

# Physics Comment

*A Southern African Physics Magazine*



# Physics Comment – Vol. 12, Issue 1–April 2019

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It is with great sadness that we report the loss of another top Physics researcher with speciality in Astronomy. Professor Michael Feast, passed away on 1 April, aged 92. Professor Feast served on the SAIP council from 1993-1999, was awarded the de Beers Gold medal in 1992, and was a fellow of the South African Institute of Physics. Professor Feast has made an immense contribution to South African Physics and his research impacted the international community over a distinguished career. Rest in peace, Professor Feast.

The Department of Physics of the University of Venda, organisers of the 64th Annual Conference of the South African Institute of Physics are looking forward to your participation at the conference which will be hosted at the Protea Ranch Hotel in Polokwane during the period, 9-12 July 2019. The conference will be preceded on 8 July by a Winter School focused on "Renewable Energy and Energy Materials".

With best wishes from the editorial Team.



Prof. Deena Naidoo



Dr Hellen Chuma



Dr Buyi Sondezi

**With contributions from the SAIP Office:**

Ndanganeni Mahani (Articles)

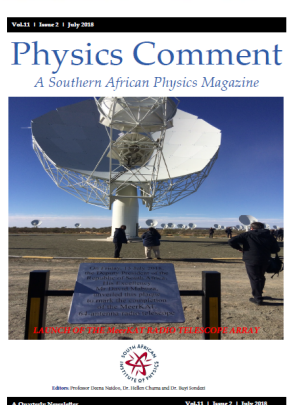
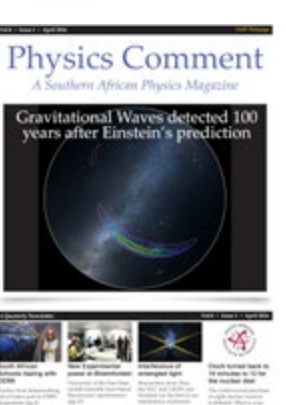
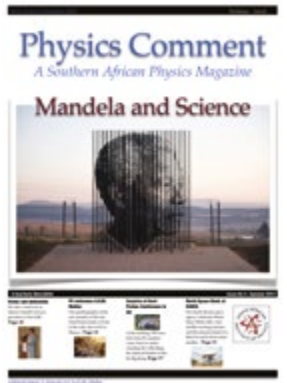
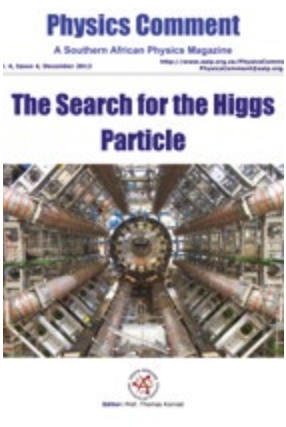
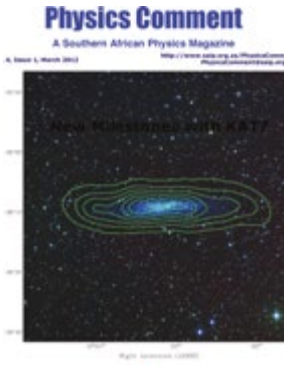
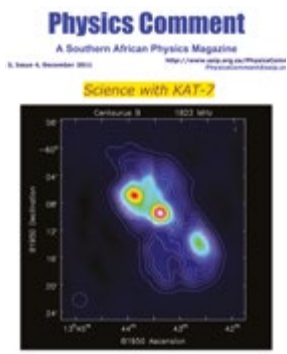
Tebogo Mokhine (Layout)

Brian Masara (Articles)

*Physics Comment is a magazine published by the South African Institute of Physics (SAIP) and appears quarterly. The vision of the SAIP is to be the voice of Physics in South Africa.*



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2011 - 2019

## *President's Corner: Message from Professor Patrick Woudt on behalf of the Council of SAIP*

The first months of the year have come and gone very quickly. With only three months until the SAIP conference in Polokwane, all eyes are now on this highlight in our annual calendar. At the time when this issue goes to print, there is one week left to submit your abstract for our annual conference.

Please make use of this opportunity to present your latest research at the meeting, and come and network with colleagues from around the country and with the visiting academics and distinguished guests from around the world.

The SAIP council has been busy with a number of activities to ensure the long-term sustainability of the activities of the institute.

We have successfully applied to become a public benefit organisation (PBO) which will allow us to start fundraising to support a number of the core activities of the SAIP, such as the successful teacher development workshops across the country and other strategic goals which emerged out of the Review of Physics Training in South Africa.

I refer you to the strategic plan on the enhancement of physics training in South Africa:

([http://www.saip.org.za/images/stories/documents/Projects/SAIP\\_Strategy\\_on\\_Improving\\_Physics\\_Education\\_doc.compressed.pdf](http://www.saip.org.za/images/stories/documents/Projects/SAIP_Strategy_on_Improving_Physics_Education_doc.compressed.pdf)).

In terms of supporting our annual activities, I want to thank the SAIP office and the colleagues from the Physics department at Rhodes University for flying the physics flag high at SCIFEST 2019. A huge thank you to Ndanga Mahani, and Makaiko Chithambo and his team.

As the Voice of Physics in South Africa, the SAIP also continues to provide input to the newly established South African Basic Sciences Platform of the Department of Science and Technology (DST) to matters of relevance that affects our community as a whole. At the upcoming annual conference, the colleagues from the DST will present results from a scientometric analysis of Physics in South Africa. We encourage you to participate in the discussions with the colleagues from DST at the upcoming conference in Polokwane.

Looking across the continent, the African Physical Society (AfPS) and the African Astronomical Society (AfAS) are engaging in cross-continental activities in physics and astronomy with renewed energy and vigour. A new African Physics Newsletter was launched (<https://www.sif.it/news/645>) in January this year. If you have any activities you would like to report in this newsletter, please contact Igle Gledhill who is on its editorial board. In March of this year, 80 astronomers from 20 countries met in Cape Town to elect a new executive of AfAS. This community - through AfAS - is very much looking ahead at activities to support

the sustainable development of the community of astronomers ahead of the 2024 General Assembly of the International Astronomical Union, which will be hosted in Africa for the first time.

This issue of Physics Comment features a tribute to Prof Michael Feast. It is with great sadness that the SAIP community heard of the death of Prof Feast, who died peacefully on the morning of 1 April, aged 92. He served on the SAIP council from 1993-1999, he was awarded the de Beers Gold medal in 1992, and he was a fellow of the South African Institute of Physics. The South African physics and astronomy community says goodbye to one of its giants, with tremendous appreciation for his role in shaping the current astronomical landscape in South Africa.

I look forward to welcoming you all at the 64th annual conference of the South African Institute of Physics, hosted by the Department of Physics of the University of Venda from 8-12 July 2019.

I wish Eric Maluta and his team all the best with the final preparations for the conference and hope to see you all in Polokwane.

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## *Tribute to Professor Michael William Feast*

*By Professor Patricia Whitelock*



Michael William Feast died peacefully early this morning, 1 April 2019, aged 92. He is survived by his wife Connie, three children and eight grandchildren. Michael was an Honorary Professor in the Astronomy Department at the University of Cape Town, a former Director of the South African Astronomical Observatory (SAAO), a Founding Member of the Academy of Science of South Africa, a member of the International Astronomical Union, an Honorary Fellow of the Royal Astronomical Society, a Fellow of the Royal Society of South Africa and the South African Institute of Physics (SAIP). Born and raised in England, as a young boy he was removed from his family in the south of England, and with the other village children, was sent to live with host families in Wales for the duration of the war for security reasons.

He came to South Africa in 1952, after a postdoc position in Canada, to work at the Radcliffe Observatory in Pretoria. In 1974 he moved the SAAO in Cape Town, where he served as Director from 1976 to 1992. In 1992 he took South African Nationality so as to participate fully in the transformation of South Africa. He was passionate about astronomy and continued to do research up to a few months before his death. He read widely, enjoyed talking to students and was an Editor of the leading UK astronomy journal, *Monthly Notices of the Royal Astronomical Society*, from 1993 until 2018.

