Mathematics), First Class Honours, 1983
- ii. M.Sc. (Mathematics), Distinction in course work, 1986
- iii. Ph.D. (Mathematics), 1989

3. Other Distinction and Awards with Dates:

(a) Scholarships

- i. Lagos State Bursary 1980 – 1983
- ii. Federal Government Scholarship 1980 – 1983
- iii. Gulf Oil Company Scholarship 1980 – 1983

(b) Fellowships

- i. International Centre for Theoretical Physics, Visiting Scientist, Trieste, **ITALY**, 23rd July - 23rd November, **1992**,
- ii. International Centre for Mathematical Sciences, Visiting Scientist, Edinburgh, **United Kingdom**, 7th – 30th August, **1992**.
- iii. International Mathematical Union (IMU) Award to participate in International Congress of Mathematicians 1994, **Switzerland**, 3rd – 12th August, **1994**.
- iv. **1997 – 2000**, Third World Academy of Sciences Associateship Award to visit, The Institute of Mathematical Sciences, C.I.T. Campus, Madras - 600 113, **India**.
First visit: 21st August - 19th November. 1997
Second visit 23rd August – 23rd November 1999
- v. International Mathematical Union (IMU) Award to participate in International Congress of Mathematicians 1998, **Germany**, 18th – 28th August, **1998** .
- vi. MIP Award to visit Max-Planck Institute for Mathematics in the Sciences, Leipzig. **Germany**, 28th August – 15th September, **1998**
- vii. **2001 - 2006**, The Abdus Salam International Centre for Theoretical Physics Regular Associateship Award to visit **ITALY** and Affiliated Institutes.
First visit: 8th July - 6th October 2002
Second visit: 21st June - 19th September 2003
Third visit 3rd June - 2nd September 2006
- viii. International Centre for Mechanical Sciences to participate in schools on Phase change with convection: modelling and validation and modelling and control of two phase flow phenomena, CISM, Udine, **ITALY**, September 2002.
- ix. International Centre for Mechanical Sciences to participate in Microfluidics: History, Theory and Applications: CISM, Udine, **ITALY**, September 2003.
- x. Federal Government of Austria to participate in STAMM 2006 at Vienna University of Technology, Vienna, **AUSTRIA**
- xi. The Abdus Salam International Centre for Theoretical Physics, Trieste, **ITALY** as a Visiting Scientist, 11th October – 7th December, **2007**
- xii. International Mathematical Union (Commission for exchange and Development) Award to visit ICTP, Trieste, **ITALY**, October – December, **2007**

- xiii. The Abdus Salam International Centre for Theoretical Physics and IMU (Commission for exchange and Development), Trieste, **ITALY** as a Visiting Scientist 20th September – 15th November, **2008**
- xiv. International Mathematical Union (Commission for exchange and Development) Award to visit ICTP, Trieste, **ITALY**, September – November, **2008**
- xv. The Abdus Salam International Centre for Theoretical Physics, Trieste, **ITALY** as a Visiting Scientist 5th October – 3rd December, **2009**
- xvi. International Mathematical Union (Commission for exchange and Development) Award to visit ICTP, Trieste, **ITALY**, October – December, **2009**
- xvii. Institute for Mathematics and Its applications, Visiting Professor for the thematic on Complex Fluids and Complex Flows, University of Minnesota, Minneapolis, **USA**, 15th February - 15th May, **2010**.
- xviii The Abdus Salam International Centre for Theoretical Physics, Trieste, **ITALY** as a Visiting Scientist 25th June – 24th July, **2016**
- xix The Abdus Salam International Centre for Theoretical Physics, Trieste, **ITALY** as a Visiting Scientist 19th May – 15th June, **2017**

(c) Research Grants

- i. The University Research Committee of Obafemi Awolowo University, Ile - Ife, **NIGERIA**, in support of research on 'The qualitative theory of coupled nonlinear reaction - diffusion equations'. I was the principal investigator, July 1996 - June 1997.
- ii. The University Research Committee of Obafemi Awolowo University, Ile - Ife, **NIGERIA**, in support of research on 'Thermal explosion for a reaction - diffusion equation'. I was the principal investigator, July 2002 - June 2003.

(d) National Awards

- i. National Association of Mathematics Students of Nigeria (NAMSU) Merit Award in commemoration of the 50th Anniversary of Great Ife, 2012
- ii. Pastor Enoch A. Adeboye Outstanding Professor of Mathematics (Endowed Professorial Chair), University of Lagos, Akoka, Yaba, Nigeria (June 2013 to June 2017)
- iii. Faculty of Science Merit Award, Obafemi Awolowo University, Ile – Ife, 2014.
- iv. Fellow of the Nigerian Mathematical Society (FNMS), May 2016
- v. Fellow of the Mathematical Association of Nigeria (FMAN), September 2016
- vi. Faculty of Science Outstanding Alumnus Award in celebration of Obafemi Awolowo University Diamond Anniversary October, 2021,

(e) Public Lecture

- i. The Faculty of Pure and Applied Sciences Memorial Lecture delivered at the Sifax lecture theatre, Ladoké Akintola University of Technology, Ogbomosho, **Nigeria** on the 30th September, 2014 titled **The Memories of Prof. Reuben O. Ayeni..**
- ii. The inauguration and first Annual lecture of Pastor E. A. Adeboye Endowed Professorial Chair in Mathematics at the University of Lagos Main Auditorium on the 19th of February, 2015 titled **The relevance of Mathematics to everyday living**. THE GUARDIAN NEWSPAPER titled

“Don calls for intervention in teaching, learning of Mathematics” published online on 25th February, 2015.

iii. 2nd Annual and valedictory lecture of Pastor E. A. Adeboye Endowed Professorial Chair in Mathematics at the University of Lagos Main Auditorium (now Professor Ade Ajayi Auditorium) on the 13th of April, 2017 titled **Charting new Frontiers in Applicable Mathematics: the Science of Combustion and Heat Transfer.**

iv. Lead talk of the 54th Annual Conference of the Mathematical Association of Nigeria (MAN) held at Yaba College of Technology, Yaba, Lagos on the 20th of August, 2017 titled **“Mathematics and good governance”**. PUNCH NEWSPAPER titled **“Don underscores importance of Mathematics”** published online on August 23, 2017.

v. Lead paper presenter at the 29th Annual Colloquium and Congress of the Nigerian Association of Mathematical Physics (NAMPA) held at Landmark University, Omu-Aran, Kwara State on the 7th of November, 2018 titled **Relevant of Mathematical Physics to Everyday Living and National Development.**

vi. Inaugural lecture series 329th delivered at Oduduwa Hall, Obafemi Awolowo University, Ile – Ife on Tuesday 13th November, 2018 titled **The many faces of thermal explosion: Mathematical Modelling point of view.** Published in **four** Newspapers: THE NATIONS titled **“Mathematical Modelling aids development, says don”** Thursday, November 22, 2018 page 28; The PUNCH titled **“Mathematics will solve Nigeria’s problems, says Don”** on Tuesday, December 4, 2018, page 37; Guardian titled **“Don urges employment of Mathematical Modeling in solving National problems”** Thursday December 6, 2018 page 34; TRIBUNE titled **“Mathematics is key to technological development”** online and VANGUARD titled **“Mathematics is Key to Technological Development”** online.

vii. The **fear of Mathematics** being the subject dreaded by many students was presented by me and aired as a short clip in Channels TV NEWS on 5th and 6th January, 2019. The quest for better approach to mathematics education was presented.

viii. Keynote address titled **Mathematics being the bedrock for Scientific and Technological Advancement** presented at the 38th Annual Conference of the Nigerian Mathematical Society held at Department of Mathematics, J. O. C. Ezeilo Building (aka Abuja), University of Nigeria, Nsukka, Nigeria from 18th – 21st June, 2019. Published in **two** Newspapers: THE NATIONS on Thursday, June 27, 2019. Page 28 titled **“Every profession needs Mathematics”** and PUNCH on Tuesday, July 2, 2019, page 40, titled **“Mathematical modeling is the future- Don”**

ix. Lead paper presenter at the Maiden International Conference of the College of Physical Sciences held at the Post Graduate School Auditorium, Federal University of Agriculture, Abeokuta, Nigeria from 27th – 30st August, 2019 published in **two** Newspapers: THE PUNCH on Tuesday, September 3, 2019, page 41 titled **“Scientific predictions could prevent**

disaster” THE NATIONS on Thursday, September 12, 2019. Page 28 titled “**Don: Scientific predictions can check disasters”**”.

