

Abstract ID & Poster Board #	Presenter (Affiliation)	Title	Student award level	Accepted track
289	Mariah Madie (University Of Limpopo)	Adopting the ab-initio method to unravel the antiferromagnetic hematite bulk and surface properties	Honours	Track A - Physics of Condensed Matter and Materials
290	Dineo Maepa (University of Limpopo)	Effect of Nickel Doping on the Magnetic and Mechanical Properties of B2FeCo Alloy	MSc	Track A - Physics of Condensed Matter and Materials
293	David Mahapane (University of Pretoria)	Strain effects on alkali metal ion adsorption mechanisms on ZrS ₂ monolayer for efficient sodium and potassium-ion batteries: A DFT study	None	Track A - Physics of Condensed Matter and Materials
298	Kemeridge Malatji (University of Limpopo)	Phase Stability and Electro-Mechanical Properties of LiMn _{1.5} Ni _{0.5} O ₄ via Cluster Expansion and DFT	None	Track A - Physics of Condensed Matter and Materials
315	Nicholas Snyman (North-West University)	Development and Evaluation of a Poly(2,5-benzimidazole)-Graphene Oxide Composite for LEO Coating Applications: A Comparative Experimental and Computational Study	Honours	Track A - Physics of Condensed Matter and Materials
325	Lethabo Mogakane (Researcher)	Fe-Doped NaVS ₂ : A Study on the Structural, Electronic, and Electrochemical Properties for Enhanced Energy Storage Applications	Honours	Track A - Physics of Condensed Matter and Materials
338	Irénée Brice Mouadje Mouadje (University of Johannesburg)	Structural and Morphological properties of a Novel Double Perovskite Sm ₂ MgRuO ₆	PhD	Track A - Physics of Condensed Matter and Materials
355	Velile Mnisi (Sefako Makgatho Health Sciences University)	First-principles study of Hf- and Cu-doped Ti-Ni-Mo shape memory alloys: structural stability and mechanical properties for biomedical applications.	PhD	Track A - Physics of Condensed Matter and Materials
362	Beauty Shibiri (University of Limpopo)	The Structural Variations of Li _{1+x} Ni _{0.5} Mn _{1.5} O ₄ Nanoporous Material for Li-ion Battery Cathodes	None	Track A - Physics of Condensed Matter and Materials
363	Edwin Mapasha (University of Pretoria)	First-Principles Study on the Role of Ti, V, and Sc Catalysts in Enhancing the Catalytic Effects of Boron Oxide Monolayer for Efficient Lithium-Selenium Batteries	None	Track A - Physics of Condensed Matter and Materials
365	Khumbulani Tibane (University of Limpopo)	Structural, mechanical, and electronic stability of Li _{7-x} La ₃ Zr _{2-x} NbxO ₁₂ (x = 0.25, 0.5) solid electrolyte	PhD	Track A - Physics of Condensed Matter and Materials
371	Mawisha Jan Mafifi (University of Pretoria)	Ab initio studies of Platinum alloyed with Chromium for jewellery applications: energetic stabilities and structural properties	MSc	Track A - Physics of Condensed Matter and Materials
378	Prettier Morongoa Maleka (Council for Scientific and Industrial Research)	Tailoring Optoelectronic Properties of All Inorganic Perovskites Through B-site Doping: A DFT Study	None	Track A - Physics of Condensed Matter and Materials
383	Mashilo Matlala (University of Limpopo)	The effect of Ir on the magnetic and electronic properties of FePt alloy: A DFT study	MSc	Track A - Physics of Condensed Matter and Materials
386	Vukosi Chauke (University of Limpopo)	Exploring Surface Stability in Titanium Nickel Using DFT	MSc	Track A - Physics of Condensed Matter and Materials
390	Eugene Sibanda	Machine learning the magnetocaloric effect in perovskite oxides	PhD	Track A - Physics of Condensed Matter and Materials
391	Rida Jaffar (University of s\South Africa)	Synthesis and characterization of TiO ₂ : Evaluation for possible application as light trapping layer in thin film solar cells.	PhD	Track A - Physics of Condensed Matter and Materials
393	Kyle Venter (University of Pretoria)	Electrical characterization of vacuum-deposited all-inorganic perovskite solar cells	PhD	Track A - Physics of Condensed Matter and Materials
395	Geoffrey Mwendwa (University of the Witwatersrand)	Ferroelasticity of EuTiO ₃ and TbMnO ₃ Thin Films on (001) Si	PhD	Track A - Physics of Condensed Matter and Materials
396	Bharati Bamana (University of Johannesburg)	Effect of Temperature on Structural and Optical Properties of Sm ₂ O ₃	None	Track A - Physics of Condensed Matter and Materials