Using the 1.9m telescope, first in Pretoria and later at Sutherland, Michael did pioneering work on the Magellanic Clouds, our nearest extragalactic neighbours. His measurements enabled the first estimate of the mass of the Large Magellanic Cloud, which allowed us to understand how it was formed. He also established that the history of the Small Cloud must have been quite different. Many of his papers from the 1950s and 60s continue to be quoted. He established that luminous stars were losing mass and that this set a limit to stellar masses, which is crucial to many things from stellar evolution to the formation of planets.

Michael has also made major contributions to the understanding of our own Milky Way Galaxy. A pioneer of multi-wavelength techniques, between 1958 and 1965 he made the first comparison of optical data on young stars with radio measurements of the hydrogen gas. These led him to a new determination of the distance to the Galactic centre and an improved understanding of Galactic rotation. Much more recently, from 1997 to 2015, he combined data from the Hipparcos Satellite with observations from the Hubble Space Telescope and from various SAAO telescopes at Sutherland to investigate the structure of our own Galaxy and to derive a new calibration of the extragalactic distance scale. He has also used the Southern African Large Telescope (SALT) to good effect, discovering Cepheid variables at large distance behind the Galactic Centre. He published over 300 refereed papers, the first in 1948 and the latest in 2019.

At the time of his death, Michael was a National Research Foundation (NRF) A1 rated researcher. He had won the Gill Medal of the Astronomical Society of South Africa, the de Beers Gold Medal of the SAIP and in 2014 was presented with the NRF Lifetime Achievement award.

He was responsible for the development of SAAO as a major national and international facility. Initially a joint enterprise with the British Science Research Council, this developed into an entirely South African operation under his leadership. The telescope time was available to anyone who had a good enough project and this attracted international visitors. This also led to fruitful exchanges of scientific and technical knowledge and was highly stimulating to the SAAO staff, both scientific and technical. He took a strong personal interest in all research done at the SAAO and critically read every paper written by a staff member before it was submitted for publication. He encouraged international collaborations and insisted that publication was in first rank international journals.

The work carried out at SAAO by staff and by astronomers from South African and international universities and institutions during the time of Michael's directorship of SAAO has not only led to the recognition of South Africa as a major component in world astronomy, it has shown that South Africa's geography, climate and its technical development makes it an excellent place to establish astronomical facilities. It is clear that these factors were significant in convincing international partners to join with South Africa in SALT at SAAO, Sutherland. That in turn positioned South Africa to bid to host the Square Kilometre Array.

When SAAO and UCT held a conference to celebrate Michael's 90th birthday he insisted that it must not look back, but focus on the future and the wonderful opportunities that astronomy and South Africa offered each other. He lived a life of integrity and dedication to work, whilst still enjoying the simple pleasures of family dinners, listening to music, reading poetry, and walking deep in conversation with friends. He read widely on a broad range of subjects, especially history, art, music, philosophy and religion. He was an Anglican and was especially interested in what lay beyond and outside of the concepts of space and time as we know them. He was a source of wisdom and good counsel to many who loved him, and an inspiration and help to many who worked with him. His is a life worth celebrating in so many ways.

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### ***Tribute to Dr Sidney Brenner***

*Sourced from Wits News*

Wits University has learnt with great sadness of the passing of Dr Sydney Brenner, a Nobel Laureate and Wits alumnus who was a pioneer in the field of molecular biology. A remarkable human being, he made an immense contribution to science and humanity, and leaves behind an honourable legacy.

Dr Brenner obtained several qualifications from the University – a Bachelor of Science in 1945, a Bachelor of Science: Honours in 1946 and a Bachelor of Science in Laboratory Medicine in 1951. He was awarded an honorary doctorate by his alma mater in 1972 in recognition of his contribution to science and medicine. Read more about the tremendous achievements of Dr Sydney Brenner here: [https://issuu.com/witsalumnirelations/docs/wits\\_review\\_\\_april\\_2019\\_issuu\\_revis/s/82775](https://issuu.com/witsalumnirelations/docs/wits_review__april_2019_issuu_revis/s/82775)

Our deepest condolences are extended to the friends and family of Dr Brenner and those who knew him well. May he rest in peace.

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### ***SAIP Offices Relocation & Communications Interruptions***

This message serves to inform you that the SAIP Secretariat has moved offices from Building 42 to Building 33 - Offices N23 to N29 within CSIR Campus Pretoria. Our general contact number remains 012 841 2655.

Please note that there have been interruptions to our telephones and emails in the first weeks of January 2019. We are fully back online now. We apologise for any inconvenience caused.

Thank you, Brian Masara.



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## ***Call for Nominations to SAIP Council 2019***

You are invited to nominate representatives to serve on the SAIP council for the Period 2019 - 2021.

For more information click here for the full announcement:

[http://saip.org.za/.../Call\\_for\\_SAIP\\_Council\\_Nominations\\_2019...](http://saip.org.za/.../Call_for_SAIP_Council_Nominations_2019...)

Download the nomination form here: [http://saip.org.za/.../Nomination\\_Form\\_-\\_SAIP\\_Council\\_2019.doc](http://saip.org.za/.../Nomination_Form_-_SAIP_Council_2019.doc)

Nominations to close on 03 May 2019.

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## ***Call for 2019 Silver Jubilee Medal Nominations***

You are invited to submit nominations for the Silver Jubilee Medal for 2019.

Nominations must reach the SAIP secretary at [secretary@saip.org.za](mailto:secretary@saip.org.za) before the closing date on 03 May 2019 at 23h59.

Additional info: [http://saip.org.za/.../Call\\_for\\_2019\\_Silver\\_Medal\\_Nominations...](http://saip.org.za/.../Call_for_2019_Silver_Medal_Nominations...)

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## ***Proceedings of the 62nd Annual Conference of the South African Institute of Physics (SAIP2017)***

The Proceedings of SAIP2017, the 62nd Annual Conference of the South African Institute of Physics, with ISBN 978-0-620-82077-6, has been published on 31 December 2018. The Proceedings of SAIP2017 is available electronically. To access the SAIP2017 Proceedings page, please browse to: <http://events.saip.org.za/internalPage.py...>

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## ***The ASTEMI Olympiads and Competitions Community of Practice Conference (STEMI COP)***

SAIP participated in the 2019 STEMI COP, which is an annual conference organised by the South African Agency for Science and Technology Advancement (SAASTA) on behalf of Department of Science and Technology. It was held during the period, 19 – 22 February 2019 at the CSIR International Convention Centre, Pretoria. SAIP is a member of ASTEMI as we have been running the Physics Olympiad for the past four years, funded by SAASTA from 2016 to date. This year we plan to move to an online version of the Olympiad with back up traditional paper exam for previously disadvantaged schools.



## Background

The STEMI Olympiads and Competitions Community of Practice Conference is an annual conference which is dedicated to the advancement of the Science, Technology, Engineering, Mathematics, and Innovation (STEMI) Olympiads and Competitions in South Africa by creating a community of practice where best practices are identified and benchmarked. This is achieved by bringing Olympiad and Competition organisers and other industry stakeholders together to present academic and non-academic research and talks to facilitate a platform for engagement between parties.

## Objectives of the conference

- To positively contribute towards a STEMI-driven culture.
- To create a platform for collaborative problem solving.
- To act as a catalyst between people and organisations.
- To facilitate the development of tools to improve the connection between science and society.
- To assist in transforming innovative ideas and actions into benchmarked practices.

The focused audience for the conference is STEMI Olympiads and Competitions organisers and stakeholders that have either direct or indirect impact on this niche, such as educators, academics, science centres, government departments, science agencies, and professional bodies. However, anyone involved or interested in science engagement is welcome to attend.