x. Lead paper presenter at the 30th Annual Congress and colloquium of the Nigerian Association of Mathematical Physics (NAMP) held at Igbenidion University, Okada, Edo State on the 6th of November, 2019 titled “**Implication of helping students understand lectures in Advanced Mathematical Physics”** published in two Newspaper: The NATION on Thursday 14th November, 2019 page 28 titled “**Don lists ways to attain SDGs”** and The PUNCH on Friday 15th November, 2019 page ** titled “**Don seeks better teaching methodology in Varsities”**”

xi. Guest speaker at the 2021 International Day of Mathematics celebration organized by Mathematics programme, Department of Physical Sciences, Landmark University, Omu-Aran, kwara State and held at International Conference Centre, Landmark University on Friday 12th March, 2021 titled “**Helping students understand lectures in mathematics for a better world”** published in two Newspaper: The PUNCH on Tuesday 16th of March, 2021, page 6 titled “**Data, statistics can solve farmer’s-herdsmen crises”** and The Nation on Thursday 25th of March 2021, page 18 titled “**Maths can end farmers-herdsmen crisis, says OAU don”**”

xii. Keynote address titled “**OAU @ 60: Past, present and future of the Faculty of Science”** presented as part of the activities for the diamond celebration of Obafemi Awolowo University (OAU) organized by the Faculty of Science on 20th October, 2021, at the Oduduwa Hall, OAU, Ile – Ife, Nigeria.

xiii. Keynote address titled “**Emerging Impact of Mathematical Physics in combating COVID-19 Pandemic”** presented at the 31st Annual Colloquium and Congress of the Nigerian Association of Mathematical Physics (NAMP) held at the Olagunsoye Oyinlola Auditorium, Osun State University, Osogbo, Nigeria, 2nd – 5th November, 2021 (ZOOM meeting)

xiv. Guest speaker at the Personality Lecture organized by the supervisees of Professor Jacob Abiodun Gbadeyan and the Department of Mathematics, University of Ilorin, Ilorin, Nigeria titled “**Celebrating an Icon @ 70 for his contributions for making of men”** held at University of Ilorin Auditorium on the 21st of December, 2021 (Physical and ZOOM meeting) in commemoration of his retirement from active service.

xv. Plenary speaker at the 2nd International Conference of Faculty of Natural Sciences, Ajayi Crowther University, Oyo, Nigeria, titled “**Computational Mathematics and Statistics for solving contemporary issues”** held at Modupe and Folorunsho Alakija Multipurpose Hall, Faculty of Law Building, Ajayi Crowther University, Oyo, Oyo State, Nigeria on the 6th of April, 2022.

(f) **International workshop/ Mentoring**

i. I linked with the International Mathematical Union (IMU) in a project under the Developing Countries Strategy Group (DCSG). It promotes mentoring relationship between seasoned

Mathematicians in other countries and African colleagues and their students and long-term partnerships. In fact, two IMU Volunteers to the Department in the person of Professor Michael Nakamaye, USA (March 2009 and October 2010) and Professor Vladimir Vershinin, France (May 2010) have impacted staff and students. During the second visit of Professor Nakamaye, he came with his postgraduate student Mrs. Martha Bryne.

ii. I organized the 1st Pastor E. A. Adeboye Endowed Chair Enrichment Training Workshop in Applied Mathematics, University of Lagos in collaboration with National Mathematical Centre, Abuja. Three lecturers from Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, two Nigerian lecturers and four instructors were at hand while a total of 39 participants attended; 6th – 11th June 2016.

C. WORK EXPERIENCE WITH DATES

1. Previous work experience outside the University System with dates:

- i. Nigerian Television Authority, Ibadan, Engineering Assistant III, December 1978 – November 1979

2. Previous Work experience in Other Universities with dates: Nil

3. Work experience in the Obafemi Awolowo University, Ile – Ife, Nigeria

- i. Graduate Assistant (October 1984 - April 1986)
- ii. Assistant Lecturer (April 1986 - September 1988)
- iii. Lecturer II (October 1988 - September 1990)
- iv. Lecturer I (October 1990 - September 1995)
- v. Senior Lecturer (October 1995 – September 2000)
- vi. Reader (October 2000 – September 2003)
- vii. Professor (October 2003 to date)

4. Courses taught in the Obafemi Awolowo University (& University of Lagos):

Undergraduate Teaching:

MTH 101 – Elementary Mathematics I; Year 1

MTH 102 – Elementary Mathematics II; Year 1

MTH 104 – Vectors; Year 1

MTH 105 – Elementary Mathematics for Biological Sciences I; Year 1

MTH 106 – Elementary Mathematics for Biological Sciences II; Year 1

MTH 201 – Mathematical methods I; Year 2

MTH 202 – Mathematical methods II; Year 2

MTH 206 – Introduction to Numerical Analysis; Year 2

MTH 211 – Introduction to Mechanics I; Year 2

MTH 212 – Introduction to Mechanics II; Year 2

MTH 213 – History of Mathematics; Year 2

MTH 305 – Vectorial mechanics; Year 3

MTH 310 – Hydromechanics; Year 3

MTH 316 – Waves; Year 3

MTH 417 – Fluid Mechanics I; Year 4

MTH 418 – Fluid Mechanics II; Year 4
MTH 499 – Project supervision; Year 4

Postgraduate Teaching:

MTH 631 – Mathematical Methods I; M.Sc. level
MTH 632 – Mathematical Methods II; M.Sc. level
MTH 633 – Viscous fluid flow; M.Sc. level
MTH 634 – Compressible fluid flow; M.Sc. level
MAT 813 – Differential Equation I; M.Sc. level at UNILAG
MAT 814 – Differential Equation II; M.Sc. level at UNILAG
MAT 904 – Topics in Differential Equation, M. Phil. Level at UNILAG
MAT 954 – Advanced Topics in Differential Equation; Ph.D. level at UNILAG

5. Graduate Student Supervision with Dates:

(a) Post Graduate Diploma (PGD):

i. AFOLABI, Olusola Oyebamiji, 129075039; Some results of partial differential equations. (UNILAG) April, 2015

(b) Master of Science (M.Sc.)

- i. **AJADI**, Suraju Olusegun, Analytical studies of a model non-linear diffusion equation with source term, 1999,
- ii. **KOMOLAFE**, Olufemi, The behavior of solutions for non-linear differential equations from combustion theory, 2004,
- iii. **KOLAWOLE**, Abiodun Bashiru, Criticality in the heat balance equation with variable pre-exponential factor, 2005,
- iv. **ADEROGBA**, Adebayo Abiodun, The effects of variable viscosity on steady flows in a slab, 2008, (Now a Lecturer at OAU)
- v. **IREKA**, Ikenna Ebubechukwu, Determination of criticality for a reactive grade fluid between parallel walls, 2008, (Now a Lecturer at Germany)
- vi. **ADELEYE**, Olabode Emmanuel, Disappearance of Criticality and ignition times of an exothermic chemical reaction, 2008 (Now in Shell Nigeria)
- vii. **AKINYEMI**, Akinhanmi Ololade, Stability and numerical results for a generalized quadratic autonomous non-linear ordinary differential equation, 2009,
- viii. **JAYEOBA** Oladimeji Johnson, Heat loss for a reactive third grade fluid with temperature dependent viscosity in a pipe, 2010,
- ix. **OLAKANLE**, Ayomiposi Mathew, Flow and heat transfer of fluid flow past a stretching plate with variable thermal conductivity and heat sink, 2012.
- x. **OGUNMILADE** Olufunke Margaret, On a class of solutions for the flow of the Maxwell fluid past an infinite plate, 2012.
- xi. **HASSAN** Samuel Oluwatosin, TP11/12/H/0768; Development of a curvilinear Random Early Detection model for internet congestion control, 2014 (co-supervised).
- xii. **ODUNTAN** Sabitu A., 030313054; A kind of separation of variables for solving some partial differential equations. (UNILAG) April 2015.
- xiii. **OKEREMETA** Evelyn E., 119075044; Effect of temperature viscosity on the velocity field of a fluid in a unidirectional cylindrical coordinate system. (UNILAG) April 2015.

