

## Curriculum vitae :

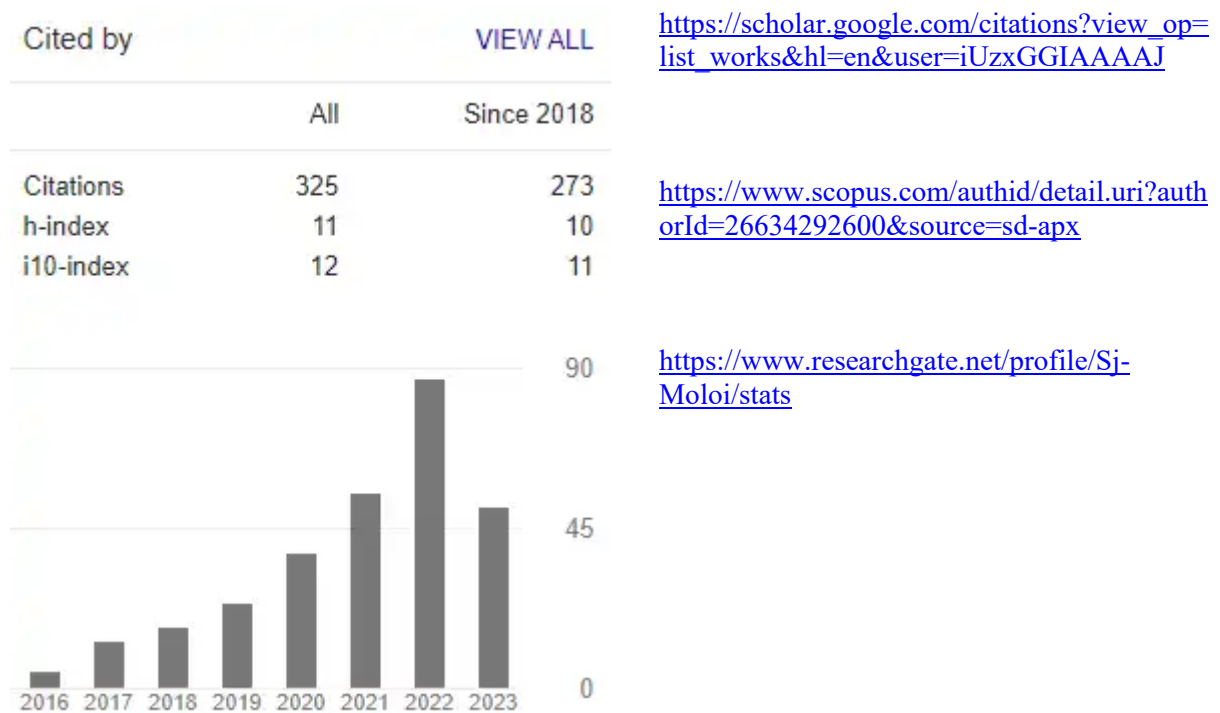
### *Prof. Sabata Jonas Moloi*

*[BSc., BSc (Hons) MSc., PhD. (Physics)]*

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### 1. Research credits



### 2. Career objectives

- To work at an organisation that would allow me to develop my potential whilst giving me the opportunity to grow in knowledge and be competent as a professional.
- To be able to utilise my knowledge to benefit others, by combining technology and the use of good learning practises.
- To assist others with skills required for becoming independent learners and also improving my own skills.

- To be a leader in research on material for radiation sensing applications.
  - To be involved in the community projects run by the University of South Africa and other institutions.
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### 3. Educational qualification

#### Higher education

##### **PhD (Physics), North-West University (Mafikeng Campus).**

Date: May 2006 – September 2010

Thesis title: Silicon diodes fabricated on defect-engineered material for use as radiation detectors.

##### **MSc (Physics), University of KwaZulu-Natal (Westville Campus)**

Date: January 2004 - December 2005

Dissertation title: Electrical properties of radiation-damaged silicon *p-i-n* diodes.

##### **BSc (Hons) (Physics), University of KwaZulu-Natal (Westville Campus)**

Date: January 2003 – December 2003 (With distinctions in several courses)

Dissertation title: Electrical properties of silicon *p-i-n* diodes.

##### **BSc, (Physics and Mathematics), University of the Free-State (UOVS) (Qwa-Qwa Campus)**

Date: January 2000 - December 2002 (With distinctions in several courses)

#### **Other courses:**

Course	Institution	From-To
Chemistry	UOVS	2000
Computer Science	UOVS	2001
English	UOVS	2000 - 2001

#### HIGH SCHOOL

Matric, Thahameso High School

Year passed: 1999

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### 4. Other certificates

- Advanced Short Course in Outcome-Based Assessment in Higher Education and Open Distance Learning: 2010
  - Academic Management Capacity Development: 2012
  - Young Academic Programme: 2014
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### 5. Technical skills