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## ***15th International Conference on Luminescence and Electron Spin Resonance Dating, 11-15 July, 2017, Cape Town, Republic of South Africa***

*By Makaiko Chithambo (Chair, Rhodes University)*

Makaiko Chithambo and his team from Rhodes University, organized the 15th Luminescence and Electron Spin Resonance Dating conference (LED2017), which was held between 11-15 July 2017, at the Southern Sun Cape Sun Hotel in Cape Town. The conference was officially opened by Prof Patrick Woudt, the President of the South African Institute of Physics. The meeting was attended by some 150 delegates from 31 countries. There was a mid-conference excursion led by Dr John Crompton providing an introduction to the geology of the Cape Town region. The end of the conference was followed by a fieldtrip to the internationally renowned Pinnacle Point Cave in Mossel Bay, overseen by Dr. Peter Nilssen.

There were invited lectures given by Georgina King on luminescence thermochronometry, André Sawakuchi on luminescence of sedimentary quartz, Li Sheng-Hua on luminescence age limits, Makaiko Chithambo on time-resolved luminescence, Sumiko Tsukamoto on ESR of quartz applied to dating and thermochronology and Reza Sohbati on luminescence dating of rock surfaces. The conference was preceded by a day workshop with two parallel sessions one on a wide range of analytical software tools including BayLum, DRAC and Analyst, and the other on analysis using R. About 200 papers were presented at the conference with nearly 40% as oral presentations. Some of the manuscripts were reviewed and have been published as special issues of Radiation Measurements (Volume 120) and in Quaternary Geochronology (volume 49).



*LED2017 Conference Group Photograph.*



*LED2017 Conference Gala Dinner.*



*Excursion of the Cape Town region.*

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## ***WiPiSA (Women in Physics in South Africa) Departmental Lunches***

Two of the main objectives of WiPiSA are to

- 1) Encourage and stimulate an interest in girls and women to study physics.
- 2) Support girls and women to work in physics-related careers and assist in removing/overcoming obstacles and barriers for girls and women in their studies and at workplace.

To meet these objectives, we initiated an idea to have departmental lunches across Universities within South Africa. The lunch activity is expected to bring women in physics together; academics, those in leadership roles and students (both undergraduates and postgraduates) to enjoy a meal together while encouraging and stimulating interests in others to study physics, networking and talking about some challenges they are facing as women in physics. For more information please visit: <http://wipisa.saip.org.za/>

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## ***Stellenbosch University WiPiSA meeting***

*By Anneke Erasmus on behalf of the Stellenbosch University Physics Postgrad Student's Committee*

The Women in Physics meetings at Stellenbosch University aim to build and nurture a sense of community and support for female students within the Physics department. These meetings provide an opportunity for women to come together in a friendly and welcoming environment to share their personal experiences, provide possible role models for both undergraduate and postgraduate students, and to encourage and inspire women to pursue further work in physics.

The meeting took place on 20 September 2018 and received overwhelmingly positive feedback. A key aim of the event was to identify issues that students may face and how the department can improve the climate for female physics students. This was addressed through an activity where students anonymously wrote down their “dreams” and “challenges” they have encountered, which were then collected and formed the basis of a group discussion. Common “challenges” included confidence and self-doubt, time management, emotional and mental health, family expectations and pressure, and lack of funding.

Under “dreams” were written, for example, fulfilment regarding their research and career, making a modern contribution in society, impacting women in science, inspiring others, collaborating internationally, having a challenging and stimulating career, and living a healthy balanced life. The many repeating themes did an excellent job of helping build the community feel and stimulated discussions that took many themes much further, with nearly all students contributing with their own experiences. Several sections of the evening were designated for one-on-one informal chatting and discussions were received very well.

Additionally, the event featured an engaging motivational talk from Dr Gillian Arendse, (the Deputy Director at the Division for Student Access at Stellenbosch University and physicist by training), followed by several female staff members and postgraduate students sharing their personal journeys in physics. These talks aimed to provide motivation and to make the world of physics feel more accessible to students who are struggling with issues such as lack of confidence and societal pressure, as well as offer a chance for students to ask questions about specific pathways in academia and research.

We are grateful to WiPiSA and the Physics department of Stellenbosch University for their support in organizing the Women in Physics meeting. Overall the response to the event was overwhelmingly positive and we look forward to planning other similar events in the future.



*The participants in the Stellenbosch University Physics Department's 2018 Women in Physics meeting.*



*Students wrote down their “dreams” and “challenges” they have faced as women in physics while engaging in one-on-one discussions.*

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## Report on UCT WiPiSA Lunch 2018

By Dr Dale Taylor

The University of Cape Town Physics department held a WiPiSA Lunch on Thursday 4 October 2018, in the seminar room of the Physics Building. A delicious finger lunch was provided, utilising a grant from the Women in Physics in South Africa. The lunch was attended by all 3 female academics from the Physics department, the female laboratory coordinator, some of the female support staff, and approximately 25 students, including students from every level of study from first year to post-doc. The student turnout was fewer than hoped for, despite repeated invitations.

At the lunch, two female graduates of the UCT physics department spoke about their experiences: Dr Nasheeta Hanief, who was recently appointed as the Chief Scientific Officer at the Electron Microscope Unit, and Ms Isobel Kolbe, who is in the final stages of her theoretical physics PhD in High Energy Physics. The lunch was organised by Dr Katie Cole, Dr Trisha Salagaram and Ms Jill Patel. As an ice-breaker, participants completed the lucky draw form below, which got them talking about their interests to women from other years of study. Prizes were bath products.

The lunch is reported on in more detail in an article on the UCT Faculty of Science news site - see <http://www.science.uct.ac.za/news/womxn-physics-making-their-mark> (attached below).

		
<b>Womxn in Physics Lunch: Lucky Draw</b>		
To enter the lucky draw, find people in the following categories and complete this table:		
First name	What's your favourite section of physics?	What do you want to do when you've finished studying?
1 <sup>st</sup> /2 <sup>nd</sup> year		
3 <sup>rd</sup> year		
Post-grad		
Your name: _____		

**Women in Physics making their mark (article on Faculty of Science news site - 10 Oct 2018 - 10:45.)**



The Department of Physics recently hosted a Women in Physics lunch to highlight the issue of under representation of women in Physics and to encourage current students to consider further studies in the field. At the event, two postgraduate students spoke about their journey in Physics and the lessons they have learned along the way.



Nasheeta Hanief, (pictured above) a solid-state physics doctoral candidate in the Nano-electronics research division encouraged and inspired with her story of choices and success in her field. Nasheeta started off with a BSc in Molecular & Cell Biology and then did an honours and master's degree in Material Science and engineering. She described how her career path was not straight and upwards. In her talk she explained how she fell in love with research and loved doing experiments and reporting about them. Initially she was determined to pursue a career path in the medicinal biochemistry field, however when that didn't materialise she pursued Material Science Engineering and was afforded many interesting opportunities of which included travel overseas for research purposes to The Brookhaven National Laboratory in Long Island, New York.

She found conducting research overseas in different labs really interesting and found that the experience of presenting at conferences widened her network and built up contacts highly influential on her career path. Upon completion of her MSc she was highly intrigued by the projects offered within the Physics department which greatly influenced her decision to change fields to a solid-state Physics discipline. As there was not a great deal of equipment and resources to continue with this work, she spent a fair amount of time building up the laboratory for sample processing and went to Oxford University to expand on her research ideas and with that has developed the electron beam lithography and made a makeshift glove-box clean room here at UCT.

In terms of giving tips and advice to the women at the event, about her lessons learned, Nasheeta stressed that a career path doesn't have to be straight forward but can be directed by your passion and drive – emphasising that you should enjoy the research that you are doing. She highlighted the need to find a mentor who can advise you and give you input and said it is imperative to find a good supervisor in addition to this. She emphasised the importance of engaging with your peers in order to avoid the loneliness of research which takes over and becomes a huge part of your life, as well networking constantly, seeking out opportunities and international collaborators.

Lastly Nasheeta commented that women face challenges, however they should not be barriers – she herself got married while working on her Master's and had a child during her PhD – so it clearly is possible to juggle these different aspects of life and succeed. Nasheeta currently holds the position of Chief Scientific Officer in the Aaron Klug Centre for Imaging and Analysis in the Electron Microscope Unit and is working on completing her PhD.



