Curriculum Vitae

Personal details:

Name and Title: Zinhle Buthelezi, Dr.

Qualification: Ph.D. in Experimental Nuclear Physics (University of Stellenbosch)

Race and Gender: Black Female

Date of Birth: 27 October 1972

Citizenship: South Africa

ID Number: 7210270273087

Contact details: Email: zinhle@tlabs.ac.za or edith.zinhle.buthelezi@cern.ch,

Telephone (work): 021 8431213 mobile: +27 83 315 2888

NRF Rating: C2 (2016 – 2021)

Employment details:

Current Employer: NRF - iThemba LABS

Current Position and Department: Senior Research Scientist, Department of Subatomic Physics

Type of Position: Permanent

Employment History**:**
2000 – 2005: Research Physicist, Radionuclide Production Group, iThemba LABS
2001 – 2003 Fellowships, Dipartimento di Fisica Nucleare, Universita degli Studi di Milano / INFN sezione di Milano, Italy

Research Field and Interest:

High Energy Particle and Nuclear Physics – Heavy Ion Physics
Current Collaboration: ALICE Collaboration at the CERN Large Hadron Collider

Expertise:

Detectors for High Energy Physics, High Energy Physics nuclear models, Radiation Transport codes (FLUKA, GEANT and MCNPX).

Research profile:

2008 – current: I am doing research in High Energy Physics utilising the ALICE (A Large Ion Collider Experiment) detector at the CERN Large Hadron Collider (LHC) in Geneva Switzerland. My main interest is the study of the strongly interacting state of Quantum Chromodynamics (QCD) matter known as the quark-gluon plasma (QGP). The QGP is a primordial state of the Early Universe which existed a few microseconds after the Big Bang. It is produced under extreme conditions of temperature and energy density in

heavy-ion collisions. Few experimental probes can provide vital information about the QGP. I am fascinated by the production of hard probes (charm and beauty quarks as well as electroweak W and Z bosons) via the leptonic decay channel. These particles are produced in initial hard processes. Charm and beauty hadrons are important because they are ideal tomographic tools of the QGP - when they traverse the QGP they interact with it and lose energy in the process and we can learn to which degree they reach thermal equilibrium with their environment. Hence they are modified by the QGP. The electroweak bosons interact weakly and therefore are not modified by the QGP. Thus, they can provide information about the initial conditions of the collisions.

In the ALICE collaboration I am actively involved in all aspect of the Muon Spectrometer and the Upgrade thereof, as well as in related Physics studies using muon particles. Our physics case in ALICE is coordinated under the ALICE Physics Working Group – Heavy Flavour (PWG-HF).

Key Positions within the ALICE Collaboration:
- Member of the ALICE Editorial Board – 2020-2023. The ALICE Collaboration implements rigorous processes to ensure the quality of public results. The Editorial Board manages the publication of ALICE results in peer-reviewed journals. This s review of manuscripts.
- Run Manager for the ALICE Run Coordination – served 2 terms: April and November 2018. This is a position of high responsibility at the experiment, coordinating the detector systems, setting up shift plans based on the physics of interest and ensuring that the instructions are executed by the shift crew.
- Period Run Coordinator for the ALICE Run Coordination – September 2015. This is a position of high responsibility at the experiment, liaising with the LHC operations and reporting to the Run Coordinator, coordinating the detector systems, setting up shift plans based on the physics of interest and ensuring that the instructions are executed by the shift crew.

Current/Ongoing Physics research projects:
- Production of heavy flavours via the leptonic decay channel With ALICE at the LHC.
- Measurement of the production of W-bosons in proton-proton (pp), lead-lead (PbPb) and proton-lead (p-Pb) collisions in ALICE at LHC energies.

