


Curriculum vitae



PERSONAL INFORMATION **Bonginkosi Vincent Kheswa**

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 **Skype Name** Bonginkosi Kheswa **Title** Dr.

Gender Male | **Date of birth** 08 May 1987 | **Nationality** South African

CAREER PROFILE SUMMARY

I am currently a lecturer in the Department of Physics at the University of Johannesburg. My responsibilities include teaching undergraduate physics modules (Mechanics, Nuclear Physics, Thermodynamics, Electricity and Magnetism) as well as the supervision of postgraduate students. I joined the institution in February 2017 after gaining 2 years of postdoctoral research experience at iThemba LABS (Laboratory for Accelerator-Based Science) in the year 2015, and the University of Oslo in the year 2016. My research is mainly on experimental nuclear structure and nuclear astrophysics. My work has been published in high impact peer-reviewed journals (such as Physical Review C and Physics Letters B). I have a SCOPUS h-index of 5 and supervised 4 MSc students to completion.

ACADEMIC QUALIFICATIONS

2012–2014 **PhD in Physics (Nuclear Physics) - Thesis Title: Impact of the ^{138,139}La Radiative Strength Functions and Nuclear Level Densities on the Galactic Production of ¹³⁸La**
University of Stellenbosch, South Africa

2010–2011 **MSc in Physics (coursework and research thesis)**
University of Stellenbosch, South Africa

RESEARCH AND TEACHING EXPERIENCE

February 2017 – present: **Physics Lecturer**

Institution: University of Johannesburg (Johannesburg, South Africa)

January 2016 – January 2017: **Postdoctoral Researcher**

Institution: University of Oslo, Department of Physics (Norway, Europe)

April 2012 – January 2016: **Junior Research Scientist and Postdoctoral Researcher**

Institution: iThemba LABS, Department of Physics (Cape Town, South Africa)

February 2011 – March 2016: **Research Scholar**

Institution: **Council for Scientific and Industrial Research, Department of Mathematical Modelling (Pretoria, South Africa)**

February 2010 – January 2011: **Graduate-in-Training Scientist**

Institution: **Nuclear Energy Corporation of South Africa, Department of Research and Development (Pretoria, South Africa)**

POSTGRADUATE STUDENT SUPERVISION

- Nomcebo Yende, MSc Physics, University of Johannesburg, Project in Progress
- Teffo Seakamela, PhD Mechanical Engineering, University of Johannesburg, Project in Progress
- Mvuyisi Mbabane, MSc Physics, University of Johannesburg, Completed in year 2018
- Christiaan Brits, MSc Physics, University of Stellenbosch, Completed in year 2016
- Kgashane Malatji, MSc Physics, Western Cape University, Completed in year 2016
- Bonginkosi Zikhali, MSc Physics, University of Zululand, Completed in year 2016

POSTGRADUATE THESIS EXAMINATION

- Served as External Examiner for MSc thesis of Mohamed Kamil, University of the Western Cape, January 2019
- Served as External Examiner for MSc thesis of Cebo Ngwetsheni, University of the Western Cape, November 2018
- Served as External Examiner for MSc thesis of Abel Sithole, University of the Western Cape, July 2017

ASSESSMENT OF RESEARCH PROPOSALS FOR THE NATIONAL RESEARCH FOUNDATION

- Served as Reviewer for Competitive Programme for Rated Researchers, June 2019
- Served as Reviewer for Research Chair in Nuclear Physics, August 2018
- Served as Reviewer for South Africa/France PROTEA Programme, September 2018
- Served as Reviewer for iThemba LABS Physics Summer School, January 2018

CONFERENCES

- Oral presentation at the International Conference on Collective Motion in Nuclei under Extreme Conditions, Cape Town, South Africa, November 2018

- Invited lectures at the International Workshop for Advanced Nuclear Reactions and Applications in Astrophysics, University of Stellenbosch, South Africa, November 2017
- Invited oral presentation at the 5th International Workshop for Nuclear Level Density and Gamma Strength, University of Oslo, Norway, May 2015
- Oral presentation at the International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics, Dresden University of Technology, Germany, August 2014
- Oral presentation at the South African Institute of Physics Conference, University of Johannesburg, South Africa, July 2014
- Oral presentation at the Energy Postgraduate Conference, iThemba LABS, South Africa, August 2014
- Invited oral presentation at the 4th International Workshop on Nuclear Level Density and Gamma Strength, University of Oslo, Norway, May 2013
- Poster presentation at the South African Nuclear Human Asset and Research Programme Postgraduate Conference, iThemba LABS, August 2009

RECENT ACADEMIC AWARDS

- Award for best PhD oral presentation at the South African Institute of Physics (SAIP) conference, which took place at the University of Johannesburg, July 2014
- Faculty of Science PhD award from the University of Stellenbosch for exceeding expectations, December 2014
- Certificate of appreciation, from the Western Cape Department of Education, for tutoring grade 12 physical science learners, May 2013
- Six months scholarship in technical nonproliferation and disarmament studies at the University of Oslo, January 2013