- Fabrication of silicon diodes.
  - Device characterization techniques: current-voltage (*I-V*), capacitance-voltage (*C-V*), Deep level transient spectroscopy (DLTS), etc.
  - Material characterization techniques: Rutherford Backscattering Spectroscopy (*RBS*), Elastic Recoil Detection Analysis (ERDA) and PIXE.
  - Data acquisition and analysis: by Microsoft excel, MatLAB, ORIGIN and RUMP, SRIM etc.
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### 6. Work experience

#### **Employment 1**

Dates

01 December 2009 – To date

Organisation

University of South Africa

Job title

Lecturer: (December 2009 – August 2011)

Senior lecturer: (September 2011 – January 2019)

Associate Professor: (January 2019 – December 2021)

Professor (January 2022 – to date)

## **Employment 2**

Dates	March 2006 – November 2009
Organisation	North-West University (Mafikeng Campus)
Job title	Physics Lecturer
Type	Temporal
Responsibilities	Lecturing Physics for undergraduate students

## **Employment 3**

Dates	March 2003 - November 2005
Organisation	University of KwaZulu – Natal (Westville Campus)
Job title	Graduate Assistant and Research Assistant
Type	Temporal
Responsibilities	Academic work such as practical classes, tutoring first year and foundation classes and marking of the test papers and assignments for the first year and foundation students.

## **Employment 4**

Dates	March 2002 - November 2002
Organisation	UOVS (Qwa-Qwa Campus)
Job title	Demonstrator
Type	Temporal
Responsibilities	Physics laboratory demonstrator for the first- and second-year practical modules.

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## **7. Bursaries, awards, and recognition**

- C2 NRF-rated scientist: 2023 - 2028
  - Y2 NRF-rated scientist: 2016 - 2022
  - NRF: Collaborative postgraduate training programme: 2017 - 2020
  - Vision Keepers, for the developing researchers at UNISA: 2013
  - National Research Foundation (NRF) for PhD studies: 2006 – 2008
  - NRF for MSc: 2005
  - NRF for BSc (Hons): 2003
  - University of the North – Access Board: 2000
  - Best matric student at Thahameso high school: 1999
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## **8. Professional activities**

### **Academic citizenship**

#### ***A. Research***

- Editorial committee member of Conference proceeding of the 56<sup>th</sup> SAIP conference in 2011
- Judge for presentations at the 58<sup>th</sup> SAIP conference in 2013
- Visiting researcher at Joint Institute of Nuclear Research (JINR): 2014
- Organising committee member of Sofianos Symposium, 2017
- Organising committee member of Nano-Africa conference, 2017.
- Reviewer of several scientific accredited journals: 2012 – to date
- National Research Foundation (NRF) proposal reviewer for various calls: 2012 – to date
- Involved in drafting the strategic plan on the enhancement of Physics training in SA. (2017)
- External Dissertation and Thesis examiner for various universities in SA: 2011 – to date
- Member of iThemba LABS Users committee: 2016- to date

#### ***B. Teaching and learning***

- Involve in Curriculum development of Physics modules: 2011 – to date
- Involve in Physics module quality assurance and enhancement: 2010 – to date
- Procuring of teaching and research laboratory equipment: 2010 – to date
- External undergraduate module assessor for various universities in SA: 2010 – to date
- A member of departmental postgraduate committee: 2014 - 2019

### **Community engagement**

- Committee member of PhysicsEdge project: 2014 - 2019
- Committee member of GirlPower project: 2014 – to date
- Departmental SAIP representative for Science week program: 2014- 2019
- Mentor of high school learners in GirlPower project: 2010 – to date
- Judge at Eskom Expo for young scientists 2014 – to date
- First LEGO league participant: 2010 -2014

### **Academic leadership**

- Acted as Chair of the Department (CoD): 2014 - 2019
  - Thesis and Dissertation examining chairperson: 2017 – to date
  - Chairperson of Departmental tuition committee: 2014 - 2019
  - Principal investigator in the Electronic Materials and Devices research: 2010 – to date
  - Member of the School of Science research ethics committee: 2020 – to date
  - Deputy chairperson of Departmental research committee: 2020 – to date
  - Coordinator of Departmental seminars: 2014 – 2019
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## **9. Research output**

### **Thesis / Dissertation**

#### **1. PhD. Thesis**

Moloi, S. J., 2009, *PhD Thesis*, North-West University (Mafikeng Campus), Mafikeng, South Africa.

#### **2. MSc. Dissertation**

Moloi, S. J., 2006, *MSc Thesis*, University of KwaZulu-Natal (Westville Campus), Durban, South Africa.

#### **3. Honours Mini-Dissertation**

Moloi, S. J., 2004, *Honours Thesis*, University of KwaZulu-Natal (Westville Campus), Durban, South Africa.