Current/Ongoing Infrastructure / Facility Development Project:
- Development of a test-bench for ALICE Muon Identifier (MID) firmware in view of the LHC RUN 3. This work is done in collaboration with French institutes (LPC Clermont Ferrand, Subatech and Orsay) and CERN.
- Muon Tracking Chamber (MCH) Low Voltage Power Supply (LVPS) System. The project is done in collaboration with Saclay (France) and INFN Cagliari (Italy).

2006- 2009
- I was involved in Low Energy Nuclear Physics and Applications utilising the iThemba LABS Separated Sector Cyclotron (SSC). I was part of the K600 group at within the Department of Subatomic Physics whose research interest is nuclear structure and

nuclear reaction mechanisms for light and heavy charged particles. I collaborated with scientists from local universities (WITS, UCT, UWC and Stellenbosch) as well as with International institutes in JAPAN, Germany and England.

- I was involved in the EARTH (Stichting Earth AntineutRino TomograpHy) project (http://www.geoneutrino.nl/) and neutron physics. Here I utilized my expertise in radiation transport codes, e.g. FLUKA and MCNPX. The project involved scientist from South African Institutes (iThemba LABS, UCT, UWC and Stellenbosch), the Netherlands and Finland.

2001 – 2005:
I was employed as a Researcher at the Radionuclide Production Department at iThemba LABS. My research was focused on the measurement of production cross sections for radionuclides used in nuclear medicine.

Strategic Management Professional Positions:

- Deputy Team Leader for South Africa – ALICE (SA-ALICE)
- Scientific Secretary of the South Africa - CERN (SA-CERN) Programme
- Member of the ALICE Muon Institution Board

Post Doctoral Fellow Mentoring

- 2020 – ongoing: Dr Sibaliso Mhlanga
- August 2016 - August 2018 : Dr Amal Sarkar from Mumbia India
- July 2015 – June 2017: Dr Massimiliano Marchisone from Torino (Italy)
- 2012 – 31 July 2015: Dr Francesco Bossù

Interns mentoring in Engineering :

- Mr DO Thys-Dingou: - 2019 Muon readout
- Mr Rene Monteverdi: – 2019 – 2021 Muon readout testbench
- Fabrice Nininahazwe: – 2016-2018 High performance Computing Cluster
- Mr Nathan Boyles: June – August 2016 – High performance Computing Cluster

Postgraduate student supervision:

Degree	Student Name	Gender / Race	Year	University	Topic
PhD	KJ Senosi	Black / Male	2014 – 2017 completed	UCT	Hard probes in the ALICE Forward Muon Spectrometer
	S Mhlanga	Black / Female	July 2016 – 2020 completed	UCT	Heavy flavour muons vs charged particle multiplicity using RUN2 data in ALICE at LHC energies.
	S Delsanto	White /	2018 -	WITS/Torino(Italy)	Study of strangeness

		Female	ongoing		production in pp collision at √s= 5.02 TeV at the LHC and the upgrade of the ALICE Muon Trigger for high luminosity
	TJ Shaba	Black/ Female	2020 - ongoing	NWU	Exploiting the heavy-quark production using the leptonic decay channel with ALICE CERN LHC
	JE Mdhuli	Black/Female	2020 - ongoing	WITS	Probing heavy-quark production vs charged-particle multiplicity in pp collisions at √s= 5.02 TeV with ALICE
M.Sc.	DO Thys-Dingou	Black / Male	2020 ongoing	CPUT	Design and development of the ALICE CRU user logic firmware for the MID readout chain
	Christine Monteverdi	White	2018 – 2020 Completed	Stellenbosch	Measurement of leptons from heavy-quark decays at forward rapidity in ALICE
	N Boyles	Coloured / Male	2017 – 2020 Completed with Distinction	UCT	Design and Development of Tier-3 High Performance Computing Cluster for South Africa - CERN ALICE
	N Dindikazi	Black / Female	2015 – 2016. Completed with Distinction	UZULU	Single muon production vs multiplicity in proton-proton collisions with ALICE
	S Mhlanga	Black / Female	2014 – Jan 2016 Completed	UCT	The study of the production of heavy flavour muons as a function of charged-particle multiplicity in proton-proton collisions at 8 TeV with ALICE at the LHC
	MA Ahmed	Black / Male	2013 Completed	AIMS / UWC	Study of single muon production as a function of multiplicity with ALICE at LHC energies
	KJ Senosi	Black / Male	2011 – 2013. Completed with	UCT	Production of $W^{\pm}$ bosons in the semi-muonic channel at forward

