

YUSUF OLATUNJI TIJANI PHD

CURRENT POSITION	Postdoctoral Research Fellow <i>Rhodes University, Grahamstown, South Africa.</i>	2024 - present
RESEARCH INTERESTS	1. Numerical analysis and scientific computing 2. Computational fluid dynamics 3. Fractional calculus 4. Mathematical modelling 5. Machine learning	
EDUCATION	<p>Department of Mathematics, Nelson Mandela University. Port-Elizabeth, South Africa <i>PhD in Applied Mathematics</i> 2019 - 2023</p> <p>Department of Mathematics, Obafemi Awolowo University. Ile-Ife, Nigeria <i>MSc in Mathematics</i> 2015 - 2018</p> <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>Teaching Assistant <i>Department of Mathematics, Rhodes University, Makhanda, South-Africa.</i> 2025</p> <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, Ile-Ife, Nigeria.</i> 05/2016 - 12/2018</p> <p>Mathematics Lecturer <i>Department of Mathematics, Obafemi Awolowo University, Parent Assisted Rudimentary Tutorial Programme, Nigeria.</i> 02/2015 - 04/2016</p>	
STUDENT SUPERVISION	<p>Baqiwe Sixolile <i>Master, (Ongoing)</i> 2025</p> <p>Zintathu Jozela <i>Honours, (Ongoing)</i> 2025</p> <p>Baqiwe Sixolile <i>Honours, Image processing and binarization through non-linear partial differential equations.</i> 2024</p>	

1. Hammed Abiodun Ogunseye, **Yusuf Olatunji Tijani**, Shina Daniel Olonijju, Olumuyiwa Otegbeye, and Titilayo Morenikeji Agbaje. Entropy generation in Casson-Williamson-Powell-Eyring hybrid ferrofluid flow in a microchannel: Adomian decomposition and deep neural networks approaches. *Colloid and Polymer Science*. 1-18, 2025.
2. Shina Daniel Olonijju, Nancy Mukwevho, **Yusuf Olatunji Tijani**, and Olumuyiwa Otegbeye. Chebyshev pseudospectral method for fractional differential equations in partitioned domains. *AppliedMath*. 4(3), 950-974, 2024.
3. **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*. 104(2) 2024.
4. **Yusuf Olatunji Tijani** and Shina Daniel Olonijju. Bio-filtration of organic pollutants: simulation and mathematical modelling of toluene and n-propanol. *Chemistry Africa*. 8(1), 357-368, 2024.
5. Shina Daniel Olonijju, **Yusuf Olatunji Tijani**, and Olumuyiwa Otegbeye. Thermal analysis of extended surface using deep neural network. *Open Physics*. 22 (1), 20240051, 2024.
6. **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*. 1–19, 2023.
7. Matthew Oluwafemi Lawal, **Yusuf Olatunji Tijani**, Suraju Olusegun Ajadi, and Kazeem Babawale 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*. 1–12, 2023.
8. **Yusuf Olatunji Tijani**, Mojeed Taiwo Akolade, and Abdul Rahman Mohd Kasim. Transport features on bidirectional nanofluid flow with convective heating and variable darcy regime. *Journal of Computational and Theoretical Transport*. 52(5), 343-362, 2023.
9. **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*. 55 (1), 40-60, 2022.
10. Kazeem Babawale 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.
11. **Yusuf Olatunji Tijani**, Shina Daniel Olonijju, Kazeem Babawale Kasali and Mojeed Taiwo Akolade. Nonsimilar solution of a boundary layer flow of a Reiner–Philippoff fluid with nonlinear thermal convection. *Heat Transfer*, 51(6), 5659-5678, 2022.
12. **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)*. 9 (11), 123, 2021.
13. Appanah Rao Appadu, Abey Sherif Kelil and **Yusuf Olatunji Tijani**. Comparison of some forecasting methods for COVID-19. *Alexandria Engineering Journal*. 60(1), 1565-1589, 2021.
14. Appanah Rao Appadu, **Yusuf Olatunji Tijani** and Adebayo Abiodun Aderogba. On the performance of some NSFD methods for a 2-D generalized Burgers–Huxley equation *Journal of Difference Equations and Applications*. 27(11), 1537-1573, 2021.
15. Mojeed Taiwo Akolade and **Yusuf Olatunji Tijani**. A comparative study of three dimensional flow of Casson-Williamson nanofluids past a Riga plate: Spectral quasi-linearization approach. *Partial Differential Equation in Applied Mathematics*, 2021.
16. 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.

AWARDS AND HONOURS	• 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
	• Best all round, Agege Primary School End of the year award.	12/2000
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	Languages: English, Yoruba, IsiXhosa (Beginner), Arabic (Beginner).	
	Programming: MATLAB, Maple, Python, Julia (Beginner).	
	Typesetting: \LaTeX , Microsoft Office, Overleaf.	
PRESENTATIONS	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
	Exploring fluid dynamics: The role of Mathematicians Seminar series in the Department of Mathematics, Rhodes University, Makhanda, South Africa.	08/2024
	Thermal analysis of extended surfaces using deep neural networks. 16th Annual Workshop on Computational Mathematics and Modelling (WOCCOM2024), University of Kwazulu-Natal, South Africa.	06/2024
	Finite difference method for Burgers-Huxley equation and biofilm formation. Department of Mathematics and Applied Mathematics, Nelson Mandela University, Gqeberha, South Africa.	11/2022
	On the numerical solution of 2D Burgers-Huxley equation using NSFD and classical methods 18th International Conference of Numerical Analysis and Applied Mathematics (ICNAAM), Rhodes, Greece.	09/2020
	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

ACADEMIC SERVICES	<p>Reviewers for: <i>The European Physical Journal plus, Fluids, Applied Sciences, AppliedMath, Fractal and Fractional, Numerical Heat Transfer Part A: Applications, Journal of Computational and Theoretical Transport, Symmetry.</i></p> <p>Volunteer Teaching: <i>Saturday Coaching Class, Grahamstown, South Africa. Oke-Ira, Senior Grammar School, Ogba, Lagos, Nigeria. 2023.</i></p>
PROFESSIONAL AFFILIATIONS	<p>South Africa Mathematical Society (SAMS): Member.</p> <p>Nigerian Mathematical Society (NMS): Member.</p> <p>American Mathematical Society (AMS): Member.</p>
REFEREES	<p>Dr. Shina Daniel Oloniju <i>Department of Mathematics, Rhodes University, South Africa.</i> <i>E-mail - s.oloniju@ru.ac.za, Tel: +27 640300986.</i></p> <p>Professor Suraju Olusegun Ajadi <i>Department of Mathematics, Obafemi Awolowo University, Ile-Ife, Nigeria.</i> <i>E-mail - soajadi@yahoo.co.uk, Tel: +234 8030545990.</i></p> <p>Professor Appanah Rao Appadu <i>Department of Mathematics, Nelson Mandela University, Gqeberha, South Africa.</i> <i>E-mail - Rao.Appadu@mandela.ac.za, Tel: +27 790324738.</i></p> <p>Dr. Olumuyiwa Otegbeye <i>School of Computer Science and Applied Mathematics, University of the Witwatersrand, South Africa.</i> <i>E-mail - olumuyiwa.otegbeye@wits.ac.za, Tel: +27 733444196.</i></p> <p>Professor Samuel Segun Okoya <i>Department of Mathematics, Obafemi Awolowo University, Ile-Ife, Nigeria.</i> <i>E-mail - ssokoya@gmail.com, Tel: +234 8035622581.</i></p>