### **Articles published in peer reviewed journals.**

1. Masedi Carington Masekane, Ivancica Bogdanovic, Mandla Msimanga and **Sabata Jonas Moloi** (2023) *Experimental low velocity proton and  $^{28}\text{Si}^{9+}$  induced X-ray production cross sections for select elements within  $24 \leq Z \leq 83$* , Radiation Physics and Chemistry, 213, 111208 ([10.1016/j.radphyschem.2023.111208](https://doi.org/10.1016/j.radphyschem.2023.111208))
2. J. O. Bodunrin and **S. J. Moloi** (2023) *Characterization of Interface State Density of Al/p-Si Structure by Current-Voltage and Capacitance-Voltage-Frequency Measurements*, Journal of Materials Science: Materials in Electronics Science, 34, 1712 ([10.1007/s10854-023-11090-6](https://doi.org/10.1007/s10854-023-11090-6))
3. Joseph Oluwadamilola Bodunrin, Duke Ateyh Oeba and **Sabata Jonas Moloi** (2023) *Exploring the Impact of Fe-Implantation on the Electrical Characteristics of Al/p-Si Schottky Barrier Diodes*, electronic materials, 4, 95-09 ([10.3390/electronicmat4020008](https://doi.org/10.3390/electronicmat4020008))
4. **S. J. Moloi** (2023) *Analysis of activation energy and conductivity in 1 MeV neutron irradiated silicon diode*, Physica B: Condensed Matter, 15, 414579 ([10.1016/j.physb.2022.414579](https://doi.org/10.1016/j.physb.2022.414579))
5. J. O. Bodunrin and **S. J. Moloi** (2022) *Current-Voltage Characteristics of 4 MeV Proton-Irradiated Silicon Diodes at Room Temperature*, Silicon, ([10.1007/s12633-022-01767-8](https://doi.org/10.1007/s12633-022-01767-8))
6. D. O. Idisi, E. M. Benecha, **S. J. Moloi**, and S. C. Ray (2022) *Effects of gold nanoparticles (Au-NPs) on the electrical properties of reduced graphene oxide: An experimental and DFT study*, Journal of Materials Research ([10.1557/s43578-022-00514-4](https://doi.org/10.1557/s43578-022-00514-4))

7. J. O. Bodunrin and **S. J. Moloji** (2022) *Electrical properties and conduction mechanisms of heavily iron implanted silicon diodes*, Solid State Communications, **341**, 114575 ([10.1016/j.ssc.2021.114575](https://doi.org/10.1016/j.ssc.2021.114575))
8. Brighton Mabasa, Meena D. Lysko and **Sabata J. Moloji** (2022) *Comparison of Satellite-Based and Angstrom-Prescott Estimated Global Horizontal Irradiance under Different Cloud Cover Conditions in South African Location*, Solar, **2**, 354 – 374 ([10.3390/solar2030021](https://doi.org/10.3390/solar2030021)).
9. M. J. Thebe, **S. J. Moloji** and M. Msimanga (2021) *Changes in electrical properties and conduction mechanisms of Pd/n-Si diodes due to niobium dopant*, Materials Science and Engineering: B, **273**, 115392 ([10.1016/j.mseb.2021.115392](https://doi.org/10.1016/j.mseb.2021.115392))
10. J.O. Bodunrin, D.A. Oeba and **S. J. Moloji** (2021) *Current-voltage and capacitance-voltage characteristics of cadmium-doped p-silicon Schottky diodes*, Sensors and Actuators A: Physical, **331**, 112957 ([10.1016/j.sna.2021.112957](https://doi.org/10.1016/j.sna.2021.112957))
11. J.O. Bodunrin, D.A. Oeba and **S. J. Moloji** (2021) *Current-voltage characteristics of iron-implanted silicon based Schottky diodes*, Materials Science in Semiconductor Processing, **123**, 105524 ([10.1016/j.mssp.2020.105524](https://doi.org/10.1016/j.mssp.2020.105524))
12. D.A. Oeba, J.O. Bodunrin and **S. J. Moloji** (2021) *Electrical properties of 3 MeV proton irradiated silicon Schottky diodes*, Physica B: Physics of Condensed Matter, **610**, 412786 ([10.1016/j.physb.2020.412786](https://doi.org/10.1016/j.physb.2020.412786))
13. Brighton Mabasa, Meena D. Lysko and **Sabata J. Moloji** (2021) *Validating Hourly Satellite Based and Reanalysis Based Global Horizontal Irradiance Datasets over South Africa*, Geomatics, **1**, 429 - 449 ([DOI:10.3390/geomatics1040025](https://doi.org/10.3390/geomatics1040025))
14. Brighton Mabasa, Meena D. Lysko, Henerica Tazvinga, Nosipho Zwane and **Sabata J. Moloji** (2021) *The Performance Assessment of Six Global Horizontal Irradiance Clear Sky Models in Six Climatological Regions in South Africa*, Energies, **14(9)** 2583 ([10.3390/en14092583](https://doi.org/10.3390/en14092583))
15. Elison S. Ganya, **Sabata J. Moloji**, Sekhar C. Ray and Way-Faung Pong (2020) *Tuning the electronic and magnetic properties of PEDOT-PSS-coated graphene oxide nanocomposites for biomedical applications*, Journal of Materials Research, **35**, 2478-2490 ([10.1557/jmr.2020.236](https://doi.org/10.1557/jmr.2020.236))
16. R.W. Thoka, **S. J. Moloji**, Sekhar C. Ray, W.F. Pong and I.-N. Lin (2020) *Microstructure and electronic properties of ultra-nano-crystalline-diamond thin films*, Journal of Electron Spectroscopy and Related Phenomena, **242**, 146968 ([10.1016/j.elspec.2020.146968](https://doi.org/10.1016/j.elspec.2020.146968))
17. James A. Oke, David O. Idisi, **Sabata J. Moloji**, Sekhar C. Ray, K.H. Chen, A. Ghosh, A. Shelke and W.F. Pong (2020) *Structural, electronic, and electrical behaviour of MWCNTs:TiO<sub>2</sub>(:SiO<sub>2</sub>) nanocomposites*, Journal of Electron Spectroscopy and Related Phenomena, **245**, 147002 ([10.1016/j.elspec.2020.147002](https://doi.org/10.1016/j.elspec.2020.147002))
18. Elison S. Ganya, Navneet Soin, **Sabata J. Moloji**, James A. McLaughlin, W. F. Pong and Sekhar C. Ray (2020) *Polyacrylate grafted graphene oxide nanocomposites for biomedical applications*, Journal of Applied Physics, **127**, 054302 ([10.1063/1.5135572](https://doi.org/10.1063/1.5135572))
19. M. Maloba, M. Msimanga and **S. J. Moloji** (2020) *Ion beam modification of polyaniline: Optical and electrical properties of Cu<sup>+</sup> ion implanted thin films*, Materials Today Communications, **24**, 101022 ([10.1016/j.mtcomm.2020.101022](https://doi.org/10.1016/j.mtcomm.2020.101022))
20. M.C. Masekane, **S. J. Moloji**, M. Madhuku and M. Msimanga (2020) *Measurement of <sup>12</sup>C<sup>q+</sup> and <sup>35</sup>Cl<sup>q+</sup> ion induced X-ray production cross sections in V, Zr and Sn metal oxide films at 0.1 MeV/u-1.0 MeV/u energies*, Radiation Physics and Chemistry, **176**, 109083 ([10.1016/j.radphyschem.2020.109083](https://doi.org/10.1016/j.radphyschem.2020.109083))