Isobel Kolbe, (pictured above) who is in the final stages of writing up her PhD in Physics, entitled her talk “In all things academic, never accept ‘No’, with a by-line ‘How to get a PhD and see the world, even if you’ve never been the best at anything physicsy’”!! She encouraged the audience to push the boundaries and not be inhibited and fearful, and if someone says ‘no’ to keep asking until you get a positive response! She mentioned that you will always be surrounded by people who know more than you do and therefore it is important to swallow your pride and ask them about it. For Isobel, her studies have been the passport to extensive travel to many different countries across the globe.

Isobel works in theoretical high-energy particle physics, essentially trying to understand the results that come from the Large Hadron Collider (LHC) at CERN in Geneva, Switzerland, which is the largest particle collider in the world. She is particularly interested in the physics of heavy ion collisions, in which large droplets of matter are heated to 100 000 times the temperature of the center of the sun, recreating some of the conditions that were present in the universe about a millionth of a second after the big bang. A good understanding of matter at that time in the universe's evolution could answer some of the major open questions about the universe.

Isobel gave tips on completing a Master's and revealed how she completed hers in 7 months and didn't waste time in writing it up. With regard to her PhD, Isobel said that the first year was really tough and she joked that she started therapy way too late! The lessons that Isobel learned through her academic journey, are that the audience should take every opportunity, even if they don't feel like it today; in physics there is no such thing as a hard pre- requisite; ask questions of those around you constantly; the trick to doing anything well is using the best parts from all the different pieces; in visa-applications there is no such thing as a minimum processing time and apply now, find the money later for opportunities..





Another lesson that Isobel learned along the way was that it is important to do as much physics and maths for as long as possible before specialising.

What does the future hold for Isobel? She is trying to organise a small project at CERN next year to fill the gap between our academic year and the northern academic year, but is really hoping to do a postdoc in the USA starting in September 2019. Postdocs are usually 2-3 years long, and after doing this, she would really like to come back to South Africa and take up a position as a researcher at a South African university, maybe even starting her own research group at a university that doesn't currently have a theoretical particle physics research division! Exciting challenges for someone who likes pushing the boundaries!

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### ***Rhodes University WiPiSA Lunch Report***

*By Miss Damilola Folley, PhD student, Rhodes University*

The Department of Physics and Electronics at Rhodes University held a lunch for women in Physics on Friday 12 October 2018 in the Departmental tea room. The function was possible due to generous funding from the WIPISA committee of the South African Institute of Physics.

The lunch was attended by 17 ladies consisting of one Lecturer, nine Postgraduate- and seven Undergraduate Physics students. In opening the function, the Head of Department Prof Makaiko Chithambo quipped that the most important delegates were the first-year students and hoped that the undergraduates would stay and carry on further with physics to postgraduate level. The attendants enjoyed lunch and exchanged their experiences of being a woman in physics.

Dr Williams, a lecturer, spoke about what it is like to be a woman in Physics touching on her experiences being the only female lecturer in the Department. Miss Kate Bryan and Miss Damilola Folley, both of whom are PhD students gave brief talks on their experience in being research students in Physics. Miss Bryan began by explaining that Physics was not the subject she came to study at Rhodes University but was only chosen as an extra credit. However, it soon stood out, not only because it satisfies a curiosity about the world but also because of the challenge involved in understanding that knowledge. Physics always has something interesting around the next corner even if it is hard work getting there and it was this that led Miss Bryan to continue in the subject until she could pursue a PhD.



*Rhodes WiPiSA Lunch Group Photograph.*

Miss Bryan concluded that, while the current stereotype of women in Physics may be that they need to be a 90 or 100% scorer to succeed, this is not the case to study Physics and encouraged the undergraduates at the lunch to not see grades as a barrier since perseverance will often see them through.

Miss Folley on her part, expressed that female Physicists are seen to be very smart by their non-physicist friends which sometimes make them isolated. However, the good part is that they get to be attracted to smart friends as well. In addition, she said the notion that physicists are boring people who have no life outside research is wrong. She shared that four postgraduate women visited three countries for research and conferences this year with full sponsorship from the University. The undergraduate students were quite shocked by the amount of travelling that happens within the field. Miss Matiwane, an MSc student added that conference attendance is not limited to postgraduates only. There are other conferences and internships open to undergraduate. She mentioned a few she has attended and gave links on where to apply for them, e.g. Chris Engelbrecht Conference and Students Internship with iThemba labs.

Overall, it was a lovely lunch with much stimulating discussions and served the purpose as intended by WIPISA.

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## ***Outreach and Public understanding of Physics***

*By Dr Hellen Chuma (Research scientist at Johnson Matthey Technology Centre and Chairperson of SAIP Outreach Committee.*

Sekgosesa Community Radio station also known as Seco FM hosts several interviews in collaboration with REDFEST SA and CORNET M FOUNDATION, through the “Griezel Raphahlelo’s Science and Technology show on A re bale”, with the aim to inform the community members of the Limpopo province about Science and Technology. Seco FM creates a platform for mass communication and interaction amongst the historically disadvantaged rural communities. It enjoys greater support and participation from the communities in various districts such as Mopani, Vhembe and Capricorn.

Dr Moyahabo Hellen Chuma, Research scientist at Johnson Matthey Technology Centre and the chairperson of the South African Institute of Physics (SAIP) - Outreach and Public Understanding of Physics Portfolio, was invited as a special guest for a radio interview on the 06th February 2019. The topic of the day was “why do we need women in physics?”. Challenges that hinder women from participating in physics related careers and suggestion on how to overcome some of these barriers were discussed during the interview. This was an opportunity to reach out to those communities and encourage young people, especially women and girls to study physics or work in physics related fields.

Message from Dr Chuma:

The Outreach and Public Understanding of Physics Portfolio team is working tirelessly to have SAIP participating in various events and make use of various social media platforms, such as Facebook and LinkedIn, to reach out to the public of South Africa. On behalf of the team, I will like to take this opportunity to acknowledge our various sponsors as well as the Hub and Spoke representatives, with sincere gratitude for the support and the great work done across Mzansi to encourage those aspiring physicists. To my fellow South Africans, the sky is not the limit. You can go beyond the sky if you believe.



*The poster that was circulated on social media for advertising the radio interview.*

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## **SAIP at Scifest Africa 2019**

*By Ndanga Mahani – SAIP Projects Officer*

SAIP took part in Scifest Africa, South Africa's National Science Festival, from the 6th of March 2019 at Settlers Monument in Grahamstown. Scifest Africa is an annual project of the Grahamstown Foundation supported by the Department of Science and Technology (DST). It was established in 1996 to promote the public awareness, understanding and appreciation of science, technology, engineering, mathematics and innovation.

The 2019 theme "Discover your element" celebrates the International Year of the Periodic Table of Chemical Elements as proclaimed by the United Nations. The theme also celebrates several anniversaries in the history of chemistry including the 150th anniversary of the periodic table's creation by Dmitry Mendeleev in 1869, 350 years since the discovery of phosphorus, the categorisation of 33 elements in 1789 by Lavoisier's, and Döbereiner's law of the triads in 1829.

This year the SAIP exhibition stand was bigger and better with more interactive exhibitions as Rhodes Physics Department has brought also the Maths and Statistics Departments, under the supervision of Prof Makaiko Chithambo.

## Role at Event

The role of SAIP was to address the learners, teachers, undergraduates and the general public about SAIP membership and its activities. Also, marketing and improving public understanding of physics thus increasing the impact, visibility, awareness and footprint of SAIP in different regions of South African so that joys of studying physics and derived economic benefits of physics are accessible to all hence promote physics-derived socioeconomic impact resulting in capacity building to human science technology.

It is recognized worldwide that physics is a basic science, vitally important to the development of mankind through broadening our understanding of the world we live in and indeed the universe. In particular, physics often acts as a lead science.