LANGUAGE PROFICIENCY

Mother tongue Zulu

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Good	Good	Fluent	Fluent	Good
Xhosa	Good	Good	Fluent	Fluent	Good

OTHER SKILLS

Computer skills:

- LaTeX and Microsoft Office Applications (Word, Excel and PowerPoint), MAC, Windows and Linux
- C++ Programming Language

Valid driving license: Code B

Planning and Organisational Skills:

- Served as local organizing committee member for the African Nuclear Physics Conference which took place at Kruger National Park, July 2019
- Successfully planned and organized workshops at the University of Fort Hare and iThemba LABS, on behalf of the National Research Foundation (NRF) of South Africa, September 2015

RESEARCH OUTPUTS

List of Publications:

- **Nuclear level densities and gamma-ray strength functions of Ta-180, Ta-181, Ta-182**
CP Brits, KL Malatji, M Wiedeking, **B Kheswa**, S Goriely, FL Garrote, DL Bleuel, F Giacoppo, A Gorgen, M Guttormsen, K Hadynska-Klek, TW Hagen, S Hilaire, VW Ingeberg, H Jia, M Klintefjord, AC Larsen, SNT Majola, P Papka, S Peru, B Qi, IT Renstrom, SJ Rose, E Sahin, S Siem, GM Tveten, F Zeiser
Physical Review C **99** (2019) 054330
<https://doi.org/10.1103/PhysRevC.99.054330>
- **Re-estimation of ^{180}Ta nucleosynthesis in light of newly constrained reaction rates**
K.L.Malatji, M.Wiedeking, S.Goriely, C.P.Brits, **B.V.Kheswa**, F.L.Bello Garrote, D.L.Bleuel, F.Giacoppo, A.Görgen, M.Guttormsen, K.Hadynska-Klek, T.W.Hagen,V.W.Ingeberg, M.Klintefjord, A.C.Larsen, P.Papka, T.Renstrøm, E.Sahin, S.Siem, L.Siess, G.M.Tveten, and F.Zeiser
Physics Letters B **791** (2019) 403
<https://doi.org/10.1016/j.physletb.2019.03.013>
- **Low-lying positive parity bands in ^{162}Yb**
L. Mdletshe, S.S. Ntshangase, J.F. Sharpey-Schafer, S.N.T. Majola, T.R.S. Dinoko, N.A. Khumalo, E.A. Lawrie, R.A. Bark, T.D. Bucher, N. Erasmus, P. Jones, S. Jongile, **B.V. Kheswa**, J.J. Lawrie, L. Makhathini, K.L. Malatji, B. Maqabuka, J. Ndayishimye, S.P. Noncolela, O. Shirinda, and M.A. Sithole.
European Physical Journal A **54** (2018) 176
<https://doi.org/10.1140/epja/i2018-12613-4>
- **Photoneutron cross sections for Ni isotopes: Toward understanding (n, γ) cross sections relevant to weak s-process nucleosynthesis**
H Utsunomiya, T Renstrøm, GM Tveten, S Goriely, S Katayama, T Ari-izumi, D Takenaka, D Symochko, **BV Kheswa**, VW Ingeberg, T Glodariu, Y-W Lui, S Miyamoto, AC Larsen, JE Midtbø, A Gorgen, S Siem, L Crespo Campo, M Guttormsen, S Hilaire, S Péru, AJ Koning
Physical Review C **98** (2018) 054619
<https://doi.org/10.1103/PhysRevC.98.054619>
- $^{137,138,139}\text{La}(n,\gamma)$ cross sections constrained with statistical decay properties of $^{138,139,140}\text{La}$ nuclei
B. V. Kheswa, M. Wiedeking, J. A. Brown, A. C. Larsen, S. Goriely, M. Guttormsen, F. L. Bello Garrote, L. A. Bernstein, D. L. Bleuel, T. K. Eriksen, F. Giacoppo, A. Gorgen, B. L. Goldblum, T. W. Hagen, P. E. Koehler, M. Klintefjord, K. L. Malatji, J. E. Midtbø, H. T. Nyhus, P. Papka, T. Renstrøm, S. J. Rose, E. Sahin, S. Siem, and T. G. Tornyi
Physical Review C **95** (2017) 045805
<https://doi.org/10.1103/PhysRevC.95.045805>