			distinction		rapidity in ALICE
	PWJ Du Toit	White / Male	2011 – 2013. Completed. Graduated with Distinction	University of Pretoria	Analysis of $W^{\pm}$ bosons with ALICE: Effect of alignment on $W^{\pm}$ bosons analysis.
	S Segal	White / male	2009 – 2011. Completed	UCT	Obtaining a direction sensitive anti-neutrino detectors via simulations and experiments with neutrons
	BA Buthaina	Black / female	2008 – 2010. Completed	UCT	Monte Carlo simulations of the iThemba LABS neutron beam facility
	Seforo Mohlalisi	Black / Male	2008 – 2010. Completed	UCT	Implementation of a custom Muon High Level Trigger Monitoring System
	France Lukhele (Deceased)	Black / male	2005-2006. Completed.	UZULU	Radiation shielding calculations by means of MCNPX
B.Sc. Honours	Titus T Masike	Black Male	2016. Completed. Project marked with Distinction	WITS	The production of W bosons in pp at 13 TeV at forward rapidity with ALICE
	Ruan Steyn	White / Male	2008. Completed	University of Stellenbosch	Reactor anti-neutrino monitoring at Koeberg using FLUKA.
	Mathew Segal	White / Male	2007. Completed	UCT	Optimization of ^{10}Boron loaded Organic Liquid Scintillation Detectors for the Detection of Geo-Antineutrinos and their Inherent Directional Information via Monte-Carlo Simulation
	BA Adam	Black / Female	2007. Completed	AIMS / UWC	Monte Carlo simulations of Cobalt-60 Dose Rates for an Industrial Irradiator

Contributions at International Conferences / Workshops:

Invited:

- Overview of results from heavy-ions collisions at ultra-relativistic energies, First Biennial African Conference on Fundamental Physics and Applications, June 28 –

July 4, 2018, Namibia University of Science and Technology, Windhoek, Namibia.

- Plenary speaker at the Women in Engineering for IEEE event, July 11, 2018, iThemba LABS
- Invited Guest Speaker at the NRF National Post-Doctoral Forum, Spier (Stellenbosch) 4-6 Dec 2013. Title of talk: Communication and networking in High Energy

Invited Contributions at International Conferences / Workshops:

- **Invited:** “Probing the QGP with heavy quarks in ALICE at the LHC”. Heavy-ion hysics session, African Nuclear Physics Conference (1-5 July 2019), Protea Hotel Kruger Gate at Kruger National Park in South Africa.
- Overview of results from heavy-ions collisions at ultra-relativistic energies, First Biennial African Conference on Fundamental Physics and Applications, June 28 – July 4, 2018, Namibia University of Science and Technology, Windhoek, Namibia.
- Plenary speaker at the Women in Engineering for IEEE event, July 11, 2018, iThemba LABS Invited Guest Speaker at the NRF National Post-Doctoral Forum, Spier (Stellenbosch) 4-6 Dec 2013. Title of talk: Communication and networking in High Energy

Contributions:

