THE AFRICAN PHYSICS NEWSLETTER

What's New in This Issue of the Newsletter?

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Dear Readers,

Welcome to the second issue of the African Physics Newsletter for 2026. As a junior editor for North Africa, I am pleased to share with you a collection of contributions that reflect the energy, diversity, and growing connections within Africa's physics community.

We start from Egypt, where the month of April was marked by several initiatives dedicated to strengthening scientific engagement. From discussions about physics careers and international perspectives to tackling pseudoscience problems through scientific journalism and communication to increase public trust in science. April was also marked by the launch of the first edition of the International Conference on Physics and its Applications in Sustainable Development. It brought together scientists to explore how they can contribute to sustainable development solutions. Remaining in North Africa, in Tunisia, the continued efforts to promote quantum technologies in the country and connect the worldwide quantum ecosystem resulted in a remarkable networking event hosted by UnitaryHACK26.

We will then take you to the western part of the continent, where scientific leadership and personal journeys take center stage — the career of medical physicist Stephen Inkoom, from Ghana, is celebrated with a spotlight on his achievements in advancing research, education, and professional development. In Nigeria, our contributors Mary Opeyemi Olusesi and Omamuyovwi Rita Jolayemi bring Jonah Nagura's work into focus, illustrating the role of African researchers in shaping the global landscape of quantum physics and open research.

Moving to Central Africa, Cameroon has one of the most humanistic topics of this edition. Beyond science, a report from Institute of Physics engagement editor Victoria Merriman about the 2026 American Physical Society Global Physics Summit satellite event in Dschang brings us back to the roots of science and its progress — resilience, intercultural collaboration, and communication are the core of scientific development.

Looking toward Southern Africa, the newsletter highlights the growing involvement and leadership of African countries in astronomy. The sixth annual conference of the African Astronomical Society, held in Botswana, a well-attended event, is an illustration of a growing continental community, and South Africa distinguishes itself with world-class infrastructure through the activities of the MeerKAT telescope and MeerKAT Galaxy Clusters Legacy Survey II survey projects.

The issue ends with a celebration of inclusion through the African Network of Women in Astronomy, which continues to empower women across the continent through mentorship, recognition, and outreach. For illustration, Zara Randriamanakoto's amazing journey shows how excellence in science, leadership, and engagement with the community can inspire generations of African scientists.

"As you read the articles, I hope they remind you that African physics is strong not only because of its discoveries, but also because of the people, partnerships, and shared vision that make those discoveries happen."

I also encourage you to share your own work and stories by submitting your article to your regional editor!

Sarra Ben Brik
Junior Editor, North Africa

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Do you have a meeting, conference, school, award, etc. you would like posted? Do you have any other news or articles you would like to share with your colleagues?
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Opportunity!
Now Open: Africa Quantum Access & Governance Survey
The Africa Quantum Consortium, in collaboration with researchers at Dalhousie University, has launched the Africa Quantum Access & Governance Survey, an Africa-wide initiative to gather insights into researchers' experiences with quantum computing access, collaboration, infrastructure, and governance.

Researchers across the continent are encouraged to participate, with the findings informing policy recommendations and future initiatives to strengthen Africa's growing quantum ecosystem.

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APS also encourages colleagues to join their local and/or regional physics societies to strengthen connections between APS and other societies worldwide.

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Confronting Pseudoscience in Egypt

Figure 1: Attendees at the National Committee of Physics organized a forum on "Confronting Pseudoscience in Egypt." (Photo Credit: Author)

On April 8, 2026, the National Committee of Physics (NCP) of the Egyptian Academy of Scientific Research and Technology (ASRT) convened a landmark, one-day forum to confront the rising tide of pseudoscience. Bringing together scientists, intellectuals, and media professionals, the forum aimed to move beyond academic debate toward concrete action. The day ended with a pivotal recommendation: build a structured partnership with the Egyptian Journalists Syndicate to help safeguard the public's understanding of science.

Why did the NCP choose to organize a scientific meeting on pseudoscience at all?

The reason is straightforward — the spread of pseudoscience in society not only harms scientists as individuals, their ambitions, careers, and future, but it also weakens real science itself. Few things damage science more than the deliberate spread of misinformation dressed in scientific language. Pseudoscience borrows the vocabulary and appearance of science while ignoring its methods, and, in this way, it can be more dangerous than ignorance alone.

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Unscientific practices are as varied as people themselves. Some are old and familiar: astrology, horoscopes, and various forms of fortune-telling — all deeply rooted in culture. Others look more modern. Certain kinds of so-called "alternative medicine," for example, claim to channel invisible energies or open mystical pathways in the human body. To these we can add witchcraft, fraudulent treatments, and other practices that exploit people's fears, illnesses, and hopes.

Crucially, these are no longer just private beliefs. They are promoted by active social and commercial movements that work hard to spread and normalize them. In a society such as Egypt's, anyone who sincerely wants to promote science must first promote a scientific culture, ways of thinking grounded in evidence, logic, and critical reasoning. That inevitably means confronting unscientific practices.

We do this not only because these practices mislead and sometimes harm people, but also because many of them now present themselves as direct rivals to science. They are no longer "innocent" personal convictions. Many promoters of alternative medicine, for instance, build their market share by attacking modern medicine, questioning the value of vaccines, and undermining established biological principles.

The forum emphasized that pseudoscience has shifted from a private belief toward an open challenge to scientific knowledge. In societies where educational gaps persist, this shift creates a vacuum that sensationalism eagerly fills. Individuals without recognized scientific training are often given major visibility in newspapers, on television, and across social media.

We regularly encounter headlines claiming that a student has discovered a "fatal error" in Einstein's relativity, or that a self-proclaimed researcher has invented a device that produces "free energy" from nothing. Others insist they have uncovered secrets supposedly hidden by international institutions to avoid a scientific "scandal."

These are not cautious questions raised within the framework of scientific debate. They are loud, confident claims broadcast to the public, where they can easily overshadow the slower, quieter work of real science.

This situation feeds into a complex, multilayered problem centered on the changing role of the media. Instead of acting as reliable gatekeepers of knowledge, many platforms have slipped into promoting unverified or plainly false ideas. By repeatedly highlighting the unqualified, they grant such figures an unearned sense of authority.

The result is a "manufactured crisis." Established sciences are not being challenged by rigorous, constructive critique, which would be welcome and healthy. Instead, they are surrounded by baseless claims that push researchers to waste time responding to nonsense. Meanwhile, the loudest and most sensational voices drown out the careful, evidence-based work of serious scientists, discouraging the scientific community and confusing the public.

To tackle this issue, the forum recommended a practical solution: specialized training for journalists, organized in collaboration with the Egyptian Journalists Syndicate. This initiative has two main objectives. The first is professional integrity, which helps media professionals maintain their independence and sound judgment when dealing with complex scientific issues and resist pressure to chase sensationalism at the expense of accuracy. The second, on the other hand, is a credible consultation, encouraging a standard practice in which journalists regularly consult recognized scientific bodies before broadcasting or publishing scientific content.

