Paper Submission Form - SAIP2025 Proceedings

Sections A, C, D, and E must be completed by all authors (including students) who submit papers. Section B is compulsory for students who submit manuscript(s).

Section A: Paper Submission Information

Paper/Abstract ID	513
Paper title	Optimizing the Geometry of an Empty Concentrator-Diffuser Augmented Wind Turbine Using Genetic Algorithm
Corresponding Author Name & Surname:	Ngwarai Shambira
Corresponding Author Email Address:	nshambira@ufh.ac.za

Section B: For Students & Supervisors

Supervisor Name & Surname:	Prof Patrick Mukumba
Supervisor Email Address:	pmukumba@ufh.ac.za

For this paper, the supervisor must agree/disagree with the following statements.

	Yes	No
1. I am aware that the above-mentioned paper is being submitted for possible publication in the Proceedings of the SAIP Conference. I am satisfied that the presented work is that of the listed authors. I hereby give consent to the submission	X	
2. I have proof-read the manuscript	X	
3. I am satisfied that the manuscript is written in appropriate English and is sufficiently free of grammatical and spelling errors	X	
4. I am familiar with the required manuscript format ("House Style"), and I am satisfied that this manuscript meets the criteria. I am aware that manuscripts not conforming with House Style may be desk rejected	X	
5. I am satisfied that the scientific content of this manuscript is of sufficient standard for it to be considered for publication in the Proceedings of the South African Institute of Physics Conference Proceedings	X	

Student Name & Surname: Dr. Ngwarai Shambira …………………….…….. Signature: ……………………….………. Date: 30/07/2025

Supervisor Name & Surname: Prof. Patrick Mukumba Signature: …………………….……….. Date: 30/07/2025

Section C: Suggested Reviewers

Obtaining the two referee reports necessary for DHET subsidy is an onerous task.

Please provide the names and contact details of three qualified South African and/or international referees. Referees should have a PhD and expertise in the relevant area of Physics. Do not recommend referees who have co-authored a work with any of the authors on the manuscript within the past five (5) years. Manuscripts without three recommended referees may be subject to desk rejection.

Suggested Reviewers in your Research Field (Both local & international)		
	Reviewer Names & Surname	**Reviewer's Email Address(es)**
Suggested reviewer #1	Dr. Henerica Tazvinga	henerica.tazvinga@weathersa.co.za
Suggested reviewer #2	Dr. David Tinarwo	david.tinarwo@univen.ac.za
Suggested reviewer #3	Dr. Busiso Mtunzi	busiso.mtunzi@nust.ac.zw

Section D: Declaration of Novelty and Use of AI

How is this submitted manuscript scientifically novel?

The novelty is on utilising a genetic algorithm to optimise the geometry of a CDaugWT
using an empirical model derived from response surface methodology as an objective function
that accounts for interaction effects among design parameters. By targeting velocity augmentation under
low wind speed conditions (< 2 m/s), the optimised structure enables existing small-scale wind turbines
on the market to function more effectively in low-resource or low-wind regions.

Please see the Author Guidelines for the AI use policy.

How was AI used in the generation of this manuscript?

AI was not used in the generation of this manuscript.

Section E: Plagiarism

	Yes
I am aware that plagiarism detection software may be used on my manuscript.	X