SAIP had demos on Angular Momentum, Plasma Globe and Light (reflection, refraction and dispersion). In addition, the Maths and Stats departments brought Probability quiz, Maths puzzles and patterns. Careers in physics booklets, Physics Pedagogy booklet for educators, SAIP pamphlets, science cartoon pamphlets and SAIP branded materials were handed out.

This year Biophysics fell out of Scifest dates, to celebrate the week in advance, SAIP did a Biophysics awareness through the Biophysics Initiative. Biophysics week 2019 is took place on 25 – 29 March 2019.

We included WiPiSA initiative as girl learners were also encouraged to take physics science and maths so that they can follow a career in the different fields of physics.

## Comments and Feedback

The learners ranged from primary level to grade 12, they were mostly excited and eager to play with the Maths and Statistics puzzles and patterns and as usual to learn about the plasma globe. The undergraduates were eager to know about the existence of SAIP and our projects and conferences. The educators were excited to receive the Physics Pedagogy booklet and that their learners engaged with demonstrations relating to their maths and physical science syllabus. The learners also took the opportunity to ask physics questions relating to challenges they face in understanding some aspects of physics. Educators were also intrigued by hearing that Teacher Development Programme model will soon be at their proximity, as SAIP in collaboration with Eastern Cape Education Department has been running teacher training workshops in the province. Most of foundation and intermediate phase learners showed interest in taking Physical Science and pure Maths as subjects. The general public also engaged in our fun interactive exhibition.

## Statistics

Every year Scifest attracts over 60 000 visitors and the programme consists of over 50 exhibitions and 700 events including 20 lectures, 500 workshops, and 198 other events. SAIP managed to come back with over 200 *e-members*.



*The team with the girl learners after encouraging them to follow careers in STEMI.*



*The Maths, Physics and Statistics team photograph.*



*Learners solving Maths puzzles.*

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## ***L'Oréal-UNESCO For Women in Science Africa Regional programme***

*Sourced from L'Oreal resources*

The L'Oréal Foundation awarded fellowships to 14 exceptional young women scientists (12 doctoral and 2 post-doctoral) from five countries in sub-Saharan Africa (Ghana, Mauritius, Kenya, South Africa and Nigeria). Based on their scientific excellence of their work, they were selected from more than 480 applicants, by independent experts conducting research in sub-Saharan Africa. The 9th award ceremony took place in Nairobi, Kenya, December 6th, 2018. A list of awardees is given below:

Olanike Akinduyite – Federal University of Technology, Nigeria - Specialty: Computer science

Rima Beesoo – University of Mauritius, Mauritius - Specialty: Biology - Biochemistry

Takalani Cele – UNISA, South Africa - Specialty: Environmental science - Condensed matter physics

Dr. Marilize Everts – University of Pretoria, South Africa - Specialty: Mechanical engineering - Fluid mechanics

Charlene Goosen – Stellenbosch University, South Africa - Specialty: Health sciences - Epidemiology

Lerato Hlaka – University of Cape Town, South Africa - Specialty: Health sciences - Infectious diseases

**Harshna Jivan – University of Witwatersrand, South Africa - Specialty: Physics - Nuclear**

Dr. Priscilla Kolibea Mante – Kwame Nkrumah University of Science and Technology, Ghana - Specialty: Environmental science - Neuroscience

Gladys Mosomtai – International Centre of Insect Physiology and Ecology (ICIPE), Kenya - Specialty: Environmental science - Geoscience

Kenya Fiona Mumoki – University of Pretoria, Kenya - Specialty: Biology - Entomology

Shalena Naidoo – Stellenbosch University, South Africa - Specialty: Health sciences – Immunology

Olaperi Okuboyejo – University of Witwatersrand, Nigeria - Specialty: Computer science

Andrea Wilson – University of Pretoria, South Africa - Specialty: Biology - Genomics

Madeliën Wooding – University of Pretoria, South Africa - Specialty: Chemistry - Health sciences



*South African Fellows with Professor Rose Leke (Far Left) and Nelson Torto (Far Right).*



*Professor Rose Leke with Physics PhD student, Harshna Jivan (University of the Witwatersrand).*

**For more information on the For Women in Science programme or to apply visit:**

[www.forwomeninscience.com](http://www.forwomeninscience.com).

## South African Students to meet Nobel laureates in Germany

Sourced from [www.assaf.org.za](http://www.assaf.org.za)

Twenty young scientists, 10 males and 10 females (aged 35 and below) from South Africa were selected to attend a meeting of Nobel laureates and young scientists in Lindau, Germany later this year, this after being nominated by the Academy of Science of South Africa (ASSAf).

These students will join 580 young scientists from 88 countries and 42 Nobel laureates for the 69th Lindau Nobel laureate Meeting, June 30 to July 5 to participate in lectures and panel discussions in key areas that will include including cosmology, laser physics and gravitational waves. These meetings have been held annually in Lindau since 1951.



*Tanita Ramburuth-Hurt, Michael Sarkis and Francis Otieno from Wits University shown in the insert above.*

The South African young scientists are: Tariq Blecher, Rhodes University/Square Kilometre Array (SKA); Stive Djiokop, Nelson Mandela University (NMU); Jake Gordin, University of Cape Town (UCT); Thandi Gumede, University of the Free State (UFS); Arthur Harrisson, University of Pretoria (UP); Julia Healy, UCT/ South African Radio Astronomy Observatory (SARAO); Jan Louw, Stellenbosch University; Genevève Marx, NMU; Itumeleng Monageng, UCT/ South African Astronomical Observatory (SAAO); Francis Otieno, University of the Witwatersrand (Wits); Valentine Saasa, UP/Council for Scientific and Industrial Research (CSIR); Michael Sarkis, Wits; Hester Schutte, North-West University (NWU); Katekani Shingange, UFS; Sinenhlanhla Sikhosana, University of KwaZulu-Natal (UKZN); Kimeel Sooknunan, UCT; Tanita Ramburuth-Hurt, Wits; Johannes Thiersen, NWU; Nicole Thomas, University of the Western Cape (UWC)/ SARAO; Danielle Venter, NMU.



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## *New book*

**Title:** An Introduction to Time-Resolved Optically Stimulated Luminescence

**Author:** Makaiko L Chithambo

**Publisher:** Morgan & Claypool Publishers

ISBN: ISBN 978-1-64327-198-9 (ebook)

ISBN 978-1-64327-195-8 (print)

ISBN 978-1-64327-196-5 (mobi)

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IOP Publishing, Temple Circus, Temple Way, Bristol BS1 6HG, UK

### **About the author**

Makaiko L. Chithambo is a Professor of Physics and Head of the Physics and Electronics Department at Rhodes University in South Africa.

### **About the book**

Time-resolved optical stimulation of luminescence has become established as an important method for the measurement of optically stimulated luminescence. The luminescence is stimulated from a sample using a brief light pulse. The time-resolved spectrum measured in this way can be resolved into components each with a distinct lifetime. The lifetimes are linked to physical processes of luminescence and thus provide a means to study dynamics involving charge transfer between point defects in materials. Its enduring appeal is easy to see with the number of materials studied growing from the initial focus on natural minerals quartz and feldspar to synthetic dosimeters, such as  $\alpha$ -Al<sub>2</sub>O<sub>3</sub>:C or BeO. This book is devoted to time-resolved optically stimulated luminescence and is suitable for researchers with an interest in the study of point-defects using luminescence methods.

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## *IUPAP Newsletter*

We would like to inform you that the March 2019 issue of the IUPAP newsletter is now online for your browsing. You can view it via the link ([http://iupap.org/wp-content/uploads/2019/03/IUPAP\\_march2019\\_E-compressed.pdf](http://iupap.org/wp-content/uploads/2019/03/IUPAP_march2019_E-compressed.pdf)) or directly from the website (<http://iupap.org/newsletter/>).

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## *Like the SAIP Facebook Page*

Like the SAIP Facebook page to stay in touch with the latest news, events and job opportunities within the South African & International Physics Communities.

If you have interesting physics related activities, events and opportunities you want to be posted please let us know and share those great moments with the community.