Abstract ID & Poster Board #	Presenter (Affiliation)	Title	Student award level	Accepted track
397	Mathabo Joy Mothiba	Design of NiO-Co ₃ O ₄ Heterostructures Loaded with Pr and Er Rare Earth Elements for Detection of Hazardous Air Pollutants	MSc	Track A - Physics of Condensed Matter and Materials
400	Nyepudzai C. Gatsi (University of the Witwatersrand)	SnO ₂ -loaded Ga ₂ O ₃ -nanorods for selective and sensitive isopropanol sensing at low operating temperature.	None	Track A - Physics of Condensed Matter and Materials
405	Amos Nhlapo (Sefako Makgatho Health Sciences University)	Effect of rare-earth doping on structural and magnetic properties of Ni-Mg spinel ferrite	None	Track A - Physics of Condensed Matter and Materials
408	Mofuti Mehlaphe (University of Limpopo)	Atomistic simulations of iron sulphide mineral (marcasite-FeS ₂) based on a modified interatomic potential	None	Track A - Physics of Condensed Matter and Materials
411	Antoine F. Mulaba-Bafubiandi (University of Johannesburg and Universite de Mbuji-Mayi)	Heat transfer Study of Lagenaria Siceraria Cucurbitaceae Material : Python Coding	None	Track A - Physics of Condensed Matter and Materials
416	Vusumuzi Masondo (Durban University of Technology)	Magnetic behavior of Ar implanted ZnO	PhD	Track A - Physics of Condensed Matter and Materials
420	Bhila Oliver Mnisi	Density functional theory study on the effect of pressure on structural, mechanical and electronic properties of A15 M ₃ Ru alloy	None	Track A - Physics of Condensed Matter and Materials
421	Tshegofatso Phaahla (University of Limpopo)	Methanol Formation from Syngas on ZnO (010) Surface: Insights from DFT	None	Track A - Physics of Condensed Matter and Materials
423	Thokozani Mpanza (University of Zululand)	Gas sensing properties of annealed and unannealed CoWO ₄ for air quality monitoring	None	Track A - Physics of Condensed Matter and Materials
427	Ibrahim Omer Abdallah Ali (University of South Africa)	A First-Principles Study of the Structural, Mechanical, Dynamical and Electronic properties of HfSnPt: Half-Heusler Structure	PhD	Track A - Physics of Condensed Matter and Materials
431	Ashley Phala (University of Pretoria)	Investigation of structural and electronic properties of BCC Ti ₄ V ₄ Cr ₄ Mn ₃ Al high entropy alloy	PhD	Track A - Physics of Condensed Matter and Materials
433	Mamonamane Mphahlele (University of Limpopo)	Atomistic Insights into Amorphisation and Recrystallisation of Nano-Spherical LiNiO ₂ : Phase Retention and Microstructural Evolution.	PhD	Track A - Physics of Condensed Matter and Materials
440	Molatelolo Matleke	Analysis of structural and electronic properties of LiTi ₂ (PO ₄) ₃ solid-state electrolyte material for application in lithium-ion batteries	Honours	Track A - Physics of Condensed Matter and Materials
443	Lindiwe Mthimunye (University of Pretoria)	Organic use of chlorophyll extracted from green algae in Dye-Sensitized Solar Cell	MSc	Track A - Physics of Condensed Matter and Materials
444	Puseletso Mokoena	Cooperative Energy Transfer and Upconversion Luminescence of Sr ₅ (PO ₄) ₃ OH:Eu ³⁺ ,Yb ³⁺ phosphor powders	None	Track A - Physics of Condensed Matter and Materials
447	Cliffton Masedi (University of Limpopo)	Computational Modelling Study on Stability of Li-S/Se System	None	Track A - Physics of Condensed Matter and Materials
451	Mogahabo Morukuladi (University of Limpopo)	Determine the Mn-rich phases of transition metal carbonate precursors using Universal Cluster Expansion code	PhD	Track A - Physics of Condensed Matter and Materials
461	Mike Molukie Mokwena (University of South Africa)	Aqueous chemically grown ZnO nanosheets for gas sensing applications	PhD	Track A - Physics of Condensed Matter and Materials
465	Tshedza Rasilingwani (Sefako Makgatho Health Sciences University)	Effect of annealing temperature on structural, optical, and morphology properties of TiO ₂ synthesized via sol-gel method.	MSc	Track A - Physics of Condensed Matter and Materials
472	Tshegofatso Moipolai (University of South Africa)	Effect of Ion Implantation on Structural and Optical Properties of CZTS Thin Films	PhD	Track A - Physics of Condensed Matter and Materials