- xiv. **MUHAMMAD** Sagir Maude, 109075008; Analysis of convective boundary layer flow of temperature dependent viscosity fluid over a flat plate with convective boundary condition. **(UNILAG)** April 2015.
- xv. **CHILAKA**, Temidayo A, N0. 11496011 Application of linear programming technique to Optimize Production Line for Nigeria Bottling Company. **(UNIV. OF ABUJA/ NMC, Abuja)** April 2015 (NMC, ABUJA)
- xvi. **AKINBOBOLA**, Temitope Emmanuel SCP12/13/H/0548; Viscoelastic fluid flow over a stretching sheet with variable thermal conductivity. July 2015
- xvii. **OBAYEMI**, Adebowale, O. SCP11/12/H/1829; Effect of variable viscosity on unsteady convective boundary layer flow of an incompressible viscous fluid at a vertical surface. September 2015
- xviii. **SALAWU**, Isiaka Ayinla, SCP/12/13/H/0553: Perturbation analysis of Couette flow with temperature dependent viscosity and thermal conductivity. November 2015.
- xix. **JIMOH**, Abiodun Hameed, 139075008; Effect of variable pre-exponential factor on criticality of axial flow in concentric cylinders. April 2016 **(UNILAG)**
- xx. **SULEIMAN**, Abdulkadiri Steven, 139075027; Closed – form solutions of separation of variables of a partial differential equation via quasi-solutions. April 2016; **(UNILAG)**
- xxi **ONI** Oluwabusayo John 149075019; Flow and heat transfer over a generalized stretching or shrinking wall problem. March 2017 **(UNILAG)**
- xxii **AKPAN** Ekemini Titus 139075030; Qualitative properties of an extended rosenzweig-macarthur model. March 2017 **(UNILAG)**
- xxiii **ADAGUNDURO** Nurudeen Oyebanjo, 149075043; Analytical solution to third grade fluid flow with vogel model viscosity in an annular pipe. March 2017 **(UNILAG)**
- xxiv. **CHIZEA** Ekene Matthew, 149075036 ; Heat Transfer with variable thermal conductivity through linearly stretching sheet. June 2017 **(UNILAG)**
- xxv. **ONYEKE**, Chukwudi, 159075017; Analysis of criticality for thermal explosions under small Biot number. November 2017 **(UNILAG)**
- xxvi. **ANWAN**, Ememobong Otobong, 159075055; Approximate analytical solutions for a third-grade fluid flow in a pipe with Vogel model viscosity. November 2017 **(UNILAG)**
- xxvii. **EKUNDAYO** Gabriel Hunsipe, The existence of multiple solutions for laminar – flow – similarity equation of a Newtonian fluid through a moving flat plate with suction. Defended December 2017 **(UNILAG)**
- xxviii. **UJU** Simon, SCP14/15/H/1873; Analytical investigation of unsteady unidirectional flow of second grade fluid with variable viscosity. April 2018
- xxix **OPADIRAN**, Sunday Iyiola, SCP17/18/H/1655; Natural convention boundary layer flow with variable viscosity, thermal conductivity and heat generation about a horizontal circular cylinder, August 2021.
- xxx **YINUSA**, Kazeem Abiodun, SCP17/18/H/0911; Perturbation solutions for circular annual flow in the presence of viscous heating, heat source/sink and variable model viscosity, November 2021.
- xxxi **MOSES**, Felix Oghenerobor SCP17/18/H/0674; Thermal explosion with Arrhenius kinetics in parallel plates subject to various boundary conditions. Passed oral examination in January 2022
- xxxii **ADEBOWALE**, Folasade Bolanle SCP17/18/H/0667; Preparing for final seminar.

(c) Doctor of Philosophy (Ph.D.):

Prof. Samuel S. Okoya, Ph.D.

- i. **AJADI**, Suraju Olusegun, Solutions of reduced kinetics mechanism arising from combustion theory, 2005 (Now a Professor at OAU, Ile – Ife, Nigeria).
- ii. **ADENIYAN** Adetunji, 70004295; Mathematical problems in chemically reacting hydromagnetics boundary layer flow over a vertical permeable circular cylinder. 2016 (Now a Senior Lecturer at University of Lagos, Lagos, Nigeria) (**UNILAG**)
- iii. **FATUNMBI** Ephesus Olusoji, 109075007; Heat and mass transfer in a magnetodynamics micropolar fluid flow past stretching permeable surfaces in porous media. 2019 (Now a Chief Lecturer at Department of Mathematics and Statistics, Federal Polytechnic, Ilaro, Nigeria) (**UNILAG**)
- vi. **HASSAN** Samuel Oluwatosin, TP14/15/H/0082; Development of an improved active queue management scheme to tackle bufferbloat problem, 2020 (co-supervised). Defended and await senate approval (Now a Lecturer at Olabisi Onabanjo University, Ago-Iwoye, Nigeria)
- v. **OPADIRAN**, Sunday Iyiola, SCP21/22/H/0086

6. Honours dissertations: 21

D. MEMBERSHIP OF PROFESSIONAL BODIES (WITH DATES):

- 1. Indian Academy of Mathematics 2000
- 2. American Mathematical Society 2000 – date
- 3. Nigerian Mathematical Society (NMS) 1985 – date (Life member)
 - Treasurer of the Society, 2006 – 2011 (Two tenures)
 - Member of the Council, 2006 – date
 - Editor-in-Chief, Journal of the NMS, 2011 – 2022 (Two tenures)
 - Editor, Notices of the NMS, 2015 – 2022
- 4. Mathematical Association of Nigeria 1988, 2016 – date (Life member)
- 5. Southern Africa Mathematical Sciences Association 2015 - 2017

E. PUBLICATIONS:

- 1. **Thesis/Dissertation:**
 - (i) M. Sc (Thesis): A thermal explosion theory for parallel reactions (1986)
Supervisor: Professor Reuben O. Ayeni
 - (ii) Ph.D. (Thesis): A Mathematical Model for explosions with chain branching and chain breaking kinetics (1989). Supervisor: Professor Reuben O. Ayeni
- 2. **Books/Monographs:**
 - (i) Authored Books:
 - (a) **S. S. Okoya**, The relevance of Mathematics to everyday living, 2015, pp 1 - 22, University of Lagos Press Bookshop Ltd, **Nigeria**, ISBN 1119-4456.
 - (b) **S. S. Okoya**, Charting new Frontiers in Applicable Mathematics: the Science of Combustion and Heat Transfer, 2017, pp 1 - 46, Shegsmichael & Associates Press, **Nigeria**, ISSN 1119-4456.

- (c) **S. S. Okoya**, The many faces of Thermal Explosion: Mathematical Modelling point of view, 2018, pp 1 – 74, Obafemi Awolowo University Press, Ile – Ife, **Nigeria**, ISSN 0189-7848.
- (ii) Edited Books: NIL
- (iii) Contributions to Books
 - (a) Adeagbo – Sheikh A. G., Agorzie C. J., Akinola P. A., Ayeni R. O., **Okoya S. S.**, Olagunju M. A.: `Introduction to University Mathematics Vol. 1' 1992, pp 1 - 123, Jesar Press, **Nigeria** ISBN 978-31635-0-7
 - (b) Adeagbo - Sheikh, A. G., Agorzie C. J., Akinola P. A., Ayeni R. O., **Okoya S. S.**, Olagunju M. A.: `Introduction to University Mathematics Vol. II' 1988, pp – 119, Magbagbeda, **Nigeria** ISBN 978 – 31635 – 1-5

3(a) **Published Articles:**

1. A. Ademola, P. Arawomo, O. Adesina and **S. S. Okoya**; On the behaviour of solutions to a kind of third order nonlinear neutral differential equation with delay, *Turkish Journal of Mathematics*, doi:10.55730/1300-0098.mat-2112-3 (2022) (**TURKEY**)
2. S. I. Opadiran and **S. S. Okoya**;
Influence of non-linear radiation and viscous dissipation on the convective fluid flow with variable viscosity and quadratic Boussinesq approximation across a cylinder with uniform heat flux at the wall. **Defect and Diffusion Forum** 419, 37-56 (2022)
3. E. O Fatunmbi, A. T Adeosun and **S. S Okoya**; Entropy generation analysis in an unsteady hydromagnetic micropolar fluid flow along an exponentially stretchable sheet with slip properties, **International Journal of Modelling and Simulation**
<https://doi.org/10.1080/02286203.2022.2094645> (2022) (**UK**) **Taylor and Francis**
4. **S. S. Okoya** and F. B. Adebawale; On the critical temperature and transitional values of a combustible mixture in different modes of heat transfer, **International Journal of Scientific and Engineering Research**, 13 (4) 235 - 251 (2022) (**USA**)
5. S. O. Salawu and **S. S. Okoya**;
On criticality for a branched-chain thermal reactive-diffusion in a cylinder. **Combustion Science and Technology**. 194 (9) 1815-1829 (2022) (**USA**) **Taylor and Francis**
6. S. O. Salawu, E.O. Fatunmbi and **S. S. Okoya**; MHD heat and mass transport of Maxwell Arrhenius kinetic nanofluid flow over stretching surface with nonlinear variable properties, **Results in Chemistry**, 3 (4) 100-125 (2021), doi:
<https://doi.org/10.1016/j.rechem.2021.100125> (**USA**) **Elsevier**