<https://www.facebook.com/South-African-Institute-of-Physics-1660099704207118/>

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## *Connect with SAIP on LinkedIn*

The physics community can now connect with SAIP on LinkedIn click on the link below to connect with friends in physics community in South Africa: <https://www.linkedin.com/company/18078401/>

Happy networking!!

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## **CRITICAL SKILLS VISA LETTER**

The South African Institute of Physics is now a SAQA registered professional body hence it can provide critical skills letters required for the application of a Critical Skills VISA and Permanent Residence Permits to Registered Professional Physicist.

An application for a Critical Skills Work Visa has to be accompanied by proof that the applicant falls within the critical skills category and the following;

1. A confirmation, in writing, from the professional body, council or board recognised by the South African Qualifications Association (SAQA), in terms of Section 13(1)(i) of the National Qualifications Framework Act, or any relevant government department confirming the skills or qualifications of the applicant and appropriate post qualification experience.
2. If required by law, proof of application for a certificate of registration with the professional body, Council or board recognised by SAQA in terms of Section 13(1)(i) of the National Qualifications Framework Act.
3. Proof of evaluation of the foreign qualification by SAQA and translated by a sworn translator into one of the official languages of the Republic.

SAIP is recognised by SAQA and can provide you with the confirmations you require to comply with requirements 1 and 2 above.

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## Register as a Professional Physicist with SAIP

The SAIP is inviting its members to register as Professional Physicists (Pr.Phys) with SAIP.

- The short abbreviation for the designation will be Pr. Phys.
- A member registered with SAIP as a Professional Physicist can use the letters Pr.Phys after their name e.g. George Brown Pr.Phys.

### Who can apply?

Physics is a basic science that is a basis for all science and technology disciplines. This results in its graduates working in every sector imaginable. Therefore, we must cater for a wide range of industries and economic sectors. Hence any physicists who graduated with at least Physics Honours Degree working in either; industry, commerce, government, academia, research, theoretical physics, experimental physics, and uses physics skills and thought processes in their job/career.

**A person first has to qualify to be an SAIP Ordinary member before they can be registered as a professional physicist.**

This designation will represent the highest standard of professionalism, competence and commitment to keep pace with advancing knowledge in the field of physics. It is hoped this designation will give a professional standing and recognition of physics by the South African society.

### Justification

Academic qualifications are only the beginning of a career in physics and its applications. The need for continuing professional development is widely recognised to be the mechanism by which professionals maintain their knowledge after the formal education process has been completed. Pr.Phys demonstrates a commitment to maintaining competence, continuing your professional development and abiding by an acceptable code of conduct.

### Benefits to physicist

- The certification as a Professional Physicists will be an important addition to a physicist's personal credentials.
- When competing for a job the designation will distinguish one from other applicants with similar qualifications but no professional designation

### Benefits for employers

- Supports the recruitment process many recruiters these days want to know if one has a professional designation
- Can be used as criteria for promotion, skills and salary benchmarking
- Demonstrates to someone who possesses this designation believes in professionalism, continuous skills development, belonging to a professional body and acceptable ethical standards

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## Register as Professional Industrial and Physical Science Technologists (Pr.PhysTECH)

Pr.PhysTECH Designation: The SAIP would like to inform the physics community that a second professional designation, the Professional Industrial and Physical Science Technologists (Pr.PhysTECH) has now been registered with SAQA under professional designation ID: 899.

Pr.PhysTECH registered members also qualify to request a critical skills VISA support letter from SAIP. Pr.PhysTECH will cater for applied physicists, industrial physicists, technicians and technologists and graduates with physics-based qualifications working in academia, research and industry; who apply physics-based scientific-methods, techniques, concepts and principles in research, testing, measurement, monitoring, design, and installation of equipment, products, and processes.

For more info visit: <http://saip.org.za/.../442-professional-industry-and-physical...>

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## JOIN SAIP MEMBERSHIP

Physics is a basic science that is a basis for all science and technology disciplines. This results in physics graduates working in every sector imaginable. Therefore, SAIP caters for a wide range of industries and economic sectors.

SAIP membership includes any physicists who graduated with at least physics related degree working in either; industry, commerce, government, academia, research, theoretical physics, experimental physics, and uses physics skills and thought processes in their job/career.

### Why Professional Membership is Important

Academic qualifications are only the beginning of a career in physics and its applications. The need for continuing professional development is widely recognised to be the mechanism by which professionals maintain their knowledge after the formal education process has been completed. By becoming a member of a professional society, one demonstrates their commitment to maintaining competence in their field through continuing your professional development from activities such as conferences, schools and workshops and abiding by an acceptable code of conduct. Membership of a professional society is an important addition to a physicist's personal credentials for example when competing for a job membership of professional society will distinguish one from other applicants with similar qualifications but no professional affiliation.

1. **Stay informed** - News flashes and alerts to are sent directly to your email. A quarterly magazine, Physics Comment, will keep you briefed on physics news, government policy and jobs in industry and academia.
2. **Specialist Groups and Networking** - Through the various activities of SAIP, networks have been established with the African and International Physics communities, to benefit all our members. You'll make important new contacts and forge lifelong professional relationships by getting involved in a specialist group.
3. **Save Money** - You'll receive discounted rates for SIAP conferences, and have the benefit of paying affiliate membership fees for IOP membership.
4. **Employment opportunity information** -Job advertisements will be displayed on our new website and mailed to members from time to time.
5. **Access to current information on sources of funding grants and scholarships** - Exclusive service provided to our members via a direct email system.
6. **Scientific meetings** - The annual conferences and workshops provide learning opportunities for different specialisation areas and varying degrees of experience.
7. **Especially for the global physics community** - You'll have the opportunity to partake in events organised by the SAIP for the Physics community in South Africa as well as Africa: developmental workshops, schools, and conferences.
8. **Additional resources** - Your membership privileges also include information and guidance when applying for and acquiring visas to study, participate in the scientific meeting and research opportunities in South Africa and abroad. There is also an exclusive member-only area on our website.
9. **Career guidance and resources**- Career assistance is provided to all members to find their career path in industry or academia.
10. **Opportunities to win awards for excellence** - SAIP recognises contributions to physics in SA by awarding two different medals and various student prizes at the annual conference.
11. **Teaching and Learning Resources for schools** - As part of our growing outreach programme we provide teachers and learners with the tools and opportunities to allow and motivate more learners to follow careers with physics as a background

JOIN SAIP TODAY CLICK THE LINK BELOW FOR MORE INFORMATION ON HOW TO APPLY:

<http://www.saip.org.za/index.php/members/membership-info>

### *The American Physical Society (APS) launches the inaugural African Physics Newsletter*

The APS has published the inaugural issue of the African Physics Newsletter in February 2019. Subscriptions to the newsletter are free and open to both Africans and non-Africans. To subscribe go to <https://go.aps.org/africanphysics>.

In her opening address, the CEO of the APS, Kate Kirby, stated that “While this newsletter is an undertaking by physicists in Africa, APS is happy to serve as the initial publisher. This electronically distributed, quarterly publication is free and open to anyone in and outside of Africa.

I invite the international physics community to sign-up to receive this newsletter and learn more about the exciting physics research, physics meetings, and other physics related news from across Africa.”

The newsletter is a means for African physicists to communicate with physicists outside of Africa, for African physicists to communicate among themselves, and for physicists and organizations outside of Africa to communicate with those in Africa.

No such means has existed for each of these three needs. The need for better means of communication with and among African physicists is one the areas of need identified by the survey of African physics conducted by the Physics in Africa Project sponsored by the American Physical Society, the European Physical Society, South African Institute of Physics, and the International Center for Theoretical Physics.

Relying on African volunteers, the newsletter is a low cost, historic step forward to addressing the communication void. The newsletter will publish quarterly.

The oversight board comprises: • Prof. N. Chetty (University of Pretoria, Pretoria, South Africa) Vice President, IUPAP • Dr. J. E. Gubernatis (Los Alamos National Laboratory, Los Alamos, New Mexico) Chair of the Physics in Africa Project; Member, Committee on International Scientific Affairs, American Physical Society • Prof. A. Wagué (Dakar Cheikh Anta Diop University, Dakar, Sénégal) President African Physical Society, International Councilor, American Physical Society.