21. Brighton Mabasa, Meena D. Lysko, Henerica Tazvinga, Sophie T. Mulaudzi, Nosipho Zwane and **Sabata J. Moloji** (2020) *The Ångström–Prescott Regression Coefficients for Six Climatic Zones in South Africa*, *Energies*, **13**, 5418 ([10.3390/en13205418](https://doi.org/10.3390/en13205418))
22. **S. J. Moloji** and M. McPherson (2019) *Reverse annealing studies of irradiate silicon by use of current-voltage measurements*, *Nuclear Instruments and Methods in Physics Research. Section B*, **440**, 64-67 ([10.1016/j.nimb.2018.11.025](https://doi.org/10.1016/j.nimb.2018.11.025))
23. James. A. Oke, David O. Idisi, Sweetey Sarma, **Sabata J. Moloji**, Sekhar C. Ray, Kuan Hung Chen, Anirudha Gosh, Abhijet Shelke and Way Faung Pong (2019) *Electronic, Electrical, and Magnetic Behavioral Change of SiO<sub>2</sub> -NP Decorated MWCNTs*, *ACS Omega*, **4**, 14589-14598 ([10.1021/acsomega.9b01958](https://doi.org/10.1021/acsomega.9b01958))
24. James A. Oke, David O. Idisi, Sweetey Sarma, **S. J. Moloji**, Sekhar C. Ray, K. H. Chen, A. Gosh, A. Shelke, S.-H. Hsieh and W.F. Pong (2019) *Tuning of electronic and electrical behaviour of MWCNTs-TiO<sub>2</sub> nanocomposites*, *Diamond and Related Materials*, **100**, 107570 ([10.1016/j.diamond.2019.107570](https://doi.org/10.1016/j.diamond.2019.107570))
25. David O. Idisi, J.A. Oke, Sweetey Sarma, **Sabata J. Moloji**, Sekhar C. Ray, W.F. Pong and André M. Strydom (2019) *Tuning of electronic and magnetic properties of multifunctional r-GO-ATA-Fe<sub>2</sub>O<sub>3</sub>-composites for magnetic resonance imaging (MRI) contrast agent*, *Journal of Applied Physics*, **126**, 035301([10.1063/1.5099892](https://doi.org/10.1063/1.5099892))
26. David O. Idisi, Haydar Ali, J.A. Oke, Sweetey Sarma, **S. J. Moloji**, Sekhar C. Ray, H.T. Wang, Nikhil R. Jana, W.F. Pong and André M. Strydom (2019) *Electronic, electrical and magnetic behaviours of reduced graphene-oxide functionalized with silica coated gold nanoparticles*, *Applied Surface Science*, **483**, 106 -113 ([10.1016/j.apsusc.2019.03.271](https://doi.org/10.1016/j.apsusc.2019.03.271))
27. O. Oluwaleye, M. Madhuku, B. Mwakikunga and **S. J. Moloji** (2019) *Studies of lattice structure, electrical properties, thermal and chemical stability of cobalt ion implanted Tin Oxide (ITO) thin films on polymer substrates*, *Nuclear Instruments and Methods in Physics Research. Section B*, **450**, 267-273 ([10.1016/j.nimb.2018.10.014](https://doi.org/10.1016/j.nimb.2018.10.014))
28. O. Oluwaleye, M. Madhuku, B. Mwakikunga and **S. J. Moloji** (2019) *Investigation of structural and magnetic properties of Co<sup>+</sup> ion implanted indium tin oxide thin films on polyethylene terephthalate (C<sub>10</sub>H<sub>8</sub>O<sub>4</sub>)<sub>n</sub> substrates by 100 keV ions*, *Nuclear Instruments and Methods in Physics Research. Section B*, **444**, 96-102 ([10.1016/j.nimb.2019.02.016](https://doi.org/10.1016/j.nimb.2019.02.016))
29. Bhekumuzi Sfundo Khanyile, Christopher Mtshali, Itani Given Madiba, Aline Simo, Nagla Numan, Kasinathan Kaviyarasu, Nolubabalo Matinise, Mlungisi Nkosi, **Sabata Jonas Moloji** and Malik Maaza (2019) *Effect of varying the vanadium thickness layer of V<sub>2</sub>O<sub>5</sub>/V/V<sub>2</sub>O<sub>5</sub> film on its microstructural and thermochromic properties*, *Journal of Vacuum Science & Technology A*, **37**, 051511 ([10.1116/1.5096249](https://doi.org/10.1116/1.5096249))
30. K. Sudhakar, **S. J. Moloji** and K. Madhusudana Rao (2018) *Green tea mediated synthesis of silver nanoparticles in halloysite nanotubes and their potential antimicrobial properties*, *Journal Material Environmental Science*, **9**, 2975-2980 ([ISSN:2028;2508](https://doi.org/10.1016/j.jmest.2018.05.008))
31. K Sudhakar, **S. J. Moloji** and K. Madhusudana Rao (2017) *Green synthesis and characterization of halloysite nanoclay/curcumin/Ag Hybrid nano material for antibacterial applications*, *Journal of Inorganic Organometallic Polymers and Materials*, **27**, 1450-1456 ([10.1007/s10904-017-0600-2](https://doi.org/10.1007/s10904-017-0600-2))
32. Kuncham Sudhakar, **Sabata Jonas Moloji** and Kummara Madhusudhana Rao (2017) *Graphene oxide/poly (N-isopropyl acrylamide)/sodium alginate-based dual responsive composite beads for controlled release characteristics of chemotherapeutic agent*, *Iranian Polymer Journal*, **26**, 521-530 ([10.1007/s13726-017-0543-z](https://doi.org/10.1007/s13726-017-0543-z))