7. S. I. Opadiran and **S. S. Okoya**; Combined effect of fluid's viscous dissipation, variable viscosity and thermal conductivity on the free convective heat transfer past a circular cylinder. **Journal of the Nigerian Mathematical Society**, 40 (3) 321-337 (2021) (**NIGERIA**)
8. E. O. Fatunmbi and **S. S. Okoya**; Electromagnetohydrodynamic Micropolar-Casson Fluid Boundary Layer Flow and Heat Transfer over a Stretching Material Featuring Temperature-Based Thermophysical Properties in a Porous Medium. **Journal of the Nigerian Mathematical Society**, 40 (3) 245-268 (2021) (**NIGERIA**)
9. S. I. Opadiran and **S. S. Okoya**; Importance of convective boundary layer flows with inhomogeneous material properties under linear and quadratic boussinesq approximations around a horizontal cylinder, **Heliyon**, 7 (13 pp.) (2021) e07074 **Elsevier Publisher**
10. A. Adeniyani, F. Mabood and **S. S. Okoya**; Effect of heat radiating and generating second-grade mixed convection flow over a vertical slender cylinder with variable physical properties. **International Communications in Heat and Mass Transfer**, 121 (2) 105-110 (2021) (**USA**) **Elsevier**
11. **S. S. Okoya**, A. R. Hassan and S. O. Salawu; On free convection flow of a moving vertical permeable plate with quadratic Boussinesq approximation and variable thermal conductivity. **Heat Transfer Research**, 52 (7): 55 – 66 (2021). Begell House
12. E. O. Fatunmbi and **S. S. Okoya**; Quadratic mixed convection stagnation point flow in hydromagnetic Casson nanofluid over a nonlinear stretching sheet with variable thermal conductivity. **Defect and Diffusion Forum**, 409, 95-109, 2021 (**SWITZERLAND**)
13. I. E. Ireka and **S. S. Okoya**; Analysis of unsteady flow of second grade fluid with power law spatially distributed viscosity, **Afrika Matematika**, 31, 1175–1191, 2020 (**SOUTH AFRICA**) **Springer**
14. E. O. Fatunmbi and **S. S. Okoya**; Heat transfer in boundary layer magneto-micropolar fluids with temperature-dependent material properties over a stretching sheet. **Advances in Materials Science and Engineering**. Volume 2020, Article ID 5734979, 11 pages, 2020 (**USA**) **Hindawi**
15. E. O. Fatunmbi, **S. S. Okoya**, O. D. Makinde; Convective heat transfer analysis of hydromagnetic Micropolar fluid flow past an inclined nonlinear stretching sheet with variable thermo-physical properties. **Diffusion Foundations**, 26, 63 - 77, 2020 (**SWITZERLAND**)
16. O. J. Jayeoba and **S. S. Okoya**; Analytical solutions for the flow of a reactive third-grade fluid with temperature dependent viscosity models in a pipe. **Journal of the Nigeria Mathematical Society**, 38 (2) 293 - 313, 2019 (**NIGERIA**)
17. **S. S. Okoya**; Computational study of thermal influence in axial annular flow of a reactive third grade fluid with non-linear viscosity. **Alexandria Engineering Journal**, 58 (1) 401 – 411, 2019 (**EGYPT**) **Elsevier Publisher**

18. H. Ogunseye and **S. S. Okoya**; Criticality and thermal explosion in the flow of reactive viscous third grade fluid flow in a cylindrical pipe with surface cooling, **Journal of the Nigeria Mathematical Society**, 36 (2) 399 - 418, 2017 (**NIGERIA**)
19. **S. S. Okoya**; Flow, thermal criticality and transition of a reactive third-grade fluid in a pipe with Reynolds' model viscosity, **Journal of Hydrodynamics**, Ser. B, 28 (1) 84 – 94, 2016 (**CHINA**). **Elsevier Publisher**
20. T. E. Akinbobola and **S. S. Okoya**; The Flow of Second Grade Fluid over a Stretching Sheet with Variable Thermal Conductivity and Viscosity in the Presence of Heat Source/Sink, **Journal of the Nigeria Mathematical Society**, 34 (3) 331 – 342, 2015 (**NIGERIA**) **Elsevier Publisher**
21. **S. S. Okoya**; Criticality and disappearance of criticality for a branched-chain thermal reaction with distributed temperature. **Afrika Mathematika**, 24 (4) 465 – 476, 2013 (**S./A.**) **Springer Publisher**
22. O. M. Ogunmilade and **S. S. Okoya**: Solutions in closed-form for unsteady unidirectional flow of a Maxwell fluid, **Journal of the Nigeria Mathematical Society**, 32, 97 - 108, 2013, (**NIGERIA**)
23. O. J. Jayeoba and **S. S. Okoya**; Approximate analytical solutions for pipe flow of a third grade fluid with variable models of viscosities and heat generation/ absorption, **Journal of the Nigeria Mathematical Society**, 31, 207 – 227, 2012. (**NIGERIA**)
24. **S. S. Okoya**; Disappearance of criticality in thermal explosion for reactive third - grade fluid with Reynold's model viscosity in a flat channel, **International Journal of Non – Linear Mechanics**, 46 (9), 1110 – 1115, 2011. (**U.S.A.**) **Elsevier Publisher**
25. **S. S. Okoya**, I. E. Ireka, and A. A. Aderogba; On closed – form solutions of a linear parabolic problem with convection, **Journal of the Nigerian Mathematical Society**, 29, 143 – 153, 2010. (**NIGERIA**)
26. **S. S. Okoya**; Ignition Times for a Branched – Chain Thermal Explosion Chemistry with Heat Loss, **Toxicology and Environmental Chemistry**, 91 (5), 905 – 910, 2009. (**U.K.**) **Taylor & Francis Publisher**
27. **S. S. Okoya**; On the transition for a generalized Couette flow of a reactive third - grade fluid with viscous dissipation. **International Communications in Heat and Mass Transfer**, 35 (2), 188 – 196, 2008. (**U.S.A.**) **Elsevier Publisher**
28. **S. S. Okoya**; Criticality effects on non - Newtonian fluids with viscous heating and thermal conductivity in cylindrical enclosure. **Journal of Nigerian Mathematical Society**, 26, 1 – 10, 2007. (**NIGERIA**)

29. **S. S. Okoya**; Criticality and transition for a steady reactive Plane Couette flow of a viscous fluid. **Mechanics Research Communications**, 34 (2), 130 – 135, 2007. (U.S.A.) **Elsevier Publisher**
30. **S. S. Okoya**; Ignition and transition conditions in the theory of combustion. **Ife Journal of Science**, 9 (1), 51 - 54, 2007. (NIGERIA)
31. **S. S. Okoya**; Disappearance of criticality in a branched - chain thermal explosion with heat loss. **Combustion and Flame**, 144 (1-2), 410 – 414, 2006. (U.K.) **Elsevier Publisher**
32. **S. S. Okoya**; Thermal stability for a reactive viscous flow in a slab. **Mechanics Research Communications**, 33 (5), 728 – 733, 2006. (U.S.A.) **Elsevier Publisher**
33. S. O. Ajadi and **S. S. Okoya**; The effect of variable pre - exponential factor on the Ignition time of a homogeneous system. **International Communications in Heat and Mass Transfer**, 31 (1), 143 – 150, 2004. (U.S.A.) **Pergamon Publisher**
34. **S. S. Okoya**; Reactive - Diffusive equation with variable pre - exponential factor. **Mechanics Research Communications**, 31 (2), 263 – 267, 2004. (U.S.A.) **Elsevier Publisher**
35. **S. S. Okoya**, S. O. Ajadi and A. B. Kolawole; Thermal runaway for a reaction - diffusion equation. **International Communications in Heat and Mass Transfer**, 30 (6), 845 – 850, 2003. (U.S.A.) **Pergamon Publisher**
36. R. O. Ayeni, A. M. Okedoye, K. S. Adegbeie and **S. S. Okoya**; Effect of heat loss on Ignition times in the theory of branched - chain explosions. **Journal of the Mathematical Association of Nigeria**, 30 (2A), 52 – 57, 2003. (NIGERIA)
37. **S. S. Okoya**; On the behaviour of solution to a system of ordinary differential equation modelling branched chain reaction. **International Communications in Heat and Mass Transfer**, 29 (8), 1169 – 1176, 2002. (U.S.A.) **Pergamon Publisher**
38. **S. S. Okoya**; On the exact solutions for nonlinear diffusion with source term. **Indian Journal of Pure and Applied Mathematics**, 33 (11), 1625 – 1634, 2002. (INDIA) **Indian National Science Academy Press**
39. **S. S. Okoya**; Branched - chain explosion time and slow temperature rise for homogeneous reactive system. **International Communications in Heat and Mass Transfer**, 28 (7), 995 – 1004, 2001. (U.S.A.) **Pergamon Publisher**
40. **S. S. Okoya**; Similarity temperature profiles for some nonlinear reaction - diffusion equations. **Mechanics Research Communications**, 28 (4), 477 – 484, 2001. (U.S.A.) **Pergamon Publisher**