The editorial board comprises: • North: Prof. M. Zghal (University of Carthage, Tunis, Tunisia) • South: Prof. I. Gledhill (University of Witwatersrand, Johannesburg, South Africa) • East: Prof. G. Amolo (Technical University of Kenya, Nairobi, Kenya) • West: Prof. S. K. Danuor (Kwame Nkrumah University of Science and Technology, Kumasi, Ghana).

Besides representing North, South, East, and West Africa, these editors represent both the Francophone and Anglophone communities distinctive of different African nations.

We encourage you to forward the newsletter to colleagues you think may be interested in hearing about the latest developments in physics in Africa, and to encourage them to subscribe.

Do you have a meeting or conference you'd like posted? Do you have news or articles you'd like to share with your colleagues? This is the initial launch of a newsletter by and for the African physics community. Look for more information in the next African Physics Newsletter on how to submit information to the newsletter and share your news with colleagues across the African continent.

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# ***Report on the African School on Electronic Structure Methods and Applications (ASESMA) - The Fifth school in the biennial series 2010-2018***

*By Prepared by Richard Martin, Nicola Seriani, Getachew Adam, Garu Gebreyesus Hagoss, and Yohannes Teketel*

ASESMA was held in Addis Ababa Science and Technology University, Addis Ababa, Ethiopia October 22 – November 2, 2018

## **Summary**

- It was the largest school in the ASESMA series up to this point, with 49 participants from 13 countries in Africa. There was very positive feedback from the participants who want to continue the projects started at the school and increase their interactions within Africa and beyond.
- The school followed the general plan of lectures, tutorials and projects that has proved successful in previous years. This year there was a concerted effort to make lectures more interactive with more time for discussions, which worked very well.
- The most important change was the start of a new direction with lectures and a tutorial for all students on molecular dynamics and soft matter, and an introductory lecture on biological applications. This is an expansion of the scope of ASESMA into other areas of computational materials and biological sciences that will important in the future.
- Compared to previous schools, there were a larger number of participants with some experience but very little knowledge of the theory or understanding of the calculations. This is a group that can benefit from the ASESMA approach that emphasizes how to choose good problems, set up calculations, and interpret the results properly.
- There were also participants with a lot of experience, most having been at previous ASESMA, who learn about new topics and work together to build up collaborations and self-sustaining infrastructure for research. These more advanced participants were tutors for the less experienced ones the first week and in the second week they did more advanced projects.
- The mentor program this year was greatly enhanced by support from the United States NSF for 4 mentors (graduate students), increased support from Switzerland and the UK, and also the increasing numbers of advanced African participants.
- The spirit at ASESMA schools and the social interactions far exceed any schools I know of in the US or Europe, and it is manifested at each school in different ways. This year there was spontaneous songs by participants and a mentor, especially on the last evening when there no technical talks. (Videos can be found at the web site.)



*ASESMA Group Photograph.*

The content of the 2018 School was a combination of theoretical lectures and hands-on calculations using workstations together with evening programs with activities, discussions and presentations on topical issues relevant to the School. The detailed program for each day is available at the web site, which includes slides for lectures, project descriptions, and other information: <https://asesma-org.github.io/ethiopia2018/>.

The ASESMA Schools Series is based on theory and computational methods for predicting and understanding properties of materials through calculations at the fundamental level of electronic structure. There is an important focus on real applications. This is a growing field in which scientists with limited resources can have a large impact. A personal workstation is sufficient for many problems and the internet is making possible productive use of large computational facilities. It is within reach to create a vibrant electronic structure community in Africa working on forefront international research. Previous schools have been in South Africa in 2010, Kenya in 2012, and South Africa in 2015 (Ghana in 2016).

#### **Future of ASESMA:**

This is a critical time for ASESMA, when it is time to make a proposal to IUPAP for a new series starting in 2020. It is time to have a new broader vision, and it can build upon the recognized success of ASESMA to up to now. The scope of ASESMA and the number of active, experienced research groups has grown to the point that there can be new opportunities. The emphasis this year on molecular dynamics and biological applications was a step toward the larger role of ASESMA. One direction can be workshops that are more focused and/or regional schools that can help develop stronger interactions and networks that are active in the years between ASESMA schools. Recently there are funds at ICTP that can be used for travel to workshops in Europe, smaller meetings, and other activities. It will be very important to build up support in the time between schools.

There is already planning for a school in 2020 at a location not yet decided, but with a strong candidate, the new East African Institute for Fundamental Physics in Rwanda which is supported by the ICTP.

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## *Opportunities*

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### *Computer Scientist Job Opportunity at SANSA!*

The South African National Space Agency (SANSA) is a public entity under the National Department of Science and Technology (DST). SANSA has a mandate to drive the promotion and use of space and cooperation in space-related activities.

The position exists within the Space Science Programme based in Hermanus, Western Cape to be filled by a dynamic solution driven individual with the relevant competencies to join the Space Weather Team.

Closing date: 31 March 2019 and for more info: [http://saip.org.za/.../FINAL\\_Computer\\_Scientist\\_-\\_Advert\\_-\\_Fe...](http://saip.org.za/.../FINAL_Computer_Scientist_-_Advert_-_Fe...)

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### *Post-Doc at NMU!!!*

Nelson Mandela University Faculty of Science invites applications for two postdoctoral positions in Theoretical High Energy Nuclear-Particle Physics and Theoretical Astrophysics-Cosmology in Port Elizabeth.

The positions include participation to the SA CERN/Theory, SA-JINR/Theory, and the National Institute of Theoretical Physics (NITheP) as well as participation to the theoretical SKA science projects. The research will be performed in collaboration with Prof Azwinndini Muronga in a dynamic, team-oriented and collaborative environment.

Closing date is 31 March 2019 for full consideration, but the search will remain open till the optimal candidates are found.

For more information and how to apply: [http://saip.org.za/.../Faculty\\_of\\_Science\\_-\\_postdoctoral\\_pos...](http://saip.org.za/.../Faculty_of_Science_-_postdoctoral_pos...)

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## ***Radio Astronomy – Two Senior Positions at the University of the Witwatersrand***

The School of Physics in the Faculty of Science, University of the Witwatersrand invites applications for two senior positions in Astronomy /Astrophysics, in a joint initiative with the South African Radio Astronomy Observatory and the National Research Foundation:

- Professor in Radio Astronomy;
- DST-NRF Chair in Radio Astronomy

The full advertisement can be found at:

[https://irec.wits.ac.za/OA\\_HTML/OA.jsp?page=/oracle/apps/irc/candidateSelfService/webui/VisVacDispPG&OAHP=IRC\\_EXT\\_SITE\\_VISITOR\\_APPL&OASF=IRC\\_VIS\\_VAC\\_DISPLAY&p\\_svid=79392&p\\_spid=3989495](https://irec.wits.ac.za/OA_HTML/OA.jsp?page=/oracle/apps/irc/candidateSelfService/webui/VisVacDispPG&OAHP=IRC_EXT_SITE_VISITOR_APPL&OASF=IRC_VIS_VAC_DISPLAY&p_svid=79392&p_spid=3989495)

Closing date: 20 May 2019

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## ***Upcoming Conferences & Workshops***

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### ***8th South African Conference on Photonic Materials (SACPM2019) Announcement and Call for Abstracts***

The purpose of the conference is to bring together local and international scientists who are working on various issues related to photonic materials. The Conference will be held 6-10 May 2019 at Kariega Game Reserve, Eastern Cape, South Africa.

Registration is open.

Abstract Deadline is 25 January.

For more information please visit

[http://saip.org.za/.../8th\\_South\\_African\\_Conference\\_on\\_Photon...](http://saip.org.za/.../8th_South_African_Conference_on_Photon...)

Conference Website: <http://events.saip.org.za/event/SACPM2190>

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### ***SAIP2019 Call for Abstracts***

The 64th Annual Conference of the South African Institute of Physics will be hosted by The Department of Physics of the University of Venda at the Protea Ranch Resort Hotel in Polokwane (Limpopo).