- Low-energy enhancement and fluctuations of γ -ray strength functions in $^{56, 57}\text{Fe}$: test of the Brink–Axel hypothesis**
 A. C. Larsen, M. Guttormsen, N. Blasi, A. Bracco, F. Camera, L. Crespo Campo, T. K. Eriksen, A. Görgen, T. W. Hagen, V. W. Ingeberg, **B. V. Kheswa**, S. Leoni, J. E. Midtb , B. Million, H. T. Nyhus, T. Renstrom, S. J. Rose, I. E. Ruud, S. Siem, T. G. Tornyi, G. M. Tveten, A. V. Voinov, M. Wiedeking, and F. Zeiser
Journal of Physics G: Nuclear and Particle Physics **44** (2017) No. 6, 064005
<http://dx.doi.org/10.1088/1361-6471/aa644a>
- Low-energy enhancement in the γ -ray strength functions of $^{73,74}\text{Ge}$**
 T. Renstrøm, H.-T. Nyhus, H. Utsunomiya, R. Schwengner, S. Goriely, A. C. Larsen, D. M. Filipescu, I. Gheorghe, L. A. Bernstein, D. L. Bleuel, T. Glodariu, A. Görgen, M. Guttormsen, T. W. Hagen, **B. V. Kheswa**, Y.-W. Lui, D. Negi, I. E. Ruud, T. Shima, S. Siem, K. Takahisa, O. Tesileanu, T. G. Tornyi, G. M. Tveten, and M. Wiedeking
Physical Review C **93** (2016) 064302
<https://doi.org/10.1103/PhysRevC.93.064302>
- Nature of low-lying electric dipole resonance excitations in ^{74}Ge**
 D Negi, M Wiedeking, EG Lanza, E Litvinova, A Vitturi, RA Bark, LA Bernstein, DL Bleuel, S Bvumbi, TD Bucher, BH Daub, TS Dinoko, JL Easton, A Görgen, M Guttormsen, P Jones, **BV Kheswa**, NA Khumalo, AC Larsen, EA Lawrie, JJ Lawrie, SNT Majola, LP Masiteng, MR Nchodu, J Ndayishimye, RT Newman, SP Noncolela, JN Orce, P Papka, L Pellegrini, T Renstrøm, DG Roux, R Schwengner, O Shirinda, S Siem
Physical Review C **94** (2016) 024332
<https://doi.org/10.1103/PhysRevC.94.024332>
- Spectroscopy of ^{155}Yb : Structure evolution in the $N = 85$ isotones**
 XQ Li, C Xu, SQ Zhang, H Hua, J Meng, RA Bark, QB Chen, CY Niu, R Han, SM Wyngaardt, SY Wang, S Wang, B Qi, L Liu, LH Zhu, Z Shi, GL Zhang, BH Sun, XY Le, CY Song, YL Ye, DX Jiang, FR Xu, ZH Li, JJ Sun, Y Shi, PW Zhao, WY Liang, CG Li, CG Wang, XC Chen, DP Sun, C Liu, ZQ Li, P Jones, EA Lawrie, JJ Lawrie, M Wiedeking, TD Bucher, T Dinoko, BV Kheswa, L Makhathini, SNT Majola, J Ndayishimye, SP
Physical Review C **94** (2016) 024337
<https://doi.org/10.1103/PhysRevC.94.024337>
- Search for two-phonon octupole excitations in ^{146}Gd**
 J.N. Orce, M. Kumar Raju, N.A. Khumalo, T.S. Dinoko, P. Jones, R.A. Bark, E.A. Lawrie, S.N.T. Majola, L.M. Robledo, B. Rubio, M. Wiedeking, J. Easton, E.A. Khaleel, **B.V. Kheswa**, N. Kheswa, M.S. Herbert, J.J. Lawrie, P.L. Masiteng, M.R. Nchodu, J. Ndayishimye, D. Negi, S.P. Noncolela, S.S. Ntshangase, P. Papka, D.G. Roux, O. Shirinda, P.S. Sithole, and S.W. Yates
European Physical Journal A **52** (2016) 166
<https://doi.org/10.1140/epja/i2016-16166-2>
- Galactic production of ^{138}La : impact of $^{138,139}\text{La}$ statistical properties**
BV Kheswa, M Wiedeking, F Giacoppo, Stéphane Goriely, Magne Guttormsen, Ann-Cecilie Larsen, FL Bello Garrote, TK Eriksen, Andreas Görgen, TW Hagen, PE Koehler, M Klintefjord, Hilde Therese Nyhus, P Papka, Therese Renstrøm, S Rose, E Sahin, Sunniva Siem, T Tornyi
Physics Letters B **744** (2015) 268
<https://doi.org/10.1016/j.physletb.2015.03.065>
- Level densities and thermodynamical properties of Pt and Au isotopes**
 F. Giacoppo, F. L. Bello Garrote, L. A. Bernstein, D. L. Bleuel, T. K. Eriksen, R. B. Firestone, A. Görgen, M. Guttormsen, T. W. Hagen, **B. V. Kheswa**, M. Klintefjord, P. E. Koehler, A. C. Larsen, H. T. Nyhus, T. Renstrøm, E. Sahin, S. Siem, T. Tornyi
Physical Review C **90** (2014) 054330
<https://doi.org/10.1103/PhysRevC.90.054330>
- Statistical gamma-ray decay studies at iThemba LABS**
 M. Wiedeking, L.A. Bernstein, D.L. Bleuel, C.P. Brits, K. Sowazi, A. Görgen, B.L. Goldblum, M. Guttormsen, **B.V. Kheswa**, A.C. Larsen, S.N.T. Majola, K.L. Malatji, D. Negi, T. Nogwanya, S. Siem and B.R. Zikhali
European Physical Journal Web of Conferences **146** (2017) 05006
<https://doi.org/10.1051/epjconf/201714605006>