- “ALICE measurements of heavy-flavour production as a function of multiplicity in pp and p-Pb collisions at LHC energies” , 33rd Winter Workshop on Nuclear Dynamics held on 8 – 14 January 2017 at Snowbird Resort, Utah, USA. https://indico.cern.ch/event/562031/.
- "Production of W bosons in p-Pb collisions measured with ALICE at the LHC", XXIII International Workshop on Deep-Inelastic Scattering and Related Subjects Dallas, Texas (27 April - May 1 2015).
- Member of the International Advisory Committee: 14th International Conference on Nuclear Reaction Mechanisms, (Varenna 2015), 15-19 June 2015, Varenna, Italy. http://www.fluka.org/Varenna2015
- Chairperson for Parallel Session, Thursday 4 Dec, International Workshop on Discovery Physics at the LHC, 1-5 Dec 2014, Kruger National Park, South Africa http://www.kruger2014.tlabs.ac.za/wp-content/uploads/2014/02/program1.pdf
- Invited Guest Speaker at the NRF National Post-Doctoral Forum, Spier (Stellenbosch) 4-6 Dec 2013. Title of talk: Communication and networking in High Energy Physics Research.
- "Summary of ALICE results from heavy-flavour measurements from pp and Pb-Pb collisions at LHC energies", International Workshop on Discovery Physics at the LHC, 3-7 Dec 2012, Kruger National Park, South Africa, http://indico.cern.ch/event/165682/
- "Physics with muons in the ALICE experiment at the LHC", Exploring QCD frontiers:

from RHIC and LHC to EIC, January 30 - February 3, 2012 STIAS Conference Center, Stellenbosch, South Africa, http://www.phy.uct.ac.za/conf/cpteic

- "Application of the HLT in the study of W bosons", Annual ALICE Muon Spectrometer workshop,"Study of W+- boson in the ALICE Muon Spectrometer: considerations and analysis using HLT tool" Paul Langevin Center, Aussoix (France), 8-12 June 2009.
- "Study of W+- boson in the ALICE Muon Spectrometer: considerations and analysis using HLT tool",12th International Conference on Nuclear Reaction Mechanism at the Villa Monastero in Varenna (Italy) 15-19 June 2009.
- "Inter comparison on the shielding design calculations by using Monte Carlo and multigroup discrete ordinate radiation transport", 11th Int. Conf. on Nuclear Reaction Mechanism at the Villa Monastero in Varenna (Italy) 12-16 June 2006. http://www.mi.infn.it/~gadioli/Varenna2006/
- “Comprehensive study of the interaction of ^{12}C and ^{16}O with ^{103}Rh at incident energies up to 400 MeV”, VIII International Conference on Nucleus-Nucleus Collisions, June 17-21, 2003, Moscow, Russia
- “Isobaric yields of near-target residues in the interaction of 12C with 16O at an incident energy of 400 MeV”, 10th International Conference on Nuclear Reaction Mechanisms 9 -13 June 2003, Villa Monastero, Varenna (Italy).
- “Production cross sections for 82Sr at iThemba LABS”, 2Nd International Balkan School of Nuclear Physics, 12 -19 Sept 2000, Bodrum, Turkey.

Editorial duties and Paper Reviews:

- Served on the ALICE Internal Review Committee for the paper titles “Measurement of Z-boson production at large rapidity in Pb-Pb collisions at √sNN = 5.02 TeV”, Phys. Lett. B 780 (2018) 372–383.
- Served on the ALICE Internal Review Committee (IRC) for paper titled “*Measurement of electrons from beauty-hadron decays in p-Pb and Pb-Pb collisions at the LHC*”, JHEP 07 (2017) 052.
- Guest Editor for the Proceeding of the 6th International Conference on Hard and Electromagnetic Probes in High-Energy Nuclear Collisions (Hard Probes 2013),Stellenbosch, 4-8 Nov 2014. (http://ees.elsevier.com/npa/default.asp)

Paper / Manuscript Reviews:

- SAIP2015 Conference Proceedings, 2016, 2015, 2014
- Abstract Review Panel, 4th IUPAP International Conference on Women in Physics, www.acitravel.co.za/icwip2011/.