By intensifying the relations between the scientific community and the media, Egypt can restore the central role of trusted institutions and limit the influence of amateurs. Like any human endeavor, science requires a healthy environment to thrive, one that rewards evidence over speculation. By confronting pseudoscience today, we are taking a necessary step toward a future where genuine scientific development can flourish in Egyptian society.

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Careers of Physicists in Egypt and Africa

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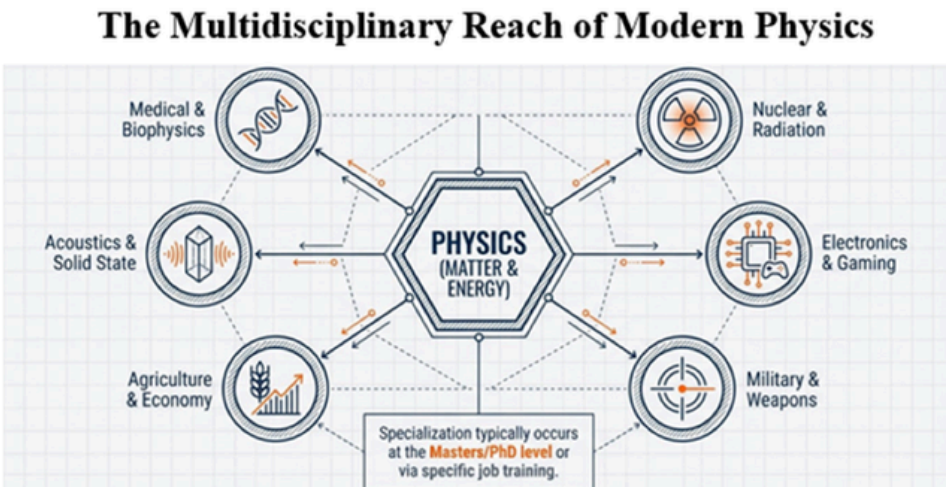

Figure 1: Physics, as an engine for modern industry, shows various specialized applications and outlining pathways for academic and professional advancement. (Photo Credits: National Committee for Physics)

In recent years, the role of physicists in Egypt and across Africa has grown significantly. This progress reflects stronger national and regional efforts to advance scientific research, improve the quality of education, and ensure that university training keeps pace with the demands of a rapidly changing job market. As part of this broader momentum, the National Committee for Physics (NCP) at the Egyptian Academy of Scientific Research and Technology (ASRT) organized an online workshop on April 4, 2026, titled "Careers of Physicists in Egypt and Africa."

The workshop provided a timely overview of the many career paths now available to physics graduates in Egypt and throughout Africa. It also highlighted the regulations, institutional frameworks, and international opportunities that shape how physicists build their careers.

One of the key topics discussed included the academic pathway offered by universities and research centers in Egypt and other African countries. These opportunities are available across public, private, and national universities.

"In Egypt, and across Africa more broadly, physics graduates play essential roles in sectors such as education, where they help prepare the next generation of scientists in schools and technical institutions, and industry, where they contribute to technological work involving electronics, instrumentation, data analysis, quality assurance, and production improvement and control."

In most cases, academic careers follow a clear path, beginning with teaching or research assistant positions and progressing gradually to professorship. Promotion is usually based on a combination of research output, teaching experience, and meaningful contributions to the scientific community at both the national and international levels.

Research institutions in Egypt, often in collaboration with African centers of excellence such as the African Laser Center (ALC), offer physicists opportunities to engage in both fundamental and applied research across several fields of growing importance, including laser physics, materials science, renewable energy, and medical physics. These areas support national development priorities and contribute to the technological progress needed to advance the African Union's Agenda 2063.

The workshop also highlighted the many ways physicists contribute beyond universities and laboratories. In Egypt, and across Africa more broadly, physics graduates play essential roles in sectors such as education, where they help prepare the next generation of scientists in schools and technical institutions, and industry, where they contribute to technological work involving electronics, instrumentation, data analysis, quality assurance, and production improvement and control.

The discussion emphasized that physicists are valued not only for their scientific and technical expertise, but also for their critical thinking, problem-solving, and adaptability across a wide range of professional environments.

In Egypt, the professional practice of physicists is shaped by several formal policies, including academic bylaws and public employment regulations. Professional recognition through bodies such as the Scientific Professions Syndicate also plays an important role in supporting career development and strengthening credibility.

At the continental level, the workshop stressed the importance of engaging with the African Physical Society (AfPS) to build professional connections, encourage collaboration, and promote shared standards across African countries.

Another major topic of the workshop included the importance of international experience in professional development. Participants were encouraged to explore postgraduate study and research opportunities abroad through a range of competitive scholarships and grants, including the Fulbright Programs, the German Academic Exchange Service (DAAD), Erasmus+ Programs, and the Japan International Cooperation Agency (JICA) scholarships. These programs give physicists access to advanced experimental facilities, wider research networks, and valuable opportunities for international exchange and collaboration. Such experiences can strengthen their expertise and ultimately benefit their home institutions when they return with updated knowledge and broader perspectives.

The workshop also highlighted the importance of making career guidance more accessible to students and early-career researchers. Many publications on careers in physics and professional development are now freely available online. These resources offer practical support to young African physicists as they explore their options and plan for the future.

Overall, the workshop presented an encouraging outlook for the future of physics in Egypt and Africa. As shown in Figure 1, whether in academia, industry, technology, or international research, physicists are finding more opportunities than ever to contribute to science, innovation, and sustainable development across the continent.

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MeerKAT Unveils Secret History of Galaxy Clusters in MGCLS II

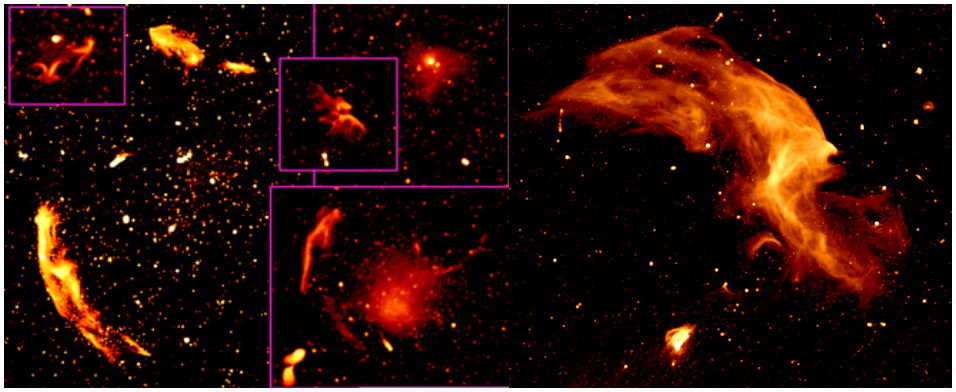

Figure 1: The scientific MGCLS diffuse radio emission mosaic (left), is shown in a zoomed-in image of the region in the middle small square (right). (Photo Credits: SARAO/Rhodes University)

For more than seven years, South Africa's MeerKAT telescope has observed the universe with unprecedented detail, detecting faint radio structures in galaxy clusters invisible to previous instruments. At the heart of this effort is the MeerKAT Galaxy Clusters Legacy Survey (MGCLS) [1], a program led by the South African Radio Astronomy Observatory (SARAO) that initially observed 115 clusters during commissioning.

