

YUSUF OLATUNJI TIJANI PHD

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ORCID, Google Scholar, WoS

CURRENT POSITION	Postdoctoral Research Fellow <i>Rhodes University, Grahamstown, South Africa.</i>
ON-GOING PROJECTS	<ol style="list-style-type: none">1. Numerical prediction of branched-chain thermal system by 2D simulation in cylindrical wall with thermally isolation and conduction arc distributed periodically.2. Chebyshev pseudospectral solution for a fractional differential equation in a non-overlapping multidomain.
EDUCATION	<p>Department of Mathematics, Nelson Mandela University. Port-Elizabeth, South Africa <i>PhD in Applied Mathematics</i> 2019 - 2023</p> <ul style="list-style-type: none">• Research area: Numerical Analysis, Computational Fluid Dynamics, Mathematical Modelling, Fractional Calculus, and Machine Learning. <p>Department of Mathematics, Obafemi Awolowo University. Ile-Ife, Nigeria <i>MSc in Mathematics</i> 2015 - 2018</p> <ul style="list-style-type: none">• Research area: Computational Fluid Dynamics and Numerical Analysis. <p>Department of Mathematics, Obafemi Awolowo University. Ile-Ife, Nigeria <i>BSc in Mathematics</i> 2008 - 2013</p> <ul style="list-style-type: none">• CGPA: 79.8%, Rank: 1/35.
TEACHING EXPERIENCE	<p>Graduate Teaching <i>Department of Mathematics and Applied Mathematics, Nelson Mandela University, Gqeberha, South-Africa.</i> 05/2020 - 10/2023</p> <p>Contract Lecturer <i>Department of Mathematics and Applied Mathematics, Nelson Mandela University, Gqeberha, South-Africa.</i> 2021</p> <p>Mathematics Teacher <i>Unity Junior College, Agege, Lagos, Nigeria.</i> 02/2019 - 02/2020</p> <p>Mathematics Tutor <i>Department of Mathematics, Obafemi Awolowo University, Nigeria.</i> 05/2016 - 12/2018</p>
STUDENT SUPERVISION	<p>Baqiwe Sixolile <i>Master, (Ongoing)</i> 2025</p> <p>Baqiwe Sixolile <i>Honours, Image processing and binarization through non-linear partial differential equations.</i> 2024</p>
AWARDS AND HONOURS	<ul style="list-style-type: none">• Top Downloaded Article, Heat Transfer, 2022 - WILEY. 03/2024• Postdoctoral Research Fellowships, Rhodes University. 10/2023, 09/2024• COVID-19 Research Grant, Nelson Mandela University. 09/2020• Best Graduating Student, Faculty of Science Prize for 2011/2012 Session. 12/2014• Graduating student with the best all round performance, Professor (Chief) Reuben Olafenwa Ayeni Memorial Prize for 2011/2012 Session. 12/2014

PEER
REVIEWED
PUBLICATIONS
(SELECTED)

1. **Yusuf Olatunji Tijani** and Shina Daniel Olonijju. Bio-filtration of organic pollutants: simulation and mathematical modelling of toluene and n-propanol. *Chemistry Africa*, 2024.
2. Shina Daniel Olonijju, **Yusuf Olatunji Tijani**, and Olumuyiwa Otegbeye. Thermal analysis of extended surface using deep neural network. *Open Physics*, 2024.
3. Shina Daniel Olonijju, Nancy Mukwevho, **Yusuf Olatunji Tijani**, and Olumuyiwa Otegbeye. Chebyshev pseudospectral method for fractional differential equations in partitioned domains. *AppliedMath*, 2024.
4. **Yusuf Olatunji Tijani**, Shina Daniel Olonijju, Olumuyiwa Otegbeye, and Ajiboye Reginald Babalola. Magnetic feature and regression analysis of Reiner-Philippoff boundary layer flow. *Numerical Heat Transfer, Part B: Fundamentals*, 2023.
5. **Yusuf Olatunji Tijani**, Mojeed Taiwo Akolade, Olumuyiwa Otegbeye, and Abdulhakeem Yusuf. Surface dynamics on Jeffrey nanofluid flow with Coriolis effect and variable Darcy regime. *ZAMM - Journal of Applied Mathematics and Mechanics*, 2023.
6. Matthew Oluwafemi Lawal, **Yusuf Olatunji Tijani**, Suraju Olusegun Ajadi, and Kazeem Babatunde Kasali. Simulation of the laminar thermal boundary layer problem over a flat plate by exploring the local non-similarity technique. *International Journal of Modelling and Simulation*, 2023.
7. **Yusuf Olatunji Tijani** and Appanah Rao Appadu. Unconditionally positive NSFD and classical finite difference schemes for biofilm formation on medical implant using Allen-Cahn equation. *Demonstratio Mathematica*, 2022.
8. Kazeem Babatunde Kasali, Saheed Ojo Akindeinde, **Yusuf Olatunji Tijani**, Adebayo Olusegun Adewumi, and Ramoshweu Solomon Lebelo. Thermal and multi-boiling analysis of a rectangular porous fin: A spectral approach. *Nonlinear Engineering Journal*, 2022.
9. **Yusuf Olatunji Tijani**, Appanah Rao Appadu, and Adebayo Abiodun Aderogba. Some finite difference methods to model biofilm growth and decay: Classical and non-standard. *Computation (MDPI)*, 2021.
10. Mojeed Taiwo Akolade and **Yusuf Olatunji Tijani**. A comparative study of three dimensional flow of Casson-Williamson nanofluids past a Riga plate: Spectral quasilinearization approach. *Partial Differential Equation in Applied Mathematics*, 2021.
11. Hammed Abiodun Ogunseye, **Yusuf Olatunji Tijani**, and Precious Sibanda. Entropy generation in an unsteady Eyring-Powell hybrid nanofluid flow over a permeable surface: A Lie group analysis. *Heat Transfer*, 2020.