41. **S. S. Okoya**; On closed - form solutions of some nonlinear partial differential equations. **International Journal of Mathematics and Mathematical Sciences**, 23 (2), 81 – 88, 2000. (U.S.A.) **Hindawi Publisher**
 42. **S. S. Okoya**; Temperature distributions for a semilinear reaction - diffusion equation. **International Communications in Heat and Mass Transfer**, 27 (6), 835 – 843, 2000. (U.S.A.) **Pergamon Publisher**
 43. **S. S. Okoya** and S. O Ajadi; Critical parameter for thermal conduction equations. **Mechanics Research Communications**, 26 (3), 363 – 370, 1999. (U.S.A.) **Pergamon Publisher**
 44. **S. S. Okoya**; On the qualitative theory of a reaction-diffusion system on bounded domains. **Indian Journal of Pure and Applied Mathematics**, 28 (2), 257 – 265, 1997. (INDIA) **Indian National Science Academy Press**
 45. **S. S. Okoya**; Some exact solutions of a model nonlinear reaction-diffusion equation. **International Communications in Heat and Mass Transfer**, 23 (7), 1043 – 1052, 1996. (U.S.A.) **Pergamon Publisher**
 46. **S. S. Okoya**; Boundedness for a system of reaction- diffusion equations I. **Mathematika**, 41, 293 – 300, 1994. (U.K.) **University College London Press**
 47. **S. S. Okoya** and R. O. Ayeni; On the decay and boundedness results for reactions with chain branching and chain breaking kinetics. **Journal of the Nigerian Mathematical Society**, 13, 33 – 35, 1994. (NIGERIA)
 48. R. O. Ayeni, C. J. Agorzie, **S. S. Okoya**, K. O. Ogunmoyela and I. O. Ayomidele; The effect of slip velocity field of blood flowing in the microcirculation. **International Communication in Heat and Mass Transfer**, 17 (4), 511 – 520, 1990. (U.S.A.) **Pergamon Publisher**
 49. R. O. Ayeni, **S. S. Okoya**, S. A Sanni and I. O. Ajibola; On the flow of petroleum oil through pipes. **Nigerian Journal on Mathematics and Applications**, 1, 14 – 18, 1988. (NIGERIA)
 50. R. O. Ayeni, **S. S. Okoya** and C. J. Agorzie; On the dissipation layer of radial bearings. **International Journal of Mathematics and Mathematical Sciences**, 11 (2), 403 – 404, 1988. (U.S.A.)
 51. R. O. Ayeni and **S. S. Okoya**; On the skin friction of an unsteady free convection flow past an oscillating vertical porous plate. **Afrika Mathematika**, 1 (2), 101 – 107, 1988. (NIGERIA)
- 3 (b) **Refereed Learned Conference:**
52. **S. S. Okoya**; Flows of a fluid with viscous heating and variable thermal conductivity between two walls. *Appreciating the Future in Mathematics; Proceedings of the International Conference in Mathematics* held at Obafemi Awolowo University, Nigeria, December 15, 2005 pp. 5 - 10. (Edited by Prof. Y. A. S. Aregbesola and Dr. O. A. Adesina). Akin's Printing Press, Ile-Ife, ISSB 1597 – 9024, 2006. (NIGERIA)

53. S. O. Ajadi and **S. S. Okoya**; The role of some thermophysical properties on flame propagation characteristics. *Appreciating the Future in Mathematics: Proceedings of the International Conference in Mathematics* held at Obafemi Awolowo University, **Nigeria**, December 15, 2005, pp 24 - 28. (Edited by Prof. Y. A. S. Aregbesola and Dr. O. A. Adesina). Akin's Printing Press, Ile-Ife, ISSB 1597 – 9024, 2006. (**NIGERIA**)
54. **S. S. Okoya**; Travelling wave solutions for a model diffusion - reaction - equation. *Appreciating Mathematics in Contemporary World: Proceedings of the International Conference in Mathematics* held at Obafemi Awolowo University, **Nigeria**, December 15, 2004, pp 81 - 86, (Edited by Prof. A. U. Afuwape and Sola Adeyemi). Akin's Printing Press, Ile-Ife, ISSB 1597 – 9024, 2005. (**NIGERIA**)
55. **S. S. Okoya**; On the thermal explosion time for a spatially homogeneous reaction. **Proceeding of the International Conference on Direction in Mathematics**, University of Ibadan, **Nigeria**, pp 169 - 176, (Edited by Prof. G. O. S. Ekhaguere, Dr. (Mrs) O. O. Ugbebor) Associated Book Makers Nigeria Limited, Nigeria. ISBN: 978 – 34532 – 6 – 2, 1999. (**NIGERIA**)
56. R. O. Ayeni and **S. S. Okoya**; Influence of pressure dependent viscosity on the temperature of lubricating oils. *Computational mathematics. II. Proceedings of the Second International Conference on Numerical Analysis and its Applications* held in Benin City, January 27--31, 1986; pp 127 – 130. Edited by Simeon Ola Fatunla. Boole Press Conference Series, 11. Boole Press, Dún Laoghaire, Dublin, **Ireland**, 1987. (**U.K.**). xviii+221 pp. ISBN: 0-906783-69-0; 0-906783-70-4 65-06 (00A11)

3(c) **Articles accepted for publication:**

57. E. O. Fatunmbi, O. O. Akanbi and **S. S. Okoya**;
Dynamics of Heat Transfer in Magneto-Micropolar Fluids Flow Past a Vertically Expanding Sheet Featuring Prescribed Wall Temperature (PWT). **Computational Fluid Dynamics and Mathematical Modeling** (2022)

3(d) **Articles Submitted for Publication:**

1. **S. S. Okoya** and I. E. Ireka;
Exact solution for some unsteady second grade fluid flows with variable coefficients viscosity and elasticity
2. **S. S. Okoya**;
Analysis of critical parameters for branched-chain thermal explosion between parallel plates.
3. I. Animasaun , **S. S. Okoya** et al. ;
Dynamics of water-based ternary-hybrid nanofluid: Significance of haphazard motion and thermo-migration of different nanoparticles shapes

4. S. O. Salawu and **S. S. Okoya**; Temperature distribution and thermal criticality of kinetics exothermic reactant in concentric cylinders subject to various boundary conditions.

F. PROFESSIONAL ACCOMPLISHMENT:

- (i) Review Professorial Chair for National Research Foundation, **South African**, 2018
- (ii) Review articles for the Journal of Boundary Value Problem, **Springer Publisher, USA**, 2015 – date
- (ii) Editor – in – Chief, Journal of the Nigerian Mathematical Society, 2011 - date
- (ii) Review articles for the Zeitschrift für Naturforschung A – Physical Sciences Tübingen 2013 - date
- (iii) Review papers for the Journal of Energetic Materials, **Taylor and Francis, USA**, 2010 – date,
- (iv) Review papers for the International Journal of Computational Mathematics and Numerical Simulation (IJCMNS), **China**, 2009 – date,
- (v) Review papers for the Journal of the Nigerian Mathematical Society, 2011 - date
- (v) Review papers for 3 other local journals,
- (vi) As a teacher, I have taught Mathematical courses at the undergraduate level for about 34+ years and at the postgraduate level for about 23 years,
- (vii) Through research efforts, most of which were initiated by me, I have published many papers in International Journals in the broad field of combustion,
- (viii) Became the first fully bred alumnus to attain the position of Professor and Head of Mathematics Department, Obafemi Awolowo University, Ile – Ife, in 2008.

G. CONFERENCES, SEMINARS AND WORKSHOPS ATTENDED WITH DATES:

1. International Congress of Mathematicians, Helsinki, **FINLAND**, 6th – 14th July 2022. *Virtual contact*
2. 2nd International Conference of Faculty of Natural Sciences, Ajayi Crowther University, Oyo, **NIGERIA**, on 4th - 6th April, 2022.
3. Conference for the 30th anniversary of the International Centre for Theoretical Physics (ICTP) Diploma Programme, Trieste, **ITALY**, 23rd – 25th August, 2021. *Virtual contact*
4. 2021 Faculty of Science Annual International Conference at Obafemi Awolowo University, Ile – Ife, **NIGERIA**, 8th & 9th June, 2021. *Hybrid of both physical and virtual contact*
5. 39th Annual Conference of the Nigerian Mathematical Society (NMS), Redeemers' University, Ede, **NIGERIA**, 20th – 24th April, 2021. *Hybrid of both physical and virtual contact*
6. International Conference on Contemporary Development in Mathematical Sciences (iccdms) in honour of Prof. Kayode Rufus Adeboye, Federal University of Technology, Minna, **NIGERIA**, 13th April, 2021. *Hybrid of both physical and virtual contact*
7. 30th Annual Congress and colloquium of the Nigerian Association of Mathematical Physics (**NAMP**) held at Igbenidion University, Okada, **NIGERIA**, 5th – 10th November, 2019.

8. The Maiden International Conference of the College of Physical Sciences, Federal University of Agriculture, Abeokuta, **NIGERIA**, 27th – 30st August, 2019
9. 38th Annual Conference of the Nigerian Mathematical Society (NMS), University of Nigeria, Nsukka, **NIGERIA**, 18th – 21st June, 2019.
10. 29th Annual Congress and colloquium of the Nigerian Association of Mathematical Physics (**NAMP**) held at Landmark University, Omu-Aran, **NIGERIA**, 6th – 9th November, 2018
11. 2018 Faculty of Science Annual International Conference at Obafemi Awolowo University, Ile – Ife, **NIGERIA**, 1st – 5th October, 2018.
12. 37th Annual Conference of the Nigerian Mathematical Society (NMS), Bayero University, Kano, **NIGERIA**, 7th – 10th May, 2018.
13. One day seminar organized by the Doctoral School in Environmental Sciences and Industrial Fluid Mechanics, University of Trieste, Italy. Theme: Environmental and Industrial Researches, 30th May, 2017 at Trieste, Via A. Valero 12/1, Building H2bis, 2nd floor, Morin Lecture Hall, University of Trieste, **ITALY**.
14. International Conference on Mathematics and Engineering (ICOME-2017), Yildiz Technical University, Istanbul, **TURKEY**, 10th – 12th, May, 2017.
15. 35th Annual Conference of the Southern Africa Mathematical Sciences Association (SAMSA), University of Pretoria, Pretoria, **SOUTH AFRICA**, 21st -24th November, 2016.
16. 2016 Faculty of Science Annual International Conference at Obafemi Awolowo University, Ile – Ife, **NIGERIA**, 3rd – 7th October, 2016.
17. 35th Annual Conference of the Nigerian Mathematical Society (NMS), University of Technology, Minna, **NIGERIA**, 3rd – 6th May, 2016.
18. 34th Annual Conference of the Southern Africa Mathematical Sciences Association (SAMSA), University of Namibia, Windhoek, **NAMIBIA**, 23rd -27th November, 2015.
19. 34th Annual Conference of the Nigerian Mathematical Society (NMS), University of Lagos, Akoka, Yaba, **NIGERIA**, 23rd – 26th June, 2015.
20. 2nd Annual International Conference on Mathematical Analysis and Optimization: Theory and Applications (ICAPTA), University of Lagos, Akoka, Yaba, Lagos, **NIGERIA**, 23rd – 25th March, 2015.
21. A two –day International Conference in honour of a Distinguished Scholar Professor S. A. Ilori on his 70th birthday anniversary, University of Ibadan, Ibadan, **NIGERIA**, 12th – 13th January, 2015.