The recent publication of the MGCLS II catalogue in the Monthly Notices of the Royal Astronomical Society marks a significant leap forward [2]. Following up on the MGCLS overview paper [3], we charted in detail the diffuse radio emission in the 115 MGCLS clusters, and we report a wealth of previously unseen radio structures. In those faint signals, the universe records the story of collisions, shocks, and magnetic fields on unimaginable scales. In total, the survey identified 103 diffuse radio structures; 60 of which had never been observed before. These diffuse structures span several megaparsecs and include distinct physical processes within galaxy clusters. Together with radio halos that reveal turbulence caused by major mergers, these included relics: elongated features created by shockwaves during cluster mergers; mini-halos: smaller, diffuse emissions near cool cores; and phoenix sources: patches of aged, fossil plasma re-energized by compression or shocks.

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Figure 2: Konstantinos Kolokythas, Ph.D. (Photo Credit: The author)

Diffuse radio emission is notoriously difficult to study. It is faint, spread out, and easily confused with unrelated signals from individual galaxies. MeerKAT's sensitivity and image quality allow these structures to be separated, measured, and understood with confidence, including also several candidate structures that ancillary multiwavelength data are necessary for a robust classification. MGCLS II provides detailed information on their sizes, shapes, brightness, and locations, backed by a comprehensive review of what is known about each cluster from decades of X-ray, radio and optical studies. Every source in the catalogue has measured properties and high-quality images. It is a foundation for future work, not just a list of detections.

The survey also emphasizes the importance of studying clusters across different wavelengths. X-ray images reveal where hot gas is located in the cluster's core, while optical data show the distribution of galaxies. When these are combined with MeerKAT's radio observations, a clearer picture emerges. Halos in the centre tend to coincide with the densest X-ray gas, whereas relics on the outskirts often align with sharp edges in X-ray brightness, providing evidence of shock waves sweeping through the cluster.

This kind of multi-wavelength research is vital for the future of global astronomy. As the Square Kilometre Array (SKA) era approaches, MeerKAT is already setting the standards that future surveys will follow. The MGCLS work provides a glimpse of the discoveries that will become routine with the SKA that will completely transform our understanding of how the largest structures in the universe form.

Moving from individual detections to a statistically robust catalogue enables more stringent tests of models of particle acceleration and magnetic-field evolution. The MGCLS catalogue also revealed fine substructures within relics — filaments and tubes of electrons aligned with magnetic fields — providing new constraints for simulations of particle acceleration and cosmic magnetism.

More than just a dataset, MGCLS II's work value goes well beyond astrophysics. It highlights a research environment in South Africa that contributes directly to global knowledge, strengthens the country's scientific standing, and trains researchers who will lead future projects with the SKA.

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African Network of Women in Astronomy: A Legacy Taking Shape

Figure 1: Select board members of AfNWA at the 2026 AfAS Conference: From left: Mirjana Povic (founding chair and current co-chair), Priscilla Muheki (from Ghana; current chair), Naome Frimpong (from Ghana; deputy director of Office of Astronomy Outreach), and Meryem Geunnom (from Morocco; current executive officer of AfAS). (Photo credit: Priscilla Mukeki)

Astronomy has often been seen as a "man's field," especially in many parts of Africa where the discipline is still developing. There's a common belief that the universe (or "space" as it is often referred to) is too complex and better suited for men, and that idea has shaped how people view who belongs in astronomy. So, when a woman introduces herself as an astronomer, it often shocks or surprises people, often dubbing her an unusual breed.

Growing up in most African cultures, we were told stories about the moon. The dark patches on its surface were said to form the image of a woman carrying a child, a garden hoe on her shoulder, with a dog beside her on her way to cultivate the land. Not only was it a familiar and comforting image, but also a powerful one. It quietly reflected what was expected of women: to nurture, to labor, and to remain grounded in domestic responsibilities.

These stories and beliefs don't just exist in isolation — they shape mindsets. Many girls and young women are curious about space and dream of pursuing careers in astronomy and science, technology, engineering and mathematics (STEM) as a whole, but those dreams can fade if the people around them don't believe in their potential or support their ambitions. Biases in hiring and professional spaces further reinforce these barriers, often favoring the male counterparts.

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"At its heart, the African Network of Women in Astronomy strives to ensure that girls and women don't just enter astronomy, but stay, thrive, and lead within it."

Beyond the workplace, cultural expectations continue to place a heavier burden on women to prioritize family responsibilities or risk being labelled a social rebel. Many are expected to take on caregiving roles, sometimes at the expense of their careers, and some are forced to put their aspirations on hold or give them up entirely. This is in no way meant to downgrade the importance of having family. Rather, it highlights that those who take on these responsibilities are often not given enough support to help them balance their roles and remain afloat in their careers.

And so, looking back at that image on the moon, one might wonder: Was it ever a prediction of women's destiny, even in fields like astronomy? Perhaps not a prediction, but a reflection of deeply rooted beliefs. Today, however, more women are choosing to see the moon differently; not as a symbol of limitation, but as an invitation to explore, to question, and to redefine their place, not just on Earth, but among the stars.

With all these realities in mind, six women came together with a simple but powerful idea: to create a space where women in astronomy and their champions, both across the continent and beyond, could connect, support one another, and grow. In 2020, this idea became a reality with the birth of the African Network of Women in Astronomy (AfNWA), which in 2021, was launched as a subcommittee of the African Astronomical Society (AfAS).

At its heart, AfNWA strives to ensure that girls and women don't just enter astronomy, but stay, thrive, and lead within it. To achieve this, the network focuses on strengthening connections among female researchers through mentorship and supervision, exploring ways to retain more women in the field while recognizing the challenges that often push them out, and inspiring young girls to pursue astronomy and related sciences through outreach. Equally important is giving visibility to women's contributions in astronomy.

The past five years have been marked by tremendous milestones that we are deeply grateful for. For the first time, we received a mention by the former president of the International Astronomical Union (IAU) during the 2024 General Assembly hosted in South Africa. This moment affirmed that our efforts are being seen, valued, and are making an impact within the global astronomy community.