NRF Review Panels:

- CPRR Maths and Physics Panel, 16th -17th November 2015
- Postal Review / assessments of research proposals for NRF - Sept - Oct 2014
- Maths and Physics Peer Review Panel, 2011
- Competitive Support for Unrated Researchers, 08 October 2009.
- Mathematics and Physics Advisory Panel, 4 September 2008,
- Microbiology (Physics) Panel, 16th October 2007

Local Organizing Committees:

- Discovery Physics at the LHC, KRUGER 2016 ttp://www.kruger2016.tlabs.ac.za/
- Workshop on High Energy Particle Physics, iThemba LABS - Gauteng, Johannesburg, Feb. 8th - 10th 2016
- KRUGER2014 Discovery Physics at the LHC, 1-6 Dec 2014, to be held at the Protea Hotel, Kruger Gate, http://www.kruger2014.tlabs.ac.za/
- 6th International Conference on Hard and Electromagnetic Probes in High-Energy Nuclear Collisions (Hard Probes 2013) held on 4 - 8 Nov 2013 at Stellenbosch,
- South Africa. (http://www.phy.uct.ac.za/hp2013/)
- International ALICE MUON Meeting, held at iThemba LABS on 31 April - 4 May 2012
- Launch Conference: South African Women in Physics Program (SAWIPP), Blue-Waters Hotel, Durban on the 3rd and 4th November 2005.

RESEARCH OUTPUT

Refereed / Peer Reviewed Conference Output:

1. Proceedings of Science for the XXIII International Workshop on Deep-Inelastic Scattering PoS(DIS2015)100, “Production of W bosons in p-Pb collisions measured with ALICE at the LHC”, http://pos.sissa.it/archive/conferences/247/100/DIS2015_100.pdf

2. Nuclear Physics in Astrophysics V, Journal of Physics: Conference Series 337 (2012) 012034, “2+ level densities in 40Ca extracted from high energy-resolution (p,p') experiments”, http://iopscience.iop.org/1742-6596/337/1/012034.

3. Journal of Physics Conference Series 312 (2011) 052016,”A high energy-resolution zero degree facility for (p,p') and (p,t) reactions” doi://10.1088/1742-6596/312

4. CERN-Proceedings-2010-001, edited by Francesco Cerutti and Alfredo Ferrari, “Study of W+- boson in the ALICE muon spectrometer: considerations and analysis using the HLT

tool". http://cds.cern.ch/record/1233497

5. CERN-Proceedings-2010-001, edited by Cerutti F. and Ferrari, A. "Binary projectile fragmentation of 12C at an incident energy of 33.3 MeV/nucleon", http://cds.cern.ch/record/1233497

6. CERN-Proceedings-2010-001, editor by Cerutti, F and Ferrari, A, "Proton-induced alpha-cluster knockout from ^{12}C", http://cds.cern.ch/record/1233497

7. Radiation Measurements, Volume 45, Issue 10, December 2010, Special issue PROCEEDINGS OF THE 11TH SYMPOSIUM ON NEUTRON AND ION DOSIMETRY. Edited by DLT Jones and FD Smit, "Monte Carlo simulations of the production of neutrons at iThemba LABS", http://www.sciencedirect.com/science/article/pii/S1350448710002416#

8. Modern Physics Letters A (MPLA), Vol. 25, Issue 21-23, 1833-1837, "Cluster states in ^{12}C and ^{14}C", 10.1142/S0217732310000435.

9. Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment. Volume 613, Issue 3, 11 February 2010, Pages 389–391, "Title of Contribution Manufacturing of calcium, lithium and molybdenum targets for use in nuclear physics experiments" 10.1016/j.nima.2009.09.082

10. NUCLEAR STRUCTURE AND DYNAMICS '09: Proceedings of the International Conference: AIP Conference Proceedings, 1165, 323 (2009), "Title of Contribution Factorization of the Cross Sections for the ^{12}C(p,pa)^{8}Be(g.s) reaction at an Incident Energy of 100 MeV", http://dx.doi.org/10.1063/1.3232105

11. NUCLEAR STRUCTURE AND DYNAMICS '09: Proceedings of the International Conference, AIP Conference Proceedings, 1165, 1 (2009), "Cluster Structure of ^{12}C and ^{11}Be", http://dx.doi.org/10.1063/1.3232055.