CONFERENCES
AND
WORKSHOPS

- 67th Annual Congress of the South African Mathematical Society (SAMS)** | University of Pretoria, South Africa. 12/2024
- 16th Annual Workshop on Computational Mathematics and Modelling** | University of KwaZulu-Natal, Pietermaritzburg Campus, South Africa. 06/2024
- The 45th Annual South African Symposium on Numerical & Applied Mathematics (SANUM)** | University of Stellenbosch, South Africa. 04/2024
- 14th Annual Workshop on Computational Mathematics and Modelling** | University of KwaZulu-Natal, Pietermaritzburg Campus, South Africa. 06/2022
- 18th International Conference of Numerical Analysis and Applied Mathematics (ICNAAM)** | Rhodes, Greece. 09/2020
- 63rd Annual Congress of the South African Mathematical Society (SAMS)** | North-West University, South Africa. 12/2020
- 36th Annual Conference of the Nigerian Mathematical Society (NMS)** | University of Agriculture, Makurdi, Nigeria. 06/2017

SKILLS	<p>Languages: English, Yoruba, IsiXhosa (Beginner), Arabic (Beginner).</p> <p>Programming: MATLAB, Maple, Python, Julia (Beginner).</p> <p>Typesetting: \LaTeX, Microsoft Office, Overleaf.</p>
PRESENTATIONS	<p>Exploring fluid dynamics: The role of Mathematicians Seminar series in the Department of Mathematics, Rhodes University, Makhanda, South Africa. 08/2024</p> <p>Adaptive multidomain numerical solution for singularly perturbed fractional differential equation: Chebyshev pseudospectral method 67th Annual Congress of the South African Mathematical Society (SAMS), University of Pretoria, South Africa. 12/2024</p> <p>Finite difference method for Burgers-Huxley equation and biofilm formation. Department of Mathematics and Applied Mathematics, Nelson Mandela University, Gqeberha, South Africa. 11/2022</p> <p>On the numerical solution of 2D Burgers-Huxley equation using NSFD and classical methods 18th International Conference of Numerical Analysis and Applied Mathematics (IC-NAAM), Rhodes, Greece. 09/2020</p> <p>An oscillatory MHD convection flow past an infinite vertical porous plate with variable suction, radiation and heat generation in the presence of chemical reaction 35th Annual Conference of the Nigerian Mathematical society, Federal University of Technology, Minna, Nigeria. 06/2016</p>
ACADEMIC SERVICES	<p>Reviewers for: <i>The European Physical Journal plus, Fluids, Applied Sciences</i> <i>Fractal and Fractional, Numerical Heat Transfer Part A: Applications</i> <i>Journal of Computational and Theoretical Transport, Symmetry</i> <i>International Journal of Ambient Energy, AppliedMath</i> <i>International Journal of Mechanics and Materials in Design</i></p> <p>Volunteer Teaching: Oke-Ira, Senior Grammar School, Ogba, Lagos, Nigeria.</p> <p>National Youth Service: Community Secondary School, Amah, River-State, Nigeria. 2014.</p>
PROFESSIONAL AFFILIATIONS	<p>Nigerian Mathematical Society (NMS): Member.</p> <p>American Mathematical Society (AMS): Member.</p> <p>South African Mathematical Society (SAMS): Member.</p>
REFEREES	<p>Dr. Shina Daniel Oloniju Department of Mathematics, Rhodes University, South Africa. E-mail - s.oloniju@ru.ac.za, Tel: +27 640300986.</p> <p>Professor Suraju Olusegun Ajadi Department of Mathematics, Obafemi Awolowo University, Ile-Ife, Nigeria. E-mail - soajadi@yahoo.co.uk, Tel: +234 8030545990.</p> <p>Professor Appanah Rao Appadu Department of Mathematics and Applied Mathematics, Nelson Mandela University, Gqeberha, South Africa. E-mail - Rao.Appadu@mandela.ac.za, Tel: +27 790324738.</p> <p>Professor Samuel Segun Okoya Department of Mathematics, Obafemi Awolowo University, Ile-Ife, Nigeria. E-mail - ssokoya@gmail.com, Tel: +234 8035622581.</p>