22. 2014 Faculty of Science Annual International Conference at Obafemi Awolowo University, Ile – Ife, **NIGERIA**, 8th – 10th October, 2014.
23. 33rd Annual Conference of the Nigerian Mathematical Society (NMS), African University of Science and Technology, Abuja, **NIGERIA**, 28th – 31th May, 2014.
24. National conference in honour of Professor A. R. T. Solarin, the Director of the National Mathematical Centre to commemorate his 60th birthday, National Mathematical Centre, Abuja **NIGERIA**, 8th - 11th April, 2014.
25. 1st Annual International Conference on Mathematical Analysis and Optimization: Theory and Applications (ICAPTA), University of Lagos, Akoka, Yaba, Lagos, **NIGERIA**, 12th – 14th March, 2014.
26. 8th Pan African Congress of Mathematicians (PACOM) held at National Mathematical Centre, Abuja, **NIGERIA**, 30th June – 8th July, 2013.
27. 32nd Annual Conference of the Nigerian Mathematical Society, Obafemi Awolowo University, Ile - Ife, **NIGERIA**, June 25th – 28th, 2013.
28. Conference organised by the Faculty of Science, Obafemi Awolowo University, Ile - Ife, **NIGERIA**, October 14th – 15th, 2012.
29. 31st Annual Conference of the Nigerian Mathematical Society, Ahmadu Bello University, Zaria, **NIGERIA**, October 2nd – 5th, 2012.
30. 30th Annual Conference of the Nigerian Mathematical Society, Federal University of Technique, Minna, **NIGERIA**, July 19th – 22nd, 2011.
31. 29th Annual Conference of the Nigerian Mathematical Society, Lagos State University, Ojoo, Lagos, **NIGERIA**, July 20th – 23rd, 2010.
32. Workshop on transport and mixing in complex and turbulent flows, Institutes for Mathematics and Its Applications, University of Minnesota, Minneapolis, **USA**, April 11th – 16th, 2010.
33. Workshop on career options for underrepresented groups in Mathematical Sciences, Institutes for Mathematics and Its Applications, University of Minnesota, Minneapolis, **USA**, March 25th – 27th, 2010.
34. Workshop on Analysis and Computation of Incompressible Fluid Flow, Institutes for Mathematics and Its Applications, University of Minnesota, Minneapolis, **USA**, February 21st – 26th, 2010.

35. 1st Annual International Conference of Chemical Society of Nigeria, Obafemi Awolowo University, Ile - Ife, **NIGERIA**, July 2008.
36. 27th Annual Conference of the Nigerian Mathematical Society, University of Port Harcourt, Port Harcourt, **NIGERIA**, May 27th – 30th, 2008.
37. Conference organised by the Faculty of Science, Obafemi Awolowo University, Ile - Ife, **NIGERIA**, July 2007.
38. 26th Annual Conference of the Nigerian Mathematical Society, Federal University of Technology, Akure, **NIGERIA**, May 15th – 19th, 2007.
39. School and Conference on Complex Systems and Nonextensive Statistical Mechanics, Abdus Salam ICTP, Trieste, **ITALY**, July 31st – August 8th, 2006.
34. The International Symposium on Trends in Applications of Mathematics to Mechanics, Vienna University of Technology, Vienna, **AUSTRIA**, July 10th – 14th, 2006.
35. 25th Annual conference of the Nigerian Mathematical Society, University of Uyo, Uyo, Akwa - Ibom, **NIGERIA**, April 2006.
36. International Conference on Appreciating the Future in Mathematics in honour of Prof. E. A. Akinrele, Obafemi Awolowo University, Ile - Ife, **NIGERIA**, December 2005.
37. 4th Symposium on Pan African Mathematics Olympiads, University of Agriculture, Abeokuta, **NIGERIA**, April 2005.
38. 24th Annual conference of the Nigerian Mathematical Society, Olabisi Onabanjo University, Ago - Iwoye, **NIGERIA**, April 2005.
39. International Conference on Appreciating Mathematics in the Contemporary World in honour of Prof. E. O. Oshobi and Dr. J. O. Amao, Obafemi Awolowo University, Ile - Ife, **NIGERIA**, December 2004.
40. 1st International Conference on Science and National Development, University of Agriculture, Abeokuta, **NIGERIA**. August 2004.
41. International Conference of Mathematical Sciences and African Mathematical Union, University of Agriculture, Abeokuta, **NIGERIA**, November 16th – 22nd, 2003.
42. Microfluidics: History, Theory and Applications: CISM, Udine, **ITALY**, September 1st – 5th, 2003.
43. ICTP - INFM Summer School on Transport, Reaction and Propagation of fluids followed by Conference on Kolmogorov's Legacy in Physics: one century of Chaos, turbulence and complexity. Abdus Salam ICTP, Trieste, **ITALY**, September 8th – 17th, 2003.

44. 22nd Annual Conference of the Nigerian Mathematical Society, Ladoko Akintola University of Technology, Ogbomoso, **NIGERIA**, June 10th – 13th, 2003.
45. School and Conference on spatiotemporal chaos, ICTP, Trieste, **ITALY**, July 8th – 26th, 2002.
46. School on Phase change with convection: modelling and validation, CISM, Udine, **ITALY**, September 2nd – 6th, 2002.
47. School on modelling and control of two phase flow phenomena, CISM, Udine, **ITALY**, September 9th – 13th, 2002.
48. Second ICTP Conference on detection and modelling of regional climate change, ICTP, Trieste, **ITALY**, September 30th - October 4th, 2002.
49. 21st Annual Conference of the Nigerian Mathematical Society, Federal University of Technology, Yola, **NIGERIA**, April 16th – 19th, 2002
50. Conference on Continuum Mechanics held under the auspices of National Mathematical Centre, Abuja, **NIGERIA**, August 24th – 25th, 2001
51. 19th Annual Conference of the Nigerian Mathematical Society, University of Jos, Jos, **NIGERIA**, May 31st – June 3rd, 2000
52. 17th Annual Conference of the Nigerian Mathematical Society, University of Calabar, Calabar, **NIGERIA**, December 2nd – 4th, 1998
53. International Congress of Mathematicians, Berlin, **GERMANY**, August 18th – 28th, 1998
54. Memorial Conference in honor of Professor R. F. A. Abiodun, University of Agriculture, Abeokuta, **NIGERIA**, May 21st – 23rd, 1998
55. Seminar meeting, Institute of Mathematical Sciences, Madras, **INDIA**, November 10th – 12th, 1997
56. Conference on 50 years of Indian Mathematics, Institute of Mathematical Sciences, Madras, **INDIA**, November 4th – 6th, 1997
57. International conference in honor of Professor H. O. Tejumola, University of Ibadan, Ibadan, **NIGERIA**, July 10th – 11th, 1997
58. Fatunla International Conference on Scientific Computing, Benin, **NIGERIA**, January 22nd – February 1st, 1996
59. 6th Annual Conference of Nigeria Mathematical Society, Ile - Ife, **NIGERIA**, April 19th – 22nd, 1995

60. International Congress of Mathematicians, Zurich, **SWITZERLAND**, August 3rd – 12th, 1994
61. Workshop on Fluid Mechanics, ICTP, Trieste, **ITALY**, March 7th – 25th, 1994
62. African Mathematical Union Symposium, Ibadan, **NIGERIA**, January 11th – 15th, 1994
63. 6th International Conference on Scientific Computing, Benin, **NIGERIA**, January 24th – 28th, 1994
64. African Mathematical Union Symposium, Porto - Novo, **REPUBLIC OF BENIN**, January 11th – 15th, 1993
65. 14th Annual Conference of Nigerian Mathematical Society, Nsukka, **NIGERIA**, April 14th – 17th, 1993
66. Workshop on Qualitative Aspects and Applications of Nonlinear Evolution Equations, ICTP, Trieste, **ITALY**, May 3rd – 14th, 1993
67. Conference on the kinetics of Phase Transition, ICMS, Edinburgh, **U. K.**, August 10th -14th, 1992
68. Conference on the Quality Management, Quality Control Society on Nigeria, Ile - Ife, **NIGERIA**, September 22nd – 25th, 1991
69. 10th Annual Conference of Nigerian Mathematical Society, Ibadan, **NIGERIA**, April 5th – 8th, 1989
70. 3rd International Conference on Computational Mathematics, Benin, **NIGERIA**, January 25th - 29th 1988
71. 24th Annual Conference of Mathematical Association of Nigeria, Ilorin, **NIGERIA**, September 2nd – 6th, 1988
72. CIMPA Autumn School, Ile - Ife, **NIGERIA**, 1985
73. 6th Annual Conference of Nigerian Mathematical Society, Ile - Ife, **NIGERIA**, April 17th – 20th 1985