33. **S. J. Moloji** and M. McPherson (2017), *Depth analysis of crystalline silicon used for radiation-hard detectors*, Acta Physica Polonica A, **132**, 1387-1392 ([10.12693/APhysPolA.132.1387](https://doi.org/10.12693/APhysPolA.132.1387))
34. Issam Derkaoui, Mohammed Khenfouch, Ibrahim Elmokri, **Sabata Jonas Moloji**, Bakang Moses Mothudi, Mokhotjwa Simon Dhlamini, Malik Maaza, Izeddine Zorkani and Anouar Jorio (2016) *Experimental Investigation of the Effect of Graphene Nanosheets on the Optical-Electrical Properties of Vanadium Oxide Nanocomposites*, Graphene, **5**, 14-24 ([10.4236/graphene.2016.51002](https://doi.org/10.4236/graphene.2016.51002))
35. **S. J. Moloji** and M. McPherson (2014) *RBS measurements of metal-doped silicon used for radiation-hard detectors*, Vacuum, **104**, 51-56 ([10.1016/j.vacuum.2013.12.011](https://doi.org/10.1016/j.vacuum.2013.12.011))
36. **S. J. Moloji** and M. McPherson (2013) *Capacitance-voltage behaviour of Schottky diodes fabricated on p-silicon for radiation-hard detectors*, Radiation Physics and Chemistry, **85**, 73-82 ([10.1016/j.radphyschem.2012.12.002](https://doi.org/10.1016/j.radphyschem.2012.12.002))
37. **S. J. Moloji** and M. McPherson (2011) *Radiation-hardness of silicon p-i-n photodiodes operated under illumination by light of different wavelengths*, Nuclear Instruments and Methods in Physics Research. Section A, **632**, 59 ([10.1016/j.nima.2010.12.180](https://doi.org/10.1016/j.nima.2010.12.180))
38. A. Saadoune, **S. J. Moloji**, K. Bekhouche L. Dehimi, M. McPherson N. Sengouga and B. K. Jones (2013) *Modeling of semiconductor detectors Made of defect-engineered silicon: the effective space charge density*, IEEE Transactions on Device and Materials Reliability, **13**, 1-8 ([10.1109/TDMR.2012.2234460](https://doi.org/10.1109/TDMR.2012.2234460))
39. **S. J. Moloji** and M. McPherson (2009) *Current-voltage behaviour of Schottky diodes fabricated on p-type silicon for radiation hard detectors*, Physica B: Physics of Condensed Matter, **404**, 2251 ([10.1016/j.physb.2009.04.021](https://doi.org/10.1016/j.physb.2009.04.021))
40. **S. J. Moloji** and M. McPherson (2009) *The current and capacitance response of radiation-damaged silicon PIN diodes*, Physica B: Physics of Condensed Matter, **404**, 3922 ([10.1016/j.physb.2009.07.123](https://doi.org/10.1016/j.physb.2009.07.123))