477	Moloko Emmanuel Kgoedi (University of Limpopo)	Compositional Analysis of Heterostructural Ti-Doped Li _{1.2} Mn _{0.8} O ₂ Cathode Materials during the Computational and Experimental Crystal Growth Processes	MSc	Track A - Physics of Condensed Matter and Materials

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478	Lisbon Maake (university of Limpopo)	The Diffusivity and Li ⁺ Conductivity of LiTi ₂ (PO ₄) ₃ Nanosphere for Solid State Battery Electrolytes	MSc	Track A - Physics of Condensed Matter and Materials
481	David Tshwane (Council for Scientific and Industrial Research)	Exploring the effect of hydrogen adsorption on Fe ₂ SiCr surface	None	Track A - Physics of Condensed Matter and Materials
483	Fokotsa Molefe (Tshwane University of Technology)	The influence of UVO irradiation on structural, morphological and optical properties of SnO ₂ thin films deposited by slot-die method	None	Track A - Physics of Condensed Matter and Materials
487	Raesibe Ledwaba (University of Limpopo)	Influence of Ti-dopant during Crystal Growth of Li-rich Layered Li _{1.2} Mn _{0.8} O ₂ Cathode Materials using co-precipitation synthesis route	None	Track A - Physics of Condensed Matter and Materials
489	Khanyisile Nkuna (University of the Witwatersrand)	Understanding the fundamental properties of 1D Co ₃ O ₄ -ZnO nanofibers for enhanced gas sensing performance	None	Track A - Physics of Condensed Matter and Materials
490	Katekani Shingange (University of the Witwatersrand)	Titanium carbide MXenes: Advancing gas sensing applications through 2D nanostructures and functional surface engineering	None	Track A - Physics of Condensed Matter and Materials
500	Nolufundo Sintwa	Structural and upconversion properties of Er ³⁺ /Yb ³⁺ doped zinc titanate for potential applications in bio-imaging	None	Track A - Physics of Condensed Matter and Materials
506	Peace Mkhonto (University of Limpopo)	Computational study on interaction of S-allyl-N-diethyl-dithiocarbamate (ADEDTC) and s-triazine collectors on (311) surface of pentlandite (Fe ₅ Ni ₄ S ₈)	MSc	Track A - Physics of Condensed Matter and Materials
507	Ramalebana Moeti	Exploring enhanced titanium (Ti) nanoclusters doped with osmium (Os) and ruthenium (Ru): A DFT study	MSc	Track A - Physics of Condensed Matter and Materials
510	Murendeni Nemifulwi (University of South Africa)	Induced Structural Defects by Anion Doping of ZnO for Ammonia Detection	None	Track A - Physics of Condensed Matter and Materials
515	Thabang Kombesi	Enhancement of the magnetic and mechanical performance of L10 MnPt-Ru alloys using ab initio techniques	MSc	Track A - Physics of Condensed Matter and Materials
517	Mpilo Dlamini (North-West University)	Metallic Nanoparticles Enhanced Organic Photovoltaic Solar Cells	None	Track A - Physics of Condensed Matter and Materials
522	Tsholo Talane (University of South Africa)	Influence of Surface Terminations (-F, -OH, -Cl) on the Structural and Electrochemical Behavior of Ti ₃ C ₂ T _x MXene	PhD	Track A - Physics of Condensed Matter and Materials
525	Tshidi Mogashoa (University of Limpopo)	Impact of Morphology on Lithium Transport and Structural Evolution in Li ₂ MnO ₃ Cathode Materials	None	Track A - Physics of Condensed Matter and Materials
571	Magezi Montell Baloyi (University Of Venda)	DFT studies of photocatalytic properties of barium titanate doped with vanadium and tungsten for hydrogen production via water splitting.	None	Track A - Physics of Condensed Matter and Materials
115	Moshibudi Ramoshaba (University of Limpopo)	Structural and electronic properties of Copper sulphide (Cu ₂ S) and copper selenide (Cu ₂ Se) powders	None	Track A - Physics of Condensed Matter and Materials
88	Mohapi Thebe	The use of computer-based experiments in physics education	None	Track E - Physics for Development, Education and Outreach
147	Pankaj Mohanty (University of Johannesburg)	Artificial Intelligence (AI) a Modern Tool to Learn Physics	None	Track E - Physics for Development, Education and Outreach
335	Cathy Maako (University of the Witwatersrand)	The hidden interference pattern	MSc	Track E - Physics for Development, Education and Outreach