H. CURRENT RESEARCH ACTIVITIES:

- (1) Mathematical modeling of combustion theory
- (2) Qualitative properties, exact and (self) similarity solutions of systems of reaction – diffusion equations
- (3) Numerical or/ and analytical solutions of non – Newtonian fluid and heat transfer with or without reactant consumption

- (4) Numerical simulation of Magneto-Micropolar Fluids

I. CURRENT RELEVANT INFORMATION:

1. Services within the Department/Institute:

- (i) Secretary, Local Organising Committee, Quality Control Society of Nigeria, 1991
- (ii) Secretary, Local Organising Committee, Nigerian Mathematical Society, 1995
- (iii) Member, Departmental Finance Committee 1997 till date
- (iv) Secretary, Departmental Review Panel and Board of Examiners 1990 -1992
- (v) Attend and participate at the Department Review Board and Board of examiners 1984 - date
- (vi) Administrative duties as assigned by the Head of Mathematics, 1984 – July 2008, August 2011 - date
- (vii) Head, Department of Mathematics, August 2008 – July 2011
- (viii) Administrative duties as assigned by the Head of Mathematics, August 2011 – to date
- (ix) Staff Adviser, Nigerian Association of Mathematical Sciences Students of Nigeria, OAU chapter, 2011- 2019
- (x) Patron, Nigerian Association of Mathematical Science Student of Nigeria, OAU chapter, 2019 - date

2. Services within the Faculty:

- (i) Member, Faculty Board of Technology, 2001/2002, 2002/2003 sessions
- (ii) Member, Faculty of Science Selection Panel, 2001/2002 session, 2008/2009 to date
- (iii) Faculty of Science Research Committee, 2001/2002 session
- (iv) Member: Faculty Board of Education 1993/94, 94/95 session
- (v) Member: Faculty Board of Agriculture 1995/96, 96/97 session Member:
- (vi) Faculty of Science Review Panel 1996/97, 97/98 session
- (vii) Representative of the Dean of Science on the University Committee on Relationship with Overseas Institution - 2008 - 2012
- (viii) Faculty of Science Review Panel, 2001/02, 2002/03, 2003/2004 session, June 2008 to date
- (ix) Chairman, Selection Committee, Dapo Afolabi Most Productive Science Scholar of the Year Award 2010 - 2013
- (x) Representative of the Dean of Science on the Faculty of Dentistry Review Committee, 2011 – 2014

3. Services within the University:

- (i) Chairman, Ad Hoc Committee of the Vice-Chancellor on the activities of Mr. O. O. Ayeni of the Mechanical Section of the Division of Works and Maintenance Services, Obafemi Awolowo University, Ile – Ife March/April 2019.
- (ii) Staff Adviser, Junior Chambers International, Obafemi Awolowo University Chapter, Ile – Ife 2017/2018, 2018/2019 2019/2020. 2021/22 sessions.
- (ii) Instituted the prize for the best graduating student in MTH 417 (Fluid Dynamics I) in the (ii) Department of Mathematics (award commenced 2011/12 session).
- (iii) Vice Chairman, University Quality Assurance and Monitoring Committee, 2011-2016,
- (iv) Member, University Task Force on Accreditation of Academic programmes 2011.
- (v) Member, Post University and Tertiary Matriculation Examination (UTME) committee, 2011 – 2016.

- (vi) Elected, Search team member from Senate for a new Vice – Chancellor, Obafemi Awolowo University, 2011.
- (vii) University Quality Assurance and Management Committee, 2011 - 2013
- (viii) Nominated from the floor of senate as a member of Joint Committee of Council and Senate on Disciplinary matters, 2010 – 2013
- (ix) Member, Campus Aesthetic and Trading Regulatory Committee, 2009 – 2012
- (x) Member, Board of Enquiry on the allegation of illegal sale of bed spaces in the female hall of residence, 2010 - 2011.
- (xi) Elected as Congregational representative to Senate, 2001/2002 and 2002/2003 session and as a member of University Senate (2008 to date)
- (xi) Elected as member of Appointments and Promotions Committee from Senate 2001/2002, 2002/2003 sessions
- (xii) Examiner, Part - time degree programme, Faculty of Education, 1989 – 2000
- (xiii) Faculty Board of Science 1986/87 session to date
- (xiv) Examiner, Technology Training Scheme 1990 -1994
- (xv) Adviser, Photo Club 1990 to date

4. Services outside the University:

- (i) External Examiner for Ph.D. (Mathematics) Thesis, Department of Mathematics and Applied Mathematics, University of Cape Town, South Africa 2022 (2 candidate2)
- (ii) External Examiner, B.Sc. Mathematics degree programme at University of Ibadan, Ibadan, Nigeria 2020/2021 session.
- (iii) External Examiner, B.Tech. Mathematics degree programme at Federal University of Technology, Akure, Nigeria 2020/2021 session.
- (iv) External Examiner, B.Sc. Mathematics degree programme at University of Lagos, Lagos, Nigeria 2018/2019 session.
- (v) External Examiner for Ph.D. and M.Sc. (Applied Mathematics) Theses, Department of Mathematics, University of Nigeria, Nsukka, Nigeria - 2018; 2 and 8 candidates, respectively and 2021- 1 Ph.D. candidate
- (vi) External Examiner for M.Sc. (Mathematics) Theses, Department of Mathematics, Federal University of Technology, Minna, Nigeria, 2017 (5 candidates)
- (vii) Patron, Nigerian Association of Mathematical Sciences Students of Nigeria (NAMSSN) 2017.
- (viii) External Examiner for M.Sc. (Mathematics) Thesis, Department of Mathematics and Applied Mathematics, University of Cape Town, South Africa 2017 (1 candidate)
- (ix) External Examiner for M.Sc. (Mathematics) Thesis, Department of Mathematics, University of Ilorin, Ilorin, Nigeria 2016 (1 candidate)
- (x) External Examiner for M.Sc. (Mathematics) Theses, Department of Mathematics, Covenant University, Ota, Nigeria, 2015 (2 candidates)
- (xi) External Examiner for M.Sc. (Mathematics) Theses, Department of Mathematics, University of Port Harcourt, Port Harcourt, Nigeria, 2015 (2 candidates)
- (xii) External Examiner, B.Sc. Mathematics degree programme at Federal University of Agriculture, Abeokuta, Nigeria 2015/2016, 2016/2017, 2017/2018 session.
- (xiii) External Examiner, B.Sc. Mathematics degree programme at Bowen University, Iwo, Nigeria, 2011/2012, 2012/2013 and 2013/2014

- (xiv) External Examiner, B.Sc. Mathematics degree programme at Redeemers' University of Nigeria, Redemption Camp, Nigeria 2012/2013, 2013/2014 and 2014/2015
- (xv) External Examiner, B.Sc. Mathematics degree programme at Ekiti State University, Ado – Ekiti, Nigeria, 2010/2011, 2011/2012 sessions
- (xvi) External Examiner for M.Sc. (Mathematics) Theses, Department of Mathematics, Federal University of Technology, Minna, Nigeria, 2013 (5 candidates)
- (xvii) External Examiner for Ph. D. and M.Sc. (Applied Mathematics) Theses, Department of Mathematics, University of Nigeria, Nsukka, Nigeria, 2010 - 2012 (1 and 8 candidates, respectively),
- (xviii) External Examiner for M.Sc. (Applied Mathematics) Theses, Department of Mathematics, Ahmadu Bello University, Zaria, Nigeria, 2010 (1 candidate),
- (xix) External Examiner for Ph. D. and M.Sc. (Applied Mathematics) Theses, Department of Pure and Applied Mathematics, Ladoke Akintola University of Technology, Ogbomoso, Nigeria, 2007 – 2012 (5 and 3 candidates, respectively),
- (xx) External Examiner for M.Sc. (Applied Mathematics) Theses, Department of Mathematical Sciences, Olabisi Onabanjo University, Ago - Iwoye, Nigeria, 2007 (3 candidates),
- (xxi) Treasurer, Nigerian Mathematical Society of Nigeria, NIGERIA 2006 - 2011,
- (xxii) External Examiner for Ph.D. and M. Sc. theses, Department of Mathematics, University of Agriculture, Abeokuta, NIGERIA (1 and 1 candidate, respectively)
- (xxii) Coordinator, Department of Industrial Mathematics, Adekunle Ajasin University, Akungba, NIGERIA, for National Universities Accreditation of Undergraduate Programmes, 2005,
- (xxiv) External Examiner, Ph.D. theses, Department of Mathematical Sciences, Federal University of Technology, Akure, NIGERIA (2 candidates),
- (xv) External Examiner, B. Sc. Mathematics Degree Programme at Adeyemi College of Education, Ondo, NIGERIA,
- (xxvi) Supervisor, Joint Admission and Matriculation Board (JAMB), NIGERIA 1997 - Date
- (xxvii) Examiner and Project Supervisor, Correspondence and Open Studies Institute, University of Lagos, Lagos, NIGERIA, 1990 - 1995
- (xxviii) Lecturer, Ladoke Akintola University of Technology, Ogbomoso, NIGERIA, 1st July 1992 – 30th June 1993 (Sabbatical Leave). Two articles were published at Indian J. Pure Appl. Math. 2002 and Int. J. Math & Math. Sci (2000).