12. Nuclear Instruments and Methods in Physics Research A 590, Issue 1-3, "Making of targets for physics experiments at iThemba LABS", doi:10.1016/j.nima.2008.02.06

13. Nuclear Physics A 808, Vol. 2. Edited by S. Nagamiya, T Motobayashi, M Oka, R.S Hayano and T Nagae, "Title of Contribution Reaction mechanism for proton-induced alpha and 3He emission into the continuum at incident energies of 100 to 200 MeV. http://inpc2007.riken.jp/index.files/parallel_G.html#G5_7

14. Proceedings of the 11th International Conference on Nuclear Reaction Mechanisms, Villa Monastero, 12-16 June 2006. Editors: E. Gadioli; Publisher: Università di Milano, 2006, Ricerca scientifica ed educazione permanente., Supplemento n. 126, "Design calculations for the local radiation shield of a radioisotope production target bombardment station – a comparative study", http://www.mi.infn.it/~gadioli/Varenna2006/Proceedings/Buthelezi_Z.pdf

15. Proceedings of the 11th International Conference on Nuclear Reaction Mechanisms, Edited by E. Gadioli. Varenna, 9-12 June 2006. Ricerca Scientifica ed Educazione Permanente, Supplemento N.126, "Title of Contribution Production of Intermediate Mass Fragments in the Interaction of 12C with 12C at incident energies of 200 MeV and 400

MeV", http://www.mi.infn.it/~gadioli/Varenna2006/Proceedings/Fortsch_S.pdf

16. Proceedings of the Eighth International Conference on Nucleus-Nucleus Collisions. Edited by Yu Oganessian and R. Kalpakchieva. Nuclear Physics, Vol. A734 (2004) 553-556. "Incomplete fusion of projectile fragments in the interaction of ^{12}C and ^{16}O up to 33 MeV per nucleon", 10.1016/j.nuclphysa.2004.01.103

17. Proceedings of the 10th International Conference on Nuclear Reaction Mechanisms. Edited by E. Gadioli. Varenna, 9 - 13 June 2003, Ricerca Scientifica ed Ediucazione Permanente. Supplemento N. 122: 349-358, "Isobaric yields of near-target residues in the interaction of 12C with 16O at an incident energy of 400 MeV", http://www.mi.infn.it/~gadioli/Varenna2003.htm

Refereed / Peer Reviewed Journals:

ALICE Collaboration papers:

1. I appear in 197 publications by the ALICE Collaboration. https://aliceinfo.cern.ch/ArtSubmission/publications

Other Publications:

