

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	390
Paper title	Predicting the magnetocaloric effect on perovskite oxides using Machine Learning
Corresponding Author Name & Surname:	Buyi Sondezi
Corresponding Author Email Address:	bmsondezi@uj.ac.za

Section B: For Students & Supervisors

Supervisor Name & Surname:	Buyi Sondezi
Supervisor Email Address:	bmsondezi@uj.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: Eugene Sibanda Signature: Date: 30/07/2026

Supervisor Name & Surname: Prof Buyi Sondezi Signature: Date: 31 July 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 Mubarak Yagoub	mubaraky@uj.ac.za
Suggested reviewer #2	Dr Khuliso Murulane	kmurulane@uj.ac.za
Suggested reviewer #3	Prof Rebecca Mhlongo	rebecca.mhlongo@smu.ac.za

Section D: Declaration of Novelty and Use of AI

How is this submitted manuscript scientifically novel?

This study introduces a scientifically novel approach to the prediction of magnetocaloric effects in perovskite oxides by combining advanced machine learning methods with a unique, semi-automated data extraction workflow based on ChatGPT. Unlike traditional studies that often rely on manual data collection or focus primarily on compositional features, this work systematically assembles an extensive experimental database of 1727 entries for both single and double perovskite oxides. The database captures not only compositional information but also experimental and structural properties, including synthesis method, crystal structure, space group, particle morphology, lattice parameters, and magnetic phase transition characteristics, all collected directly from peer-reviewed.

Please see the Author Guidelines for the AI use policy.

How was AI used in the generation of this manuscript?

AI, specifically ChatGPT, was used as a semi-automated assistant to extract and summarize key experimental values from published articles during the data collection process. All data analysis, interpretation, and writing were performed and verified by the authors.

Section E: Plagiarism

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