5. Other Relevant Information:

(a) Hobbies:

My interests include music, indoor games, table tennis, reading, traveling.

(b) Community Services:

(i) The initiator of the 3rd in the series of Send forth and New Year get - together as well as Documentary for 4 retirees at Mathematics Department, OAU with staff and vendors as medium, pp 1- 26, 2009

(ii) Coordinating Editor, Documentary for Professor R. O. Ayeni on 30 years of academic excellence and 60th birthday celebration pp 1 - 24, 2008 as well as initiator of gift with Doctoral and Graduate of the celebrant as medium, pp 1 - 2008

(iii) Christian Literature Titled ‘How It should Be’ by Okoya S. S. and Okoya A. A. pp. 1 – 71, 2000, First consultancy services, **NIGERIA**, ISBN 978-047-317-3

(iv) I instituted an undergraduate course prize called “**The Professor Samuel Segun Okoya Prize**” and awarded to the best graduating student in MTH 417 – Fluid Dynamics I on the condition that the class of degree is not less than the Second Class Upper Division (2:1) with a minimum score of 60%. The award had since commenced in 2011/2012 academic session.

(v) I instituted a postgraduate course prize “**First occupier of Pastor E. A. Adeboye Chair/ Professor Samuel Segun Okoya Prize**” in the Department of Mathematics, University of Lagos and awarded to the postgraduate student with the best average score in Differential Equations I and II (MAT 813 & MAT 814). The award was first listed in 2018 convocation brochure. The Nation Newspaper titled “**Don honours Adeboye with Maths prize**” on Thursday April 11, 2019 page 20 and The Vanguard Newspaper titled “**Adeboye, Okoya prize to stimulate Industrial revolution – Prof Okoya**” on Thursday May 2, 2019 page 38.

(c) Invited Talks:

- i. **A Mathematical Look At Steady-State Branched-Chain Thermal Reaction For The Hydrogen-Oxygen System.** Invited talk at the International Conference on Mathematics and Engineering (ICOME-2017) at the Yildiz Technical University, Istanbul, **TURKEY**, May, 2017.
- ii. **Thermal explosion for reactive viscous third-grade fluid flow in a pipe with surface cooling.** Invited talk at the Southern Africa Mathematical Sciences Association (SAMSA) conference at the University of Pretoria, Pretoria, **SOUTH AFRICA**, November, 2016
- iii. **Mathematical study of a reactive third grade fluid in a pipe with variable model viscosity.** Invited talk at the Southern Africa Mathematical Sciences Association (SAMSA) conference at the University of Namibia, Windhoek, **NAMIBIA**, November, 2015.
- iv. **Modeling as a tool for sustainable development.** Plenary talk at the 2014 Faculty of Science Annual International Conference at Obafemi Awolowo University, Ile – Ife, **NIGERIA**, October, 2014.
- v. **Research on thermal explosion.** Invited talk delivered at the 1 – day conference in honour of Prof. A. R. T. Solarin, the Director of the National Mathematical Centre to commemorate his 60th birthday, National Mathematical Centre, Abuja **NIGERIA**, April, 2014.
- vi. **Effects of variable viscosity and viscous dissipation on the disappearance of criticality of a reactive third-grade fluid.** Poster presentation at the workshop on Analysis and Computation of Incompressible Fluid Flow, Institute for Mathematics and Its Applications, University of Minnesota, Minneapolis, **USA**, February, 2010.
- vii. **On thermal stability for channel flow of a viscous Non - Newtonian fluid.** Talk delivered at the International Symposium on Trends in Applications of Mathematics to Mechanics, Vienna University of Technology, Vienna, **Austria**, July 2006.
- viii. **Thermal stability for a reactive viscous flow in a slab.** Talk delivered at School and Conference on spatiotemporal chaos the Abdus Salam ICTP, Trieste, **Italy**, July 2002.

- ix. **Blow - up in some reaction - diffusion equations.** Talk delivered at the Institute of Mathematical Sciences, Madras, **India**, November 1999.
- x. **The critical parameters in scalar reaction - diffusion equations.** Talk delivered at the Indian Institute for Technology, Madras, **India**, September 1999.
- xi. **On the solution of a quasilinear diffusion problem.** Talk delivered at the International Congress of Mathematicians, Berlin, **Germany**, August 1998.
- xii. **Experiences with the development of micro - wave heating problems.** Institute of Mathematical Sciences, Madras, **India**, November 1997.
- xiii. **In search of closed - form solutions of some partial differential equations.** Institute of Mathematical Sciences, Madras, **India**, September 1997.
- xiv. **On the qualitative theory of a reaction - diffusion system on bounded domains.** Postal presentation at the International Congress of Mathematicians, Zurich, **Switzerland**, August 1994.
- xv. **Thermal Ignition time for two parallel reaction.** ICTP, Trieste, **Italy**, April 1994.
- xvi. **On closed - form solutions of some nonlinear partial differential equations.** ICTP, Trieste, **Italy**, May 1993.
- xvii. **On exact solutions for nonlinear diffusion with source term,** African Mathematical Union symposium, Porto - Novo, **Republic of Benin**. January, 1993.
- xviii. **Mathematical analysis of a system of reaction - diffusion equations.** ICTP, Trieste, **Italy**, November 1992.

(d) Other information:

- (i) I have successfully completed a research proposal at the International Centre for Theoretical Physics, Trieste, **ITALY**. under the Visiting Mathematician Programme. July 23rd - November 23rd 1992. Two articles emanated from the research visit; MATHEMATIKA (1994) and MRC (2004).
- (ii) I have successfully carried out a research project at the Max - Planck Institute for Mathematics in the Sciences, Leipzig, **GERMANY**, 28th August - 15th September, 1998.
- (iii) I have successfully carried out a research proposal at the Institute of Mathematical Sciences Tharamani, Madras, **INDIA**, under the Third World Academy of Sciences Associateship programme. 1997 - 2000. Two articles were published; MRC (2001), Int. Comm. Heat Mass Transfer (2000)
- (iv) The research proposal for the Regular Associateship to Abdus Salam International Centre for Theoretical Physics, Trieste, **ITALY** (2001- 2006) resulted in three articles Combustion and Flames (2006), MRC (2006) & (2007).
- (v) Visiting Professor to Abdus Salam International Centre for Theoretical Physics, Trieste, **ITALY** (2007- 2009) led to the publication of Afr. Mat. (2013), Int. J. Non-Linear Mechanics (2011) and Int. Comm. Heat Mass Transfer (2008).
- (vi) Pastor E. A. Adeboye Endowed Professorial Chair in Mathematics, University of Lagos, Nigeria (2013 - 2017) with one month Visiting Professor to Abdus Salam International Centre for Theoretical Physics, Trieste, **ITALY** (20016 & 2017) produced three articles; J. Hydrody. (2016), J. Nig. Math. Soc. (2017) and Alexandria Engng Journal (2019),

J. CONTRIBUTION TO KNOWLEDGE

Generally, my research has been on three areas of applied Mathematics, including

- i. Flow and heat transfer,
- ii. Reaction – diffusion equations and
- iii. Nonlinear ordinary and partial differential equations.

The papers of the author discussed practical problems encompassing three phases:

- a. The formulation of the practical problem in a mathematical form,
- b. The solution, exact or approximate, analytical or numerical, qualitative properties, of the problem in its mathematical form and
- c. The interpretation of the mathematical results for the original problem.

Each of the three phases receives its fair share in the author's publication as listed below. The output of some of my research has been concerned with closed–form solutions, functional–analytical and computational approaches to (system of) ordinary and partial differential equations (ODEs and PDEs, respectively). Rigorous physical arguments with extensive mathematical results provide important evidence for my research work.

My research has been able to document on thermal explosion, criticality, transitions and physical problems from fluid flows for different geometries under realistic conditions.



01/09/2022

Professor S. S. Okoya

Google scholar: <https://scholar.google.it/citations?user=IRHfeLIAAAAJ&hl=en>

Research Gate: www.researchgate.net/profile/S_Okoya

Wikipedia: https://en.m.wikipedia.org/wiki/Samuel_Segun_Okoya

Skype: samuelokoya

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MathSciNet: <https://mathscinet.ams.org/mathscinet/MRAuthorID/251900?edit=true>