At that same historic gathering, we had the honor of launching the first edition of the AfNWA storybook. This inspiring collection brings together the experiences of African women astronomers, highlighting their resilience, passion, and scientific excellence throughout their career journeys. Through this book, we hope to encourage generations of girls and women to dare to dream and to pursue those dreams boldly.

We have also had the opportunity to reach out to girls in disadvantaged communities by offering seed grants to groups that directly interact with them as they were inspired to dream beyond their current circumstances and to see possibilities as vast as the universe.

Another deeply rewarding experience has been the opportunity to celebrate women who are not only doing outstanding work in science, but are also making a meaningful difference within their communities. With support from the International Science Program at Uppsala University and AfAS, seven women have been recognized through the annual AfNWA awards. These awards span varying categories, including senior astronomer, early career (later renamed the "Professor Carolina Ödman-Govender Early Career Award" in honor of one of AfNWA's founding board members), and the mid-career astronomer. We are privileged to have a distinguished review panel, which includes two former presidents of the IAU.

Most recently, during the 2026 AfAS Conference hosted in Kasane, Botswana, the awards were presented to Mona Molham from Egypt, based at the National Research Institute of Astronomy and Geophysics, and Zara Randriamanakoto, from Madagascar, based at the South African Astronomical Observatory. Through these awards, we hope not only to inspire more women to pursue their dreams in astronomy, but also to shine a spotlight on the remarkable work they are already doing.

The legacy of AfNWA lies not only in the awards, the stories, or the recognition received so far, but in the community it continues to nurture — one that opens doors, challenges long-standing barriers, and ensures that the future generations of girls can look up at the sky and know, without doubt, that they belong there too.

"The legacy of AfNWA lies not only in the awards, the stories, or the recognition received so far, but in the community it continues to nurture — one that opens doors, challenges long-standing barriers, and ensures that the future generations of girls can look up at the sky and know, without doubt, that they belong there too."

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Under Madagascar's Skies: Zara Randriamanakoto's journey in astronomy

Figure 1 : Chairing session during SAAO 200 Symposium (left). Research group meeting with students in Madagascar – January 2023 (right). (Photo Credit: Zara Randriamanakoto)

Across the African continent, a new generation of scientists is redefining what African science looks like — globally connected, locally grounded, and deeply committed to societal transformation. Among them is Zara Randriamanakoto, an astrophysicist whose work spans cutting-edge research in galaxy evolution, science communication, and the development of astronomy in Madagascar.

Currently a research astronomer at the South African Astronomical Observatory and a visiting lecturer at the University of Antananarivo, Randriamanakoto has become one of the leading voices advancing astronomy and STEM education in Madagascar and across Africa.

Born and raised in Antsirabe, Madagascar, Randriamanakoto's scientific journey did not begin with astronomy. She initially studied physics at the University of Antananarivo, motivated by an interest in renewable energy and the socio-economic challenges facing Madagascar. It was only later, through opportunities linked to the South African Square Kilometre Array (SKA) Human Capacity Development program, that she entered the field of astronomy — a decision that would shape her career and, ultimately, the scientific landscape of her home country [1].

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"Randriamanakoto remains deeply committed to empowering the next generation of scientists in her home country and South Africa. Her work reflects a broader vision for African science – one where research excellence and community development are not separate goals, but deeply interconnected."

"I studied astronomy because it was an opportunity and a challenge I wanted to take," she reflected in an interview with L'Astronomie Afrique.

Randriamanakoto moved to South Africa in 2008 to pursue postgraduate studies in astronomy and astrophysics at the University of Cape Town. She completed her Ph.D. in astronomy in 2015 before undertaking postdoctoral research linked to the SKA project. Her scientific work focuses on understanding star formation, young massive star clusters, interacting galaxies, and radio active galactic nuclei using multi-wavelength observations. Her research contributions have helped deepen understanding of how galaxies evolve and how stars form in extreme environments.

Yet, for Randriamanakoto, astronomy extends far beyond scientific discovery. "Astronomy promotes innovation," she noted in an interview discussing science and development in Africa. "It is an essential ingredient for the sustainable development of a country" [2].

That philosophy has guided much of her work in Madagascar. In 2016, she founded Malagasy Astronomical Society (MASS, previously known as Malagasy Astronomy and Space Science), a nonprofit organization dedicated to growing astronomy, research training, and science outreach in Madagascar. The organization celebrates its 10th anniversary this year. Through MASS, young Malagasy students and amateur astronomers have gained access to mentorship, workshops, coding initiatives, and opportunities to engage with the global astronomy community [3].

Her efforts have played a key role in Madagascar becoming an official member of the International Astronomical Union (IAU), strengthening the country's visibility within international astronomy networks. She currently serves as President of Madagascar's National Committee for Astronomy and has been actively involved in several IAU working groups [3].

Beyond astronomy research, Randriamanakoto is also widely recognized for championing women and girls in STEM. She co-founded Ikala STEM [4], an initiative that connects Malagasy women scientists worldwide and mentors young girls interested in science and technology careers. Through outreach programs, mentoring, and astronomy-based activities, the organization has inspired students across Madagascar and beyond.

Her impact has not gone unnoticed. In 2020, she received the prestigious L'Oreal-UNESCO For Women in Science Sub-Saharan Africa Young Talents Award. The following year, she was named among the Mail and Guardian's "200 Young South Africans," recognizing both her scientific excellence and her public engagement efforts. Earlier last year, she was recognized as one of the Forbes Africa Top 50 Women powerlist 2025. The most recent award she received is AfNWA Mid-Career Award.

Despite her growing international profile, Randriamanakoto remains deeply committed to empowering the next generation of scientists in her home country and South Africa. Her work reflects a broader vision for African science – one where research excellence and community development are not separate goals, but deeply interconnected.

For many young scientists in Madagascar, especially girls, seeing someone from their own communities succeed in astrophysics has transformed what feels possible.

As astronomy continues to grow across Africa, scientists like Zara Randriamanakoto remind us that scientific progress is not only measured through discoveries about the universe, but also through the opportunities created for future generations to explore it.

For Madagascar, and for Africa physics more broadly, her journey represents more than a personal achievement. It represents the emergence of a scientific ecosystem rooted in collaboration, representation, and ambition — proof that Africa's future in astronomy is not something waiting to happen but something already being built.

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AfAS 2026 in Botswana: A week of collaboration, capacity building, and continental growth

Figure 1: AfAS 2026 Hackathon participants (left). Participants of the BLUEshift Africa workshop (right). (Photo Credit: Meryem Guennoun)

The 6th annual conference of the African Astronomical Society (AfAS 2026) was held from March 22–27, 2026 in Kasane, Botswana, marking the first time the Society's flagship meeting took place in the country. Hosted in partnership with the Botswana International University of Science and Technology (BIUST), the conference brought together astronomers, educators, students, engineers, policymakers, and science communicators from across Africa and beyond.