#### **Chapter(s)**

1. Sudhakar, K., Sudhakar, K., Reddy, N. N., Rao, K. M., **Moloji, S. J.**, Reddy, A. B. and Sadiku, E. R. (2016) *Polyethylene/Hemicellulose-based Biocomposites and Bionanocomposites, in Polyethylene-Based Biocomposites and Bionanocomposites* (eds P. M. Visakh and S. Lüftl), John Wiley & Sons, Inc., Hoboken, NJ, USA. ([10.1002/9781119038467.ch5](https://doi.org/10.1002/9781119038467.ch5))

#### **Peer reviewed conference proceedings**

1. B. S. Khanyile, I. G. Madiba, C. Mtshali, B. Mabakachaba, **S. J. Moloji**, M. Nkosi, M. Maaza (2022) *Effect of the bottom layer thickness on the structural and optical phase transition properties of V<sub>2</sub>O<sub>5</sub>/V<sub>2</sub>O<sub>5</sub> thin films*, Materials Today: Proceedings, **53**, 454 ([10.1016/j.matpr.2022.01.483](https://doi.org/10.1016/j.matpr.2022.01.483))
2. David O. Idisi, James A. Oke, Evan M. Benecha, **Sabata J. Moloji** and Sekhar C. Ray (2020) *Magnetic properties of graphene oxide functionalized with “Au” and “Fe<sub>2</sub>O<sub>3</sub>” nanoparticles: A comparative study*, Materials Today: Proceedings, **44**, 5037-5043 ([10.1016/j.matpr.2020.02.869](https://doi.org/10.1016/j.matpr.2020.02.869))
3. D. A. Oeba, J. O. Bodunrin and **S. J. Moloji** (2019) *Current-voltage characteristics of aluminium and zinc implanted silicon for radiation detection applications*, Proceedings of the 27th International Symposium Nuclear Electronics and Computing (NEC'2019) Budva, Becici, Montenegro, September 30 – October 2019 ([ISSN:1613-0073](https://doi.org/10.1016/j.matpr.2019.09.073))
4. T. Nkwashu, M. Msimanga and **S. J. Moloji** (2019), *Electrical characterization of undoped and niobium-doped n-type silicon*, Proceedings of SAIP 2019, The 64<sup>th</sup> Annual Conference of the South

African Institute of Physics, Protea Hotel Ranch Resort, Polokwane, 08 July – 12 July 2019 (ISBN: 978-0-620-88875-2)

5. T. B. Moipolai, M. Madhuku and **S. J. Moloji** (2018) *Deposition and characterisation of metallic film precursors for the synthesis of  $\text{Cu}_2\text{ZnSnS}_4$  thin films for photovoltaic applications*, Material Research Society ([10.1557/adv.2018.509](https://doi.org/10.1557/adv.2018.509))
6. I. Derkaoui, M. Khenfouch, I Elmokri, B. M. Mothudi, M. S. Dhlamini, **S. J. Moloji**, I. Zorkani, A. Jorio and M. Maaza (2017), *Structural and optical properties of hydrothermally synthesized vanadium oxides nanobelts*, IOP Conference Series: Material Science and Engineering, **186**, page 012007. ([10.1088/1757-899X/186/1/012007](https://doi.org/10.1088/1757-899X/186/1/012007))
7. M. J. Thebe, **S. J. Moloji** and M. Msimanga, (2015), *Electrical characterization of undoped and niobium-doped n-type silicon*, Proceedings of SAIP 2015, The 60<sup>th</sup> Annual Conference of the South African Institute of Physics, Boardwalk Convention Centre, Port Elizabeth, 29 June - 3 July 2015. (ISBN: 978-0-620-70714-5)
8. **S. J. Moloji**, (2012), *Temperature dependence of current-voltage characteristics of p-silicon Schottky diodes for radiation-hard detectors*, Proceedings of SAIP 2012, The 57<sup>th</sup> Annual Conference of the South African Institute of Physics, University of Pretoria, 9-13 July 2012 (ISBN:9978-1-77592-070-0).