The conference will run from 9 – 12 July 2019 and will be preceded on 8 July by Winter Schools on “Renewable Energy and Energy Materials” and “Condensed Matter.”

Registration and abstract submission open 11 January 2019. For more info and other important deadlines please visit the conference website: <http://www.events.saip.org.za/event/saip2019>.





## 1<sup>st</sup> Call for Abstracts

The Department of Physics of the University of Venda will host the SAIP2019 conference at the Protea Ranch Resort Hotel in Polokwane.

The conference will run from 9 – 12 July 2019 and will be preceded on 8 July by Winter Schools on "Renewable Energy and Energy Materials" and "Condensed Matter."

Please note the following schedule:

Registration opens:	11 Jan 2019
Abstract submission opens:	11 Jan 2019
Abstract submission deadline:	11 April 2019
Notification of acceptance of abstracts:	8 May 2019
Early Bird Registration closes:	8 May 2019
Payment Deadline:	8 June 2019
Registration closes:	8 June 2019

All participants are kindly requested to keep to the schedule as indicated.

For all details, please visit the conference website at [www.events.saip.org.za/event/saip2019](http://www.events.saip.org.za/event/saip2019)

### CONFERENCE PROCEEDINGS

The proceedings of the SAIP 2019 conference will be peer reviewed and produced in accordance with the DHET guidelines for recognition at the level of 0.5 units per article. Only papers that are submitted strictly on or before 23:59 SAST on 31 July 2019 will be considered for publication. The guidelines for authors, the application procedure for recognition of your article and other details relating to the proceedings will be available on the conference website.

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## *International Conference on "High level Physics and Solutions to Real Life Problems in Developing Countries (25 to 30 November 2019)*

The sixth edition of the International Conference on "High level Physics and Solutions to Real Life Problems in Developing Countries" will take place from 25 to 30 November 2019 in Dschang, Cameroon.

The goal of this conference is to:

- Present the state of the art of the development of fundamental and applied research in the following domain: nonlinear phenomena in electrical and mechanical engineering, bio-inspired systems, optoelectronics and photonics, materials sciences and condensed matter physics, atomic and molecular physics.
- Shows the special emphasis on applications bringing solutions to real-life problems encountered in developing countries.
- Present the technological innovation for the development coming from research activity in Physics.

For more information regarding the history of the conference, APSA competition on Experimental Physics, funding, committees, abstract submission and registration details, please visit the conference website: [www.scp-web.org](http://www.scp-web.org).

In addition, further details can be obtained from: [info@scp-web.org](mailto:info@scp-web.org) or [brnana2@gmail.com](mailto:brnana2@gmail.com) and [tchitnga@yahoo.fr](mailto:tchitnga@yahoo.fr).

# Deadline for submissions for the June 2019 issue of Physics Comment is 31 May 2019

## Physics Comment Editorial Policy

Physics Comment is an electronic magazine for the Physics community of South Africa, providing objective coverage of the activities of people and associations active in the physics arena. It also covers physics-related ideas, issues, developments and controversies, serving as a forum for discussion. It is not a peer review journal.

Physics Comment publishes innovative reports, features, news, reviews, and other material, which explore and promote the many facets of physics. Physics Comment endeavours to:

- support and inform the physics community
- promote membership of the South African Institute of Physics
- promote the understanding of physics to interested parties and the general public represent the readers' point of view
- focus on issues and topics of importance and of interest to the physics community

We accept submissions on any physics-related subject, which endeavours to inform readers and to encourage writers in their own researches. We aim to be politically, socially and geographically inclusive in the articles, which we commission and receive. Therefore, we shall not discriminate according to political or religious views. Physics Comment does not support or endorse any individual politician or political party. However, contributions, which are being published, may contain personal opinions of the authors.

It is our desire to present unfettered the opinions and research of our readers and contributors. All articles submitted for publication are subject to editorial revision. Such revisions, if necessary, will be made in cooperation with the author.

The views expressed in published articles are those of the authors and are not attributed to the Editorial

The Editor will make the final determination of the suitability of the articles for publication.

### Declaration by Author

When an author submits material for publication, this means:

1. The author(s) assures the material is original, his/her own work and is not under any legal restriction for publication online (e.g., previous copyright ownership).
2. The author allows PC to edit the work for clarity, presentation, including making appropriate hypermedia links within the work.
3. The author gives PC permission to publish the work and make it accessible in the Magazine's archives indefinitely after publication.

The author may retain all other rights by requesting a copyright statement be placed on the work.

Authors should respect intellectual integrity by accrediting the author of any published work, which is being quoted.

### Publication Deadlines

Physics Comment is published four times a year.

Issue	Closing Date	Publication Date
Issue 1	28 February	15 March
Issue 2	31 May	15 June
Issue 3	31 August	15 September
Issue 4	30 November	15 December

### Specification and Submission of Content

**Editorial Tone.** As the voice of the physics community, the magazine will create a provocative, stimulating, and thoughtful dialogue with the readers; and provide a variety of perspectives that reflects the dynamism of the physics community.

**Article types.** The magazine is devoted to articles, reports, interesting facts, announcements and recent developments in several areas related to physics:

**Manuscripts.** Solicited manuscripts will be judged first for reader interest, accuracy and writing quality. The editor reserves the right to request a rewrite, reject, and/or edit for length, organization, sense, grammar, and punctuation.

**Re-use.** The publisher reserves the right to reuse the printed piece in full or in part in other publications.

**Submission and Format.** Manuscripts must be submitted to the editor on or before the designated due date. Manuscripts must be submitted electronically, on the prescribed Microsoft Word template available for download from <http://www.saip.org.za/PhysicsComment/>. Manuscripts are to be submitted directly to the editor: [PhysicsComment@saip.org.za](mailto:PhysicsComment@saip.org.za).

**Style.** AP style is followed for punctuation, capitalization, italics and quotations.

**Photography and Illustration.** All solicited photography and illustration should be part of an article and will be judged first for technical quality and editorial appropriateness. The editor and art director reserve the right to request revision or reject any material that does not meet their criteria. The publisher reserves full rights to all solicited photography and illustration, including the right to reprint or reuse graphic material in other publications.

### Categories of Content Contributions

**Technical articles and reports:** These are generic articles of about 1 500 words plus diagrams and pictures. A technical article covers a relevant feature topic. Articles are authored by the writer and publishing a 40-word resume of the author could enhance its credibility. By submitting an article that has been previously published the author confirms that he/she has the right to do so and that all the necessary permissions have been received. The acknowledgement must be made within the article.

**News:** These are short editorial items usually not more than 250 words. Full-colour pictures must be clearly referenced on the editorial submission and on the picture or picture file.

**Advertorials:** Advertorials could be published when supplied by the client. We recommend a maximum of 500 words plus one or two pictures for maximum impact. A PDF file of the laid-out advertorial should be emailed to the client along with an MS Word file of the text and separate image files of the pictures. It is the client's responsibility to ensure that the advertorial is correct as it is, in fact, a paid for advert page.

**Letters to the Editor:** Letters to the Editor are encouraged. The Editor reserves the right to edit for length and format. The Editor will not change the political position of the initial letter. Physics Comment does not publish anonymous letters.

**Advertising Policy:** The Editorial Board will determine advertising prices for Physics Comment, subject to approval by SAIP Council. The objective will be to obtain revenue to maintain and develop the magazine. Physics Comment offers classified advertising to subscribers of the magazine for free. The advertisements must be a maximum of 60 words including the telephone number, and there is a limit of three free classifieds per subscriber, per issue. Advertisements may include a photo, which may be reduced in size or resolution by the editor to optimize loading time. All items or opportunities, which are being advertised for free, should be physics-related. The Editor reserves the right to refuse any advertising, which does not conform to the objectives of the magazine.

### Submission of Articles

All articles must be submitted on the prescribed template available for download from <http://www.saip.org.za/PhysicsComment/>