AfAS 2026 reflected the continued growth of the African astronomy community, with more than 600 registered participants and strong in-person and virtual engagement throughout the week. The conference underscored AfAS's mission to encourage collaboration, strengthen human capacity, and advance astronomy as a driver of scientific and societal development across the continent.

Pre-conference activities: skills development and early engagement

The program was preceded by a series of workshops and training activities that set the tone for the week. These included an AfAS Student Hackathon, science communication training sessions, a workshop by BLUEshift Africa, an African Lunar Symposium, as well as additional capacity-building sessions in data science and astronomy education.

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"Hosting the [6th annual conference of the African Astronomical Society] in Botswana highlighted the country's growing engagement in astronomy and scientific development. Through the [Botswana International University of Science and Technology] and national partners, Botswana continues to contribute meaningfully to regional efforts in research, education, and capacity building."

Figure 2: Conference participants at the local schools in Kasane. (Photo Credit: Meryem Guennoun)

The Hackathon brought together students from across Africa to work on a machine learning challenge in astrophysics, offering hands-on experience in data analysis, model development, and collaborative problem-solving. In parallel, science communication and education-focused workshops strengthened teaching practices and public engagement skills within the community. Together, these activities provided an important space for early engagement, skills development, and cross-continental collaboration ahead of the main scientific program.

The main conference: science, collaboration, and community

The scientific program of AfAS 2026 featured a broad range of topics, including cosmology, galaxy evolution, radio astronomy, space science, and astronomy education. Researchers presented work linked to major international facilities and collaborations such as MeerKAT, HERA [1], HIRAX [2], and the future Square Kilometre Array (SKA), highlighting Africa's growing role in global astronomy.

Beyond scientific presentations, the conference served as a platform for discussions on capacity building, research infrastructure, and education. The diversity of contributions reflected the interdisciplinary nature of astronomy in Africa today, as well as the increasing participation of early-career researchers across all program areas.

Outreach and science engagement were also central to the conference. Activities in schools across the Chobe District involved volunteers from the community, reaching learners through astronomy demonstrations, robotics activities, mobile planetarium sessions, and career-focused discussions. Teacher training workshops further supported the long-term impact of these engagements.

Botswana's role and continental collaboration

Hosting AfAS 2026 in Botswana highlighted the country's growing engagement in astronomy and scientific development. Through BIUST and national partners, Botswana continues to contribute meaningfully to regional efforts in research, education, and capacity building.

The conference demonstrated the importance of rotating AfAS meetings across different African countries, strengthening regional inclusion and ensuring broader participation in the Society's activities. It also reinforced the value of partnerships among universities, research institutions, and government stakeholders in advancing astronomy across the continent.

Figure 3: AfAS 2026 conference participants. (Photo Credit: BIUST)

Looking ahead: AfAS 2027

The conference concluded with a forward-looking session, during which the AfAS flag was formally handed over to Rhodes University, which will host AfAS 2027 in Makhanda, South Africa. This transition reflects AfAS's continued commitment to building a strong, connected, and inclusive African astronomy community through regular continental engagement and collaboration. AfAS 2027 is expected to build on the momentum of Kasane, further strengthening scientific exchange, training opportunities, and outreach activities across the continent.

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THE AFRICAN PHYSICS NEWSLETTER

The APS Global Physics Summit in Dschang, Cameroon

Figure 1: The APS Global Physics Summit satellite event takes place in Dschang, Cameroon. The group photo and Purpose-LED publishing workshop is animated by Victoria Merriman. (Photo Credit: Victoria Merriman)

We've congregated outside the main physics lab at the University of Dschang in Cameroon when a shouting match erupts about the two red cards issued in last night's football match. It's as dark as night inside and the lecture on LAMMPS-GUI, a molecular dynamics modelling software, hasn't started yet because it's been raining. The power is out and the professor, who has access to the generator, has delayed his journey to work to avoid the downpour. These are typical scenes in central Africa, where learning often involves overcoming significant practical challenges. There is no WiFi in the university, so we've arrived armed with portable routers to get online. Students can't use the university toilets due to a lack of running water, and research professors must supply their own batteries to power the generators that keep projectors and lights running.

I'm here to attend the seventh Central African School on Electronic Structure Methods and Applications (CASESMA), which is being held alongside one of 23 satellite events to the APS Global Physics Summit in Denver, Colorado. Organized by the American Physical Society (APS), the Summit is the world's largest physics conference, attracting around 14,000 delegates. Yet not everyone has the time, funding, or visa access to attend in person. That's why APS, with support from AIP Publishing and IOP Publishing — partners with APS in the Purpose-Led Publishing (PLP) coalition — is hosting satellite events across Africa, Asia, the Middle East, and South America to broaden participation and ensure the global physics community is more inclusive.

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Figure 2: People mingle after the ceremony at the royal palace and during the funerals in the Fongo-Tongo village. (Photo Credit: Victoria Merriman)

I've travelled here on behalf of PLP to run an editorial school at the university, covering topics from artificial intelligence in publishing to how to peer review academic papers. During a session with senior-career researchers, I'm inundated with questions whenever I pause for breath. They range from complex discussions about funding access in the region to lighter moments of miscommunication, such as when my pronunciation of "ORCID" doesn't quite match theirs. The conference has drawn participants from across the region, including Stève-Jonathan Koyambo-Konzapa from the Central African Republic, Gervi Moussavou Mouketo from Gabon, and Cladi Rodnet Boulingui, who has traveled for three days by bus from Brazzaville in the Republic of Congo.

The University of Dschang is highly respected in central Africa, and for Boulingui, whose visit is sponsored by the Universität Duisburg-Essen in Germany, the journey has been worthwhile. "Dynamic simulations are highly relevant to my work," he tells me. "It's worth the journey to access the specialist lecturer." The organizing director, Stéphane Kenmoe, has joined from Germany, where he is an associate professor at the University of Duisburg-Essen. A former student of Dschang, he returns regularly, maintaining strong connections and opening doors for current students through his international network. His energy extends far beyond academia: Kenmoe actively promotes APS satellite events across Africa, has produced award-winning science films, and is deeply committed to community engagement.

What I hadn't expected were the moments in between the lectures and workshops. Thanks to the generosity, and, let's be honest, the tireless organizing, translating and shepherding, of my host, Kenmoe, I found myself immersed far beyond the university setting. I was welcomed into the homes of his friends and family, sharing hours of open conversation with heads of physics departments, often long into the evening. These informal discussions provided as much insight as the formal sessions, offering a deeper understanding of both the challenges and the resilience of the academic community here.

One of the most memorable experiences was attending a title-giving ceremony with a local king in the village of Fongo-Tongo. We visited the regional king's compound, where he invited us into his home to share a meal and meet his six wives and more than 60 children. The scale of hospitality was extraordinary.