- **Resonances in odd-odd ^{182}Ta**
 C.P. Brits, M. Wiedeking, F.L. Bello Garrote, D.L. Bleuel, F. Giacoppo, A. Gorgen, M. Guttormsen, K. Hadynska-Klek, T.W. Hagen, V.W. Ingeberg, **B.V. Kheswa**, M. Klintefjord, A.C. Larsen, K.L. Malatji, H.T. Nyhus, P. Papka, T. Renstrom, S. Rose, E. Sahin, S. Siem, G.M. Tveten, and F. Zeiser
European Physical Journal Web of Conferences **146 (2017) 05012**
<https://doi.org/10.1051/epjconf/201714605012>
- **Nuclear level densities and γ -ray strength functions of $^{180,181}\text{Ta}$ and neutron capture cross sections**
 K.L. Malatji, **B.V. Kheswa**, M. Wiedeking, F.L. Bello Garrote, C.P. Brits, D.L. Bleuel, F. Giacoppo, A. Gorgen, M. Guttormsen, K. Hadynska-Klek, T.W. Hagen, V.W. Ingeberg, M. Klintefjord, A.C. Larsen, H.T. Nyhus, T. Renstrom, S. Rose, E. Sahin, S. Siem, G.M. Tveten and F. Zeiser
European Physical Journal Web of Conferences **146 (2017) 01010**
<https://doi.org/10.1051/epjconf/201714601010>
- **Nuclear level densities and gamma-ray strength functions of $^{145,149,151}\text{Nd}$ isotopes**
 K O Ay, M Ozgur, E Algin, M Guttormsen, F L Bello Garrote, L Crespo Campo, A Gorgen, T W Hagen, V W Ingeberg, **B V Kheswa**, M Klintefjord, A C Larsen, J E Midtbo, V Modamio, T Renstrom, S J Rose, E Sahin, S Siem, G M Tveten and F Zeiser
Journal of Physics: Conference Series **766 (2016) 012027**
<https://doi.org/10.1088/1742-6596/766/1/012027>
- **Observation of low-lying resonances in the quasicontinuum of $^{195,196}\text{Pt}$ and enhanced astrophysical reaction rates**
 F. Giacoppo, F. L. Bello Garrote, T. K. Eriksen, A. Gorgen, M. Guttormsen, T. W. Hagen, A. C. Larsen, **B. V. Kheswa**, M. Klintefjord, P. E. Koehler, L. G. Moretto, H. T. Nyhus, T. Renstrom, E. Sahin, S. Siem and T. G. Tornyi
European Physical Journal Web of Conferences **93 (2015) 01039**
<https://doi.org/10.1051/epjconf/20159301039>
- **Statistical nuclear properties and synthesis of ^{138}La**
B. V. Kheswa, M. Wiedeking, F. Giacoppo, S. Goriely, M. Guttormsen, A. C. Larsen, F. L. Bello Garrote, T. K. Eriksen, A. Gorgen, T. W. Hagen, P. E. Koehler, M. Klintefjord, H. T. Nyhus, P. Papka, T. Renstrom, S. Rose, E. Sahin, S. Siem and T. Tornyi
European Physical Journal Web of Conferences **93 (2015) 04005**
<https://doi.org/10.1051/epjconf/20159304005>
- **High resolution $^{148}\text{Nd}(^3\text{He},\text{ny})$ two proton stripping reaction and the structure of the 0_2^+ state in ^{150}Sm**
 J. F. Sharpey-Schafer, P. Papka, S. P. Bvumbi, P. M Jones, P. Vymers, T. D. Bucher, T. S. Dinoko, J. L. Easton, M. S. Herbert, **B. V. Kheswa**, N. Khumalo, E. A. Lawrie, J. J. Lawrie, S. N. T. Majola, J. Ndayishimye, D. Negi, S. P. Noncolela, J. N. Orce, O. Shirinda, P. Sithole, M. A. Stankiewicz and M. Wiedeking
European Physical Journal Web of Conferences **66 (2014) 02116**
<https://doi.org/10.1051/epjconf/20146602116>