1. Wavelet signatures of *K*-splitting of the Isoscalar Giant Quadrupole Resonance in deformed nuclei from high-resolution (p,p') scattering off ^{146,148,150}Nd. C.O. Kureba, Z. Buthelezi, J. Carter, G.R.J. Cooper, R.W. Fearick, S.V. Förtsch, M. Jingo, W. Kleinig, A. Krugmann, A.M. Krumbolz, J. Kvasil, J. Mabiala, J.P. Mira, V.O. Nesterenko, P. von Neumann-Cosel, R. Neveling, P. Papka, P. -G. Reinhard, A. Richter, E. Sideras-Haddad, F.D. Smit, G.F. Steyn, J.A. Swartz, A. Tamii, I.T. Usman, Phys.Lett. B779 (2018) 269-274 (2018-04-10).
2. Spectroscopy of narrow, high-lying, low-spin states in ^{20}Ne. Physical Review C Volume 91 No.3. (2015) 034317, J. A. Swartz, B. A. Brown, P. Papka, F. D. Smit, R. Neveling, E. Z. Buthelezi, S. V. Förtsch, M. Freer, Tz. Kokalova, J. P. Mira, F. Nemulodi, J. N. Orce, W. A. Richter, and G. F. Steyn.
3. Precision measurement of the 9.641 MeV, 3- State in 12C, Physics Review C87 (2013) 5, 057307, Tz. Kokalova, M. Freer, Z. Buthelezi, J. Carter, R.W. Fearick, S.V. Fortsch, H. Fujita, R. Neveling, P. Papka, F.D. Smit, J. A Swartz and I Usman.
4. No evidence of an 11.16 MeV 2+ state in 12C, Physics Review C 86 (2012) 037301, F. D. Smit, F. Nemulodi, Z. Buthelezi, J. Carter, R. W. Fearick, S. V. Fortsch, M. Freer, H. Fujita, M. Jingo, C. O. Kureba, J. Mabiala, J. Mira, R. Neveling, P. Papka, G. F. Steyn, J. A. Swartz, I. T. Usman and J. J. Van Zyl
5. Consistent analysis of the 2+ excitation of the 12C Hoyle state populated in proton and α-particle inelastic scattering, Physics Review C 86 (2012) 034320, M. Freer, M. Itoh, T. Kawabata, H. Fujita, H. Akimune, Z. Buthelezi, J. Carter, R. W. Fearick, S. V. Fortsch, M. Fujiwara, U. Garg, N. Hashimoto, K. Kawase, S. Kishi, T. Murakami, K. Nakanishi, Y. Nakatsugawa, B. K. Nayak, R. Neveling, S. Okumura, S. M. Perez, P. Papka, H. Sakaguchi, Y. Sasamoto, F. D. Smit, J. A. Swartz, H.

Takeda, S. Terashima, M. Uchida, I. Usman, Y. Yasuda, M. Yosoi, and J. Zenihiro.

6. Fine structure of the isoscalar giant quadrupole resonance in 40Ca due to Landau damping, Physics Letters B 698 (2011) 192 -195, I. Usman, Z. Buthelezi, J. Carter, G.R.J. Cooper, R.W. Fearick, S.V. Fortsch, H. Fujita, Y. Fujita, Y. Kalmykov, P. von Neumann-Cosel, R. Neveling, P. Papakonstantinou, A. Richter, R. Roth, A. Shevchenko, E. Sideras-Haddad, F.D. Smit.
7. Level density of 2+ states in 40Ca from high energy-resolution (p,p') experiments, Physics Review C 84 (2011) 112301. I. Usman, Z. Buthelezi, J. Carter, G. R. J. Cooper, R. W. Fearick, S. V. Fortsch, H. Fujita, Y. Kalmykov, P. von Neumann-Cosel, R. Neveling, I. Poltoratska, A. Richter, A. Shevchenko, E. Sideras-Haddad, F. D. Smit, and J. Wambach.
8. High energy-resolution zero-degree facility for light ion scattering and reactions at iThemba LABS, Journal Nuclear Instrument and Methods in Physics Research A: Accelerators, Spectrometers, Detectors and Associated Equipment, Volume 654. Issue 1 (2011) 29 - 39, R. Neveling, H. Fujita, F.D. Smit, T. Adachi, G.P.A. Berg, E.Z. Buthelezi, J. Carter, J.L. Conradie, M. Couder, R.W. Fearick, S.V. Fortsch, D.T. Fourie, Y. Fujita, J. Gorres, K. Hatanaka, M. Jingo, A.M. Krumbholz, C.O. Kureba, J.P. Mira, S.H.T. Murray, P. von Neumann-Cosel, S. O'Brien, P. Papka, I. Poltoratska, A. Richter, E. Sideras-Haddad, J.A. Swartz, A. Tamii, I.T. Usman, J.J. van Zyl.
9. Cluster structure of 12C and 11B, Nuclear Physics A 834 (2010)621c-626c, M. Freer, H. Fujita, Z. Buthelezi, J. Carter, R.W. Fearick, S.V. Foertsch, R. Neveling, S.M. Perez, P.Papka, F.D. Smit, J.A. Swartz, I. Usman, P.J. Haigh, N.I. Ashwood, T. Bloxham, N. Curtis, P. McEwan, H.G. Bohlen, T. Dorsch. Tz. Kokalova, Ch. Schulz and C. Wheldon.
10. Manufacturing of calcium, lithium and molybdenum targets for use in nuclear physics experiments, Nuclear Instruments and Methods in Physics Research A 613 (2010) 389-391, P. Papka, E.Z. Buthelezi, R.M. Lieder , R. Neveling and R.T Newman.
11. 2+ excitation of the 12C Hoyle state,Physical Review C 79 (2009) 054612, M Freer, H. Fujita, Z. Buthelezi, J Carter, R.W. Fearick, S. V. Fortsch, R. Neveling, S.M. Perez, P. Papka, F. D. Smit, J.A. Swartz and I. Usman.
12. Analyzing power distributions of the 12C(p,pa)8Be(g.s) reaction at an incident energy of 100 MeV, Journal The Frontiers of Physics, European Physics Letters Volume 85 (2009) 22001, J. Mabiala, E.Z. Buthelezi, S.V. Fortsch, R. Neveling, F. D. Smit, G.F. Steyn and J.J. Van Zyl.
13. Proton-induced alpha-cluster knockout from 12C, Europhysics Letter Volume 85 (2009) 22001, A. A. Cowley, J. Mabiala, E. Z. Buthelezi, S. V. Fortsch, R. Neveling, F. D. Smit, G. F Steyn and J. J. van Zyl.
14. Analyzing power and cross section distributions of the C-12 (p, palpha) Be-8 cluster