After the meal, the ceremony began. Kenmoe was honored as a special advisor to the king in recognition of his work advancing education in the region. Eckhard Spohr and Claudia Schmidt, two lecturers visiting from Germany who run the CASESMA training course, were named goodwill ambassadors. To my astonishment, I was given the title of honorary princess of Fongo-Tongo.

"In many ways, science brought us together. But it was the people, their stories and their generosity that made the experience unforgettable."

The ceremony itself was rich in symbolism: six attempts were made to adorn us with ceremonial necklaces and hats, with the seventh attempt marking success and allowing the ritual to move forward. The final flourish came with a collective count to seven in the local language, before we were each sat on a chair as the crowd called out in unison. We also attended a funeral, which, contrary to what I might have expected, was a vibrant and joyful occasion. Dressed in traditional attire, the entire community gathered to celebrate a life. We were invited to sit just behind the king, giving us a front-row view of music, dancing, fire-breathing and stilt-walking performances. It was a powerful reminder that mourning here is also about celebrating connection, memory and community. I absolutely love learning about different cultures and traditions, but what made this experience truly special was the sense of inclusion. To feel so welcomed, trusted and part of these deeply meaningful moments was an honor I hadn't anticipated, and one I won't forget.

In many ways, science brought us together. But it was the people, their stories and their generosity that made the experience unforgettable.

A similar piece was first published by Physics World.

THE AFRICAN PHYSICS NEWSLETTER

Mansoura University Launches First International Physics Conference for Sustainable Development

Figure 1: Scenes from the auditorium across different sessions of the first International Conference on Physics and its Applications in Sustainable Development. (Photo Credit: Mohammed A. El-Bakary)

The Egyptian scientific community recently organized the first International Conference on Physics and its Applications in Sustainable Development (ICPASD-1) to bridge the gap between fundamental physics in all its branches and real sustainable applications. The physics department at Mansoura University proudly organized the landmark event on April 20-24, 2026. The conference was held in two cities: Mansoura, a principal city in Egypt's Nile Delta situated on the Damietta branch of the Nile River, and Sharm El-Sheikh, a resort city located at the southern tip of the Sinai Peninsula on the Red Sea coast.

A scientific beginning in Mansoura

The first day in Mansoura was scientifically high-toned with a deep dive into medical and nonlinear physics. Ehab M. Attalla, of the National Cancer Institute at Cairo University, delivered a critical presentation on incident prevention in radiation oncology. He detailed key strategies, such as strict quality checks and automation, to reduce severe radiotherapy errors and ensure patient safety.

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Mohsen A. Zahran presented a comprehensive introduction to nonlinear physics and demonstrated how concepts such as solitons, fractals, and chaos can be applied to complex physical and biological systems. The day ended with an interactive poster session that sparked lively discussions among researchers and students.

An international meeting in Sharm El-Sheikh

For the remainder of the week, the participants headed to Sharm El-Sheikh, widely known as the "city of peace." Against the breathtaking scenery of the Sinai Peninsula, the scientific program quickly evolved into a multi-disciplinary showcase.

The conference featured a series of international keynote lectures.

- Plasma physics and astrophysics: Naoki Sato, from the National Institute for Fusion Science, Japan, gave a presentation on a scattering theory for treating collision physics in reduced kinetic models. His work provides a key framework for understanding plasma turbulence and self-organization in noncanonical Hamiltonian phase spaces.
- Sustainable materials: Rafael Muñoz-Espí, from the University of Valencia, Spain, spoke on the encapsulation of active compounds in polymers by colloidal strategies. He pointed to the environmentally friendly applications of these highly scalable systems in biomedicine, agriculture, and energy storage.
- Optics and artificial intelligence: Mostafa Agour, from the University of Bremen, presented a new method to protect valuable documents. His research uses computer-generated holograms (CGHs) augmented by convolutional neural networks (CNNs) to reduce imaging distortions and greatly enhance decryption reliability.
- Medical biophysics: Alemeh Zamani, from Masaryk University, Czech Republic and Tohoku University, Japan, presented on spectral properties of chimeric channelrhodopsins. Her team's research illuminates the molecular identities and structural transitions underlying the desensitization of light-gated cation channels.

A wealth of research highlights

Theoretical and nonlinear dynamics:

A highlight in the theoretical tracks was a rigorous geometric departure from traditional epidemiology. Researchers showed that the Susceptible-Cleric-Zombie-Recovered (SCZR) model has a rare noncanonical bi-Hamiltonian structure, which proves that it is exactly Liouville-Arnold integrable. They provided a deterministic, analytical baseline for epidemic containment that goes beyond mere numerical approximations.

Plasma physics advancements:

A significant focus was on high-energy and astrophysical plasmas. The researchers have transformed the complex covariant tensor equations of Relativistic Extended Magnetohydrodynamics (RXMHD) into an easily understood 3+1 vector form, paving the way for the development of highly efficient numerical solvers. Also, studies tracked acoustic wave dynamics and non-Maxwellian electron distributions near Comet 67P, showing the important role of suprathermal electron populations on extraterrestrial wave propagation.

"Empowering the African scientific trajectory, the physics department at Mansoura University has set a new standard for academic collaboration in the region by elegantly integrating the theoretical elegance of mathematical models with the urgent need for sustainable, real-world technologies."

Energy harvesting, nanotechnology and sustainable materials, and energy:
Exciting green developments were presented, including the formulation of green cementitious composites from polystyrene waste and cement dust to effectively shield and stabilize radioactive waste. In the energy domain, the authors highlighted the synergistic enhancement of triboelectric nanogenerators based on bio-derived DNA nanospheres and new azo-thiazole dopants, which significantly improve the efficiency of polymer solar cells.

Laser science and medical physics:
The focus was on advanced optics, including dynamic wavefront shaping with spatial light modulators, enabling non-invasive, three-dimensional control of single cells. Developed team optimized Time-of-Flight (TOF) and Point Spread Function (PSF) Positron Emission Tomography (PET) reconstruction algorithms for accurate quantification of tumor metabolism in colorectal and prostate cancers in medical physics.

Empowering the African scientific trajectory
ICPASD-1 was a powerful testimony to the role of African institutions in shaping the global scientific discourse. Empowering the African scientific trajectory, the physics department at Mansoura University has set a new standard for academic collaboration in the region by elegantly integrating the theoretical elegance of mathematical models with the urgent need for sustainable, real-world technologies.

The conference closed on Friday, April 24, with a ceremony to recognize its success.