469	Marco Mariola (University of KwaZulu-Natal)	Electrochemical impedance spectroscopy. Potentiostat device.	None	Track E - Physics for Development, Education and Outreach
520	Laing Lourens (Council for Scientific and Industrial Research)	Mapping Career Landscapes for Physics Students: A Comparative Overview of the Space Science and Quantum Technology Industries	None	Track E - Physics for Development, Education and Outreach
527	Rasitilo Makgobela (University of Limpopo)	The Effect of Physics Practicals on the First Year Physics Students at the University of Limpopo in Understanding Physics Concepts	Honours	Track E - Physics for Development, Education and Outreach

Abstract ID & Poster Board #	Presenter (Affiliation)	Title	Student award level	Accepted track
9	Enock Jonathan	Novel Eye Goggle Configuration Icterometer For Neonatal Jaundice Screening in Low Resource Settings	None	Track F - Applied Physics
25	Tlotlo Setlhare (Botswana International University of Science and Technology)	Qualitative Study of Exhaled Breath in Lung Cancer Patients	PhD	Track F - Applied Physics
73	Emmanuel Igumbor	Nitrogen Flushing Efficiency in the ITk Outer Pixels of the Upgraded ATLAS Detector: A Steady-State Computational Fluid Dynamics Study	None	Track F - Applied Physics
85	Annita Jokazi (University Of Venda)	IoT-Based SCADA for remote monitoring and controlling PV Water Pumping Systems	MSc	Track F - Applied Physics
86	Mkhatshwa Xolile (University Of Venda)	First-Principles Investigation of the Structural, Electronic, and Optical Properties of CsPbI ₃ Perovskite for Solar Cell Applications	MSc	Track F - Applied Physics
121	Isaiah Chiraira (University of the Witwatersrand)	Adaptive Multi-tier Neural Architecture for Optimized Environmental Parameter Management in High-Energy Physics Detector Systems	MSc	Track F - Applied Physics
134	Shandukani Kharavho (University Of Venda)	Prediction of Gas Sensing Materials Using Machine Learning Algorithms	MSc	Track F - Applied Physics
136	Mabunda Hlayiseka (University Of Venda)	Modeling Hybrid Energy Systems for Carbon Neutrality in South Africa.	Honours	Track F - Applied Physics
175	Chewe Fwalo (University of Pretoria)	First-principles study of adsorption mechanisms of various sodium-oxides on N-doped graphene cathode for efficient sodium-oxygen battery	PhD	Track F - Applied Physics
184	Damuleli Thivhafuni Edgar (University Of Venda)	Density functional Theory study of NaMnO ₂ F as a Cathode Material for Sodium-Ion Batteries	Honours	Track F - Applied Physics
191	Mudimeli Vusani Mangalani (University Of Venda)	First-Principles Study of NaMnPO ₄ F as a Cathode for Sodium-Ion Batteries	Honours	Track F - Applied Physics
208	Mpho Gololo (University of Johannesburg); Brenton Munhungewarwa (University of Johannesburg)	TileCoM Firmware Development for ATLAS Tile Calorimeter Phase-II Upgrade	MSc	Track F - Applied Physics
209	Isaiah Chiraira (University of the Witwatersrand)	Real-Time Indoor Air Quality Monitoring and Adaptive Ventilation in Scientific Workspaces	MSc	Track F - Applied Physics
230	Takalani Nethavhanani (University of Venda)	Effects of calcium oxide and iron (III) oxide on biogas production and hydrogen sulphide mitigation	None	Track F - Applied Physics
253	Mpho Gololo (University of Johannesburg)	The South African contribution based on the TileCoM and Tile GbE Switch to the Tile Pre-Processor Modules for the ATLAS Tile Calorimeter: Progress and Current Status.	None	Track F - Applied Physics
279	Rachid Mazini (University of the Witwatersrand)	LGAD technology for beam monitoring and medical applications	None	Track F - Applied Physics
300	Moses Hlongwane (Tshwane University of Technology)	Thermal Analysis of AMPREG 21 Epoxy and Bi Composite Material using the Cone Calorimeter	MSc	Track F - Applied Physics
331	Pfesesani Netshilonwe (University of Venda)	Integration of grid-scale battery energy storage in solar microgrids for rural communities in Limpopo province	MSc	Track F - Applied Physics
388	Mano Mosalakgotla	Optimization of TiO ₂ processing parameters using the slot die-coating technique for dye-sensitized solar cells	PhD	Track F - Applied Physics

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402	Thokozane Mlotshwa (University of Limpopo)	MIDI tea for biochar, possible graphite candidacy? Let's explore.	PhD	Track F - Applied Physics