knockout reaction at an incident energy of 100 MeV, Physics Review C 79 (2009) 054612, J. Mabiala, A.A. Cowley, S.V. Fortsch, E.Z. Buthelezi, R. Neveling, F.D. Smit, G.F. Steyn , J.J. and Van Zyl.

15. Analyzing power of the 40Ca(p,pa) reaction at 100 MeV, Physics Review, C 77 (2008) 037601-1, R. Neveling, A.A. Cowley, Z. Buthelezi, S.V. Fortsch, H. Fujita, G.C. Hillhouse, J.J. Lawrie, G.F. Steyn, F.D. Smit, S.M. Wyngaardt, N.T. Botha, L. Mudau, and S.S. Ntshangase.
16. Excitation functions for the production of 82Sr in natRb(p,xn) nuclear reactions at energies up to 100 MeV, Applied Radiation and Isotopes Volume 64 No 8 (2006) 915 – 924, E.Z. Buthelezi, F. M. Nortier and I.W. Schroeder.
17. Excitation function of evaporation residue in the interaction of 16O with 103Rh at incident energies up to 400 MeV. European Physics. Journal, A28 (2006) 193-203, E.Z. Buthelezi, F. Cerutti, E. Gadioli, G.F. Steyn, A. Pepe, S.H. Connell, and A.A. Cowley
18. Production of 3He and 6He fragments in the interaction of 12C with 93Nb at 400 MeV. Nuclear Physics A 761 (2005) 190 -199, Mudau L.J., Cerutti F., Gadioli E. Mairani A., S. V. Fortsch, Buthelezi E.Z. Steyn G.F., Connell S.H., Lawrie J.J., Nevelling R., Smit F.D. and Sideras-Heddad E.
19. Excitation functions of residues in the interaction of 12C with 103Rh up to an incident energy of 400 MeV, Nuclear Physics A 753 (2005) 29 – 52, E.Z. Buthelezi, Cerutti F., Gadioli E., Steyn G.F., Connell S.H. and Cowley A.A.
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