THE AFRICAN PHYSICS NEWSLETTER

UnitaryHACK26: Tunisia edition of a global quantum computing hackathon

Figure 1: Sarra Ben Brik during the unitaryHACK26, June 13, 2026. (Photo Credit: Sarra Ben Brik)

Quantum computing hackathons are increasingly recognized as effective platforms for capacity building in quantum technologies, particularly in regions where opportunities for hands-on experience remain limited. Among these initiatives, unitaryHACK stands out as an annual international virtual hackathon organized by the Unitary Foundation, a non-profit organization dedicated to developing an open and inclusive quantum technology ecosystem that serves the widest possible community [1]. This growing ecosystem has significantly contributed to lowering barriers to entry in the field by making tools, tutorials, and collaborative environments more accessible to students and researchers worldwide.

The foundation collaborates with leading organizations, including IBM Quantum, NVIDIA, Microsoft, Amazon Web Services, and Xanadu, reflecting the strong partnership among industry, academia, and the global open-source quantum community.

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AUGUST 2026

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"This initiative reflects a broader belief that guides our work within QUANTUN Youth Branch and AQC: 'Science doesn't grow in isolation. It grows in communities.'"

During this year's edition, the event was held June 3-17, and included participants from universities and research institutions around the globe [2]. Five African nations participated through the Africa Quantum Consortium (AQC): Tunisia, Libya, Nigeria, Uganda, and Zimbabwe [3-4]. The regional participation demonstrates the increased involvement of the African nations in international events, indicating their rising interest in building expertise in the new technology arena.

On June 13, with coordination with the QUANTUN Youth Branch, we brought the unitaryHACK26 to the University of Tunis El Manar (UTM), the Faculty of Science of Tunis, hosted at the Laboratory of Atomic and Molecular Spectroscopy and Applications (LSAMA). As recommended by the AQC, we convened selected "quantum champions" from across Tunisia, known for their active engagement within academic and research communities. They engaged individually and in groups on projects related to open-source bounty hacking, programming, and shared their insights with each other. This collaborative environment allowed participants to exchange ideas, improve their understanding of programming workflows, and engage with open-source contribution practices in a structured setting. The day involved a mix of presentations, teamwork activities, and active participation. The day started with an introductory session on the purpose of unitaryHACK26 and the idea of open-source contributions. Next, participants engaged in a warm-up exercise to facilitate their engagement and prepare them for the coming teamwork exercises. Throughout the day, participants engaged with various issues through interactive sessions. The discussions also highlighted their role in supporting the growth of a technology ecosystem that benefits society as a whole.

From a personal standpoint, as lead organizer and the national coordinator at the AQC, I have been actively involved since 2022 in the organization of various initiatives within my country.

Through these activities, I have facilitated the organization of workshops, hackathons, and other forms of events to raise awareness about quantum computing, as well as increase involvement from the students and develop skills. This work has facilitated connections among our students, researchers, and various international communities in order to integrate ourselves into global initiatives within the field.

Thus, I am proud of the results we have been able to achieve in creating a more organized and motivated ecosystem, and I am eager to contribute further to the creation of a thriving quantum community in Tunisia.

This initiative reflects a broader belief that guides our work within QUANTUN Youth Branch and AQC: "Science doesn't grow in isolation. It grows in communities."

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THE AFRICAN PHYSICS NEWSLETTER

Jonah Nagura: From northern Nigeria to the quantum engineering frontier

Photo Credit: Jonah Nagura

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Childhood, motivation, and research interests

Jonah Nagura was born and raised in northern Nigeria, in a home where science was part of everyday life. His father is an education professor in the biological sciences, and that early exposure shaped how he learned to think: curious, rigorous, and experimental. Nagura's curiosity for science started in childhood when he read his father's monthly issues of New Scientist and Popular Mechanics magazines. These magazines motivated him to understand how the world works. He first became interested in questions about the origin of the universe and later developed an interest in quantum mechanics and its applications, including superconductivity and semiconductor technology.

Nagura is now a Ph.D. candidate in the quantum science and engineering program at the University of Chicago, working at the intersection of quantum materials, computation, and quantum technologies. Trained across three continents, he earned a pre-Ph.D. diploma in condensed matter physics from the Abdus Salam International Centre for Theoretical Physics (ICTP) in Italy (2021), and a B.S. in physics from the University of Ibadan in Nigeria (2019).

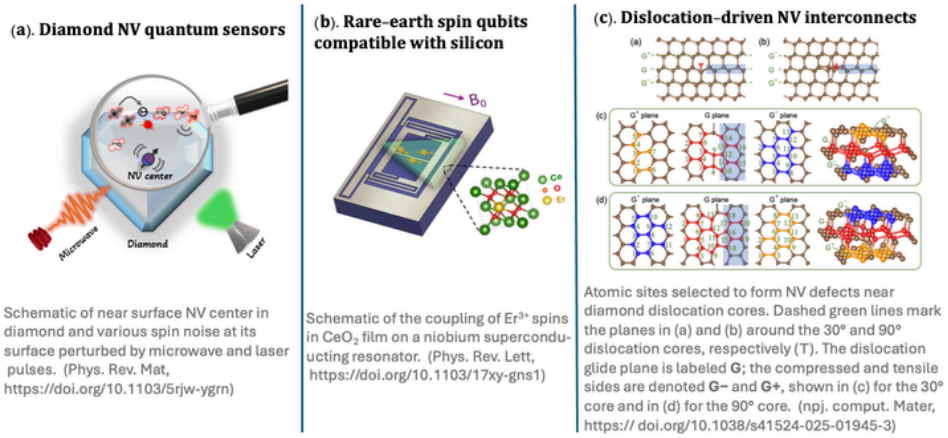

Figure 2: Nagura's three research directions: (a) near-surface NV centers in diamond subject to surface spin noise; (b) Er^{3+} spins in CeO_2 on a niobium superconducting resonator for telecom-band quantum networking; and (c) atomic site mapping near diamond dislocation cores for engineering scalable NV qubit arrays. (Photo Credit: Jonah Nagura)

His research combines first-principles simulations with quantum information to study spin defects and the noisy environments that limit solid-state qubits. Bridging theory and experiment, his work spans engineering diamond interfaces for quantum sensing in biological settings and developing chip-integrable, telecom-relevant rare-earth spin qubits for the quantum internet.

Doctoral research

Nagura's doctoral research focuses on turning solid-state spins into practical quantum hardware by modeling and controlling environmental noise that limits them. His work focuses on three related research directions: quantum sensors in diamond, telecom spin qubits that fit on silicon, and scalable architectures that use crystal imperfections as a resource.

Diamond NV quantum sensors: What limits coherence near surfaces, and how to fix it [1]

To use spin defects such as the nitrogen-vacancy (NV) center as qubits and reliable nanoscale quantum sensors, we often need to position them only a few nanometers from the diamond surface, which is where they are most sensitive to external signals. The tradeoff is that shallow NV centers (typically within ~20 nanometers of the surface) decohere more quickly. Surface proximity introduces additional noise channels, including magnetic noise from fluctuating surface spins, electric-field noise from surface charges, and coupling to surface-related phonons, all of which accelerate dephasing and limit sensor performance (see Figure 2.[a]).