403	Pfukani Sibuyi (University of Johannesburg)	Study of the interactions between independent variables in the grade and recovery of phosphorus bearing minerals during flotation from a low- grade ore.	None	Track F - Applied Physics
412	Mandilakhe Mzobotshe (University of Fort Hare)	Development of a nonlinear response surface model to predict the volume of biogas yield of a fixed dome digester charged with cow manure.	PhD	Track F - Applied Physics
419	Donald Ngobeni (University of the Witwatersrand)	Improving isotope production using machine learning techniques at iThemba Labs	MSc	Track F - Applied Physics
435	Matumba Rotondwa Muriel	Wind Energy Potential in Local Areas	Honours	Track F - Applied Physics
454	Ipfi Mnandi	Preliminary Analysis of Energy Demand Characteristics in a Renewable Microgrid at Masia Agricultural Development Centre.	MSc	Track F - Applied Physics
457	Donald Ngobeni	Improving isotope production using machine learning techniques at iThemba Labs	MSc	Track F - Applied Physics
463	Avhatakali Ramalata	Performance Analysis of a Hybrid Renewable Energy Microgrid through Simulation-Based Evaluation and PLC-Controlled Load Management	Honours	Track F - Applied Physics
466	Marco Mariola (University of KwaZulu-Natal)	The development of the atmospheric monitoring system for a balloon-borne system	None	Track F - Applied Physics
470	Marco Mariola (University of KwaZulu-Natal)	Time to digital converter based on FPGA	None	Track F - Applied Physics
484	Lutendo Phuthu	A Comparative Study of VO ₂ Doped with In and Ga for Thermo-chromic Window Application	None	Track F - Applied Physics
513	Ngwarai Shambira (University of Fort Hare)	Optimizing the Geometry of an Empty Concentrator-Diffuser Augmented Wind Turbine Using Genetic Algorithm	None	Track F - Applied Physics
518	Letty Ndala (University of Fort Hare)	An assessment of biogas production from food wastes	MSc	Track F - Applied Physics
523	Shandukani Muronga	Circular Economy Strategies for End-of-Life Solar Panels	None	Track F - Applied Physics
524	Shandukani Muronga (University of Venda)	Enhancing Rural Electrification: An In-depth Analysis and Optimization of PV/Hydrogen Fuel Cell/Battery-Powered Microgrids	MSc	Track F - Applied Physics
14	Katlego Pule	A computational fluid dynamics study of turbulence flow in a heat-pipe-heat exchanger for application in micro reactor	MSc	Track G - Theoretical and Computational Physics
58	Neelam Saghir (University of South Africa)	Tunable Electronic Properties of Graphdiyne Under Tension and Compression: A DFT Study	None	Track G - Theoretical and Computational Physics
94	Mwende Mbilo (University of Nairobi)	First Principles Study of the Properties of K ₂ SbAu Ternary Compound for Energy Harvesting Applications	None	Track G - Theoretical and Computational Physics
101	Tendani Oliver Munyai (Nelson Mandela University)	Studying the Dependence of Particle Ratios on Collision Energy in Pb+Pb High-Energy Heavy-Ion Collisions using the Ultra-relativistic Quantum Molecular Dynamics model (UrQMD-3.4).	Honours	Track G - Theoretical and Computational Physics
146	Tshepo Mcdonald	Equilibrium and elastic properties of hexagonal molybdenum disulphide	PhD	Track G - Theoretical and Computational Physics
227	Cambel Thaba	First-principles investigations of structural properties and energies stabilities of W-Re alloy for fusion reactor application	PhD	Track G - Theoretical and Computational Physics
260	Lesego Miya (Sefako Makgatho Health Science University)	Effects of Earth Metal Dopants on the Properties of a Neodymium Magnet Using a First-Principles Approach.	PhD	Track G - Theoretical and Computational Physics

SAIP2025 Poster Session 2
Thursday 10 July 2025
16h10 - 18h00

Abstract ID & Poster Board #	Presenter (Affiliation)	Title	Student award level	Accepted track
376	Marandela Mulalo Valencia	Optimizing Renewable Energy Generation in South Africa using ARENA FlexTool	PhD	Track G - Theoretical and Computational Physics
509	Steephenraj A (Rhodes University)	Theoretical study of defect structures in pure and C, Mg-doped aluminum oxide (Al ₂ O ₃)	None	Track G - Theoretical and Computational Physics