**Peer reviewed national conferences.**

1. G. Motaung, **S. J. Moloji** and M. Msimanga (2018) Cryogenic ion implantation of polyethylene terephthalate (PET) thin films: structural and electrical properties, *SAIP 2018, The 63<sup>rd</sup> Annual conference of the South African Institute of Physics*, University of the Free State, Bloemfontein, 25 – 29 June 2018.
2. M. Maloba, **S. J. Moloji** and M. Msimanga (2018) Ion implanted polyaniline for radiation sensing applications, *SAIP 2018, The 63<sup>rd</sup> Annual conference of the South African Institute of Physics*, University of the Free State, Bloemfontein, 25 – 29 June 2018.
3. M. Masekane, M. Msimanga, **S.J. Moloji** and M. Madhuku (2018) Measurements of heavy ion induced x-ray production cross sections in metallic targets at MeV energies, *SAIP 2018, The 63<sup>rd</sup> Annual conference of the South African Institute of Physics*, University of the Free State, Bloemfontein, 25 – 29 June 2018.
4. K. Khoele, **S. J. Moloji** and M. Madhuku (2018) Study of structural damage in InGaN and InAlN thin films due to Cu ion irradiation, *SAIP 2018, The 63<sup>rd</sup> Annual conference of the South African Institute of Physics*, University of the Free State, Bloemfontein, 25 – 29 June 2018.
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2. M. C. Masekane, I. Bogdanovic, M. Msimanga, Z. Siketic, M. Masenya, **S. J. Moloji** (2023), *Total Ion Beam Analysis using Heavy Ion PIXE*, 26<sup>th</sup> International Conference on Ion Beam Analysis (IBA-2023) and 18<sup>th</sup> International Conference on Particle Induced X-ray Emission (PIXE-2023), Toyama, Japan, 7 – 13 October 2023.
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4. J. O. Bodunrin and **S. J. Moloji** (2022), *Current-voltage characteristics of cadmium-doped p-silicon Schottky diode*, 10<sup>th</sup> International Workshop on Semiconductor Pixel Detectors for Particles and Imaging (PIXEL 2022), Santa FE, NM, USA, 12 – 16 December 2022.
5. M. Masekane, M. Msimanga, **S. J. Moloji** and M. Madhuku (2019), *Measurements of  $^{12}C^{q+}$  and  $^{35}Cl^{q+}$  ion induced X-ray production cross sections in V, Zr and Sn metal oxide target at 0.1-1.0 MeV/u ion velocities*, International Conference on Particle Induced X-ray Emission, Caldas da Rainha, Portugal, 24-29 March 2019.
2. Idisi David Omoefe, Sweety Sarma, **S. J. Moloji** and Sekhar C. Ray (2018), *Electronic, electrical and magnetic properties of graphene-oxide (GO) functionalized with gold nanoparticles (Au: NPs)*, Advanced Energy Materials, Guilford, England, 10-12 March 2018.
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4. O. Oluwaleye, M. Madhuku, B. Mwakikunga and **S. J. Moloji** (2018) *Modification of RF-magnetron sputter deposited zinc oxide thin films by vanadium ion implantation: Electrical and optical properties*, The 4<sup>th</sup> International Conference on Surfaces, Coatings and Nanostructured Materials, South Padre Island, Texas (USA), 29 October -1 November 2018.
5. T.B. Moipolai, M. Madhuku and **S. J. Moloji** (2018) *Synthesis and Characterization of CZTS Thin Films for Photovoltaic Applications*, International Conference on Surface, Coatings and Nanostructured Materials, Western Cape, South Africa, 19 -23 November 2018.
6. K. Khoele, M. Madhuku and **S. J. Moloji** (2018) *Study of structural damage in InGaN and InAlN thin films due to Cu and Er ion irradiation*, International Conference on Surface, Coatings and Nanostructured Materials, Western Cape, South Africa, 19 -23 November 2018.
7. K. Khoele, M. Madhuku and **S. J. Moloji** (2017) *Irradiation effects on Group III-Nitride thin films by light and heavy ions*, The 23<sup>rd</sup> International Conference on Ion Beam Analysis, Shanghai, China, 08-13 October 2017.
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9. K. Sudhakar, **S. J. Moloi** (2017) *Dual responsive alginate/poly(N-isopropyl acrylamide)/graphene oxide composite gels for controlled release studies of anti-cancer drug*, Macro 2017-International Conference on Polymer Science and Technology, Thiruvananthapuram, India, 8-11 January 2017.
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12. O. Oluwaleye, M. Madhuku and **S. J. Moloi** (2016) *Ion beam modification of transparent conducting oxide (TCO) thin films by keV to MeV ions*, International Conference of Young Researchers on Advanced Material, Bangalore, India, 11-15 December 2016.

## 10. Student supervision

### MSc Students

1.

Institution : UNISA  
 Name : Mr. Mohapi Johannes Thebe  
 Duration of supervision : 2012 - 2015  
 Status : **Completed (distinction)**  
 Co-supervisor : Prof. M. Msimanga (TUT)

2.

Institution : UNISA  
 Name : Mr. Maloba Matome  
 Duration of supervision : 2017 - 2019  
 Status : **Completed**  
 Co-supervisor : Prof. M. Msimanga (TUT)

3.

Institution : UNISA  
 Name : Mr. Masedi Carington Masekane  
 Duration of supervision : 2017 - 2019  
 Status : **Completed (distinction)**  
 Co-supervisor : Prof. M. Msimanga (TUT)

4.

Institution : UNISA  
 Name : Mr. Solomon Emmanuel Omogiate  
 Duration of supervision : 2017 – 2021  
 Status : **Completed**  
 Co-supervisor : None

5.

Institution : UNISA  
 Name : Ms. Ramakgahlela Wendy Thoka  
 Duration of supervision : 2018 – 2020  
 Status : **Completed (distinction)**  
 Co-supervisor : Prof. S. Ray (UNISA)

6.

Institution : UNISA  
 Name : Mr. Thabiso Nkwashu

Duration of supervision : 2018 – 2022  
Status : **Completed (distinction)**  
Co-supervisor : Prof. M. Msimanga (TUT)

**7.**  
Institution : UNISA  
Name : Mr. Brighton Mabasa  
Duration of supervision : 2020 – 2022  
Status : **Completed (distinction)**  
Co-supervisor : Dr. Meena D. Lysko (Move Beyond Consulting (Pty) Ltd.)

**8.**  
Institution : UNISA  
Name : Mr. Elijah Mutua Maanzo  
Duration of supervision : 2020 – 2022  
Status : **Completed**  
Co-supervisor : None

**9.**  
Institution : UNISA  
Name : Ms. Gaopalelwe Motaung  
Duration of supervision : 2017 – 2023  
Status : **Completed**  
Co-supervisor : Prof. M. Msimanga (TUT)

**10.**  
Institution : UNISA  
Name : Mr. Matsobane Meshack Makhafola  
Duration of supervision : 2022 to date  
Status : **Continuing**  
Co-supervisor : Dr. M. J. Sithole (UNISA)

### **PhD Students**

**1.**  
Institution : UNISA  
Name : Mr. Duke Ateyh Oeba  
Duration of supervision : 2018 – 2021  
Status : **Completed**  
Co-supervisor : None

**2.**  
Institution : UNISA  
Name : Mr. James Ayodele Oke  
Duration of supervision : 2018 - 2020  
Status : **Completed**  
Co-supervisor : Prof. S. Ray (UNISA)

**3.**  
Institution : UNISA  
Name : Mr. Elson Soul Ganya  
Duration of supervision : 2018 -2020  
Status : **Completed**  
Co-supervisor : Prof. S. Ray (UNISA)

- 4.**  
 Institution : UNISA  
 Name : Mr. Olakunle Oluwaleye  
 Duration of supervision : 2016 - 2020  
 Status : **Completed**  
 Co-supervisor : Dr. M. Madhuku (iThemba LABS, Gauteng)
- 5.**  
 Institution : UNISA  
 Name : Mr. Bhekumuzi Sfundu Khanyile  
 Duration of supervision : 2016 - 2020  
 Status : **Completed**  
 Co-supervisor : Prof. M. Maaza (iThemba LABS)
- 6.**  
 Institution : UNISA  
 Name : Mr. David Omoeffe Idisi  
 Duration of supervision : 2018 - 2022  
 Status : **Completed**  
 Co-supervisor : Prof. S. Ray (UNISA)
- 7.**  
 Institution : UNISA  
 Name : Mr. Joseph Oluwadamilola Bodunrin  
 Duration of supervision : 2019 - 2022  
 Status : **Completed**  
 Co-supervisor : None
- 8.**  
 Institution : UNISA  
 Name : Ms. Tshegofatso Bridgette Moipolai  
 Duration of supervision : 2015 - to date  
 Status : **Continuing**  
 Co-supervisor : Dr. M. Madhuku (iThemba LABS, Gauteng)
- 9.**  
 Institution : UNISA  
 Name : Mr. Maloba Matome  
 Duration of supervision : 2020 – to date  
 Status : **Continuing**  
 Co-supervisor : Prof. M. Msimanga (TUT)
- 10.**  
 Institution : UNISA  
 Name : Mr. Masedi Carington Masekane  
 Duration of supervision : 2021 – to date  
 Status : **Continuing**  
 Co-supervisor : Prof. M. Msimanga (TUT)
- 11.**  
 Institution : UNISA  
 Name : Mr. Elijah Mutua Maanzo  
 Duration of supervision : 2023 – to date  
 Status : **Continuing**  
 Co-supervisor : None
-

## 11. Mentored postdoctoral fellows.

1.

Institution : UNISA  
Name : Kuncham Sudhakar  
Duration of mentoring : 2016 – 2018

2.

Institution : UNISA  
Name of student : Joseph Oluwadamilola Bodunrin  
Duration of mentoring : 2023 – to date

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## 12. References

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**END**

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