Nagura built atomistic models of diamond surfaces and connected them to NV decoherence simulations to identify what limits coherence and how to mitigate it. His framework combines realistic surface structures and terminations with cluster-correlation-expansion coherence calculations, and it cleanly separates contributions from nuclear spins, static surface electrons, surface-spin relaxation, and surface-spin hopping. This lets us pinpoint the dominant decoherence channels and derive practical strategies to suppress them. These results are presented in a Physical Review Materials paper, which was selected as an Editors' Suggestion.

Quantum communication on chips: rare-earth spin qubits compatible with silicon [2]

In parallel, Nagura worked on rare-earth spins as telecom-native qubits that can be fabricated and integrated directly on chip. The motivation is straightforward: erbium provides optical transitions in the telecom C-band and is naturally compatible with device-scale photonics, which is exactly what quantum networking requires (see Figure 2.[b]). In his thesis, he focused on identifying and engineering materials that support long-lived spin coherence and robust control on timescales relevant to quantum communication protocols. The results of this effort are presented in a Physical Review Letters paper.

Dislocation-driven NV interconnects and entanglement [3]

A core part of his Ph.D. thesis is the idea that crystal "defects" can be engineered into scalable quantum architecture. Nagura studied how to generate entanglement between spin qubits, which is essential for building quantum computers and implementing the quantum gates required for complex computations. His approach is bottom-up and materials-first, aimed at making connectivity something you can design into the host crystal rather than add as an external layer. In particular, he explored how dislocations can be used to pattern spin qubits into quasi one-dimensional arrays of point defects (see Figure 2.[c]) that can be coupled and entangled. This work led to a publication in npj Computational Materials (Nature Portfolio).

Career achievements and scientific contributions

Nagura develops open-source computational tools for quantum research. At the Midwest Integrated Center for Computational Materials at Argonne National Laboratory, he contributed to PyCCE, a GPU/MPI-accelerated framework for large-scale decoherence simulations used by researchers worldwide. The acronym stands for graphics processing unit message passing interface. He also helped develop the master-equation cluster correlation expansion, improving qubit modeling in time-dependent environments. His research focuses on quantum and AI-driven algorithms that accelerate computation, reduce the cost of high-fidelity simulations, and enable faster study of complex scientific problems. In addition to his research work, Nagura participates in scientific and professional communities such as Quantum Nigeria, the African School on Electronic Structure Methods and Applications, and satellite events held in Nigeria under the auspices of the Nigerian American Physical Society's Global Physics Summit. It is beyond doubt that Nagura's academic and research journey will continue to advance quantum science through computational modeling, collaborative research, and community engagement while supporting broader participation of African scientists in advanced scientific research.

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THE AFRICAN PHYSICS NEWSLETTER

Stephen Inkoom: Protecting patients and building medical physics in Africa

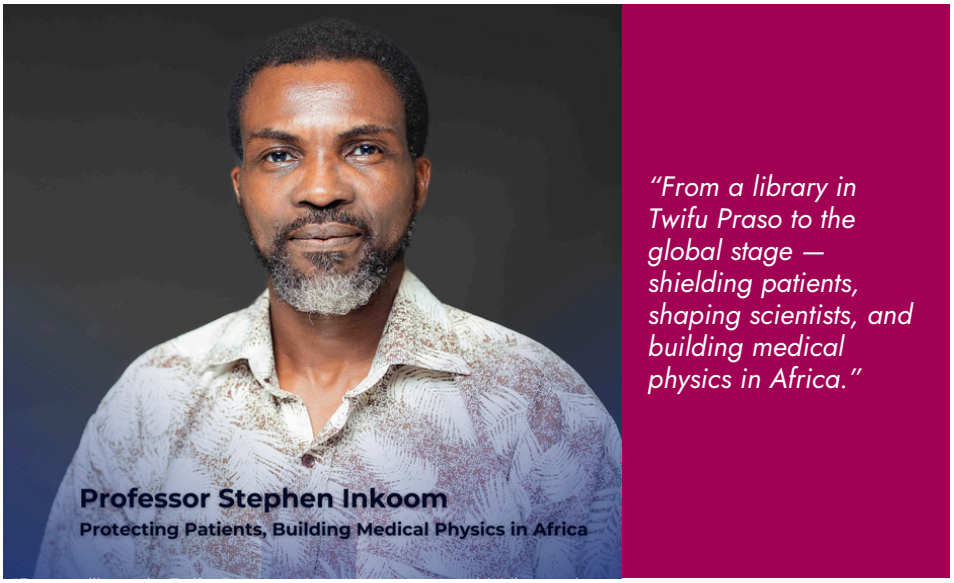

Figure 1: The photo features Stephen Inkoom, deputy director, Radiation Protection Institute, Ghana Atomic Energy Commission; IOMP International Day of Medical Physics Award 2025 recipient; secretary general, Federation of African Medical Physics Organizations; and one of Africa's foremost voices in radiation protection and patient safety. (Photo credit: Stephen Inkoom)

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Childhood and education

Stephen Inkoom was born in Twifu Praso, located in the Central Region of Ghana, and is the second of seven children. Raised in a modest yet supportive environment, he demonstrated a strong intellectual curiosity and a desire to understand how things worked around him from an early age. He frequently visited community libraries, followed local and international news through radio broadcasts, and read newspapers that his father regularly purchased. These activities helped broaden his worldview and nurtured his growing interest in science and current affairs.

Inkoom earned his bachelor's of science degree in physics from the Kwame Nkrumah University of Science and Technology (KNUST) in 2003. He subsequently pursued a master's of science degree in medical physics from the University of Ghana in 2006, followed by a Ph.D. in medical physics from the same institution in 2014. His doctoral studies were undertaken as a sandwich program between the University of Ghana and the University of Crete, Greece,

"Stephen Inkoom is a medical physicist whose doctoral research at the University of Ghana tackled a critical but often overlooked challenge in pediatric radiology: protecting young patients from unnecessary radiation exposure during computed tomography (CT) scans."

with support from the International Atomic Energy Agency (IAEA) and the government of Ghana. In 2023, Inkoom further broadened his expertise by earning a master's degree in management and administration from the University of Ghana Business School (Figure 1).

Professional journey and achievements

Stephen Inkoom is a medical physicist whose doctoral research at the University of Ghana tackled a critical but often overlooked challenge in pediatric radiology: protecting young patients from unnecessary radiation exposure during computed tomography (CT) scans. His Ph.D. work made two important contributions to the field. First, he systematically mapped the locations of radiosensitive organs inside pediatric phantoms representing children from newborns to age 10, giving future researchers reliable reference data for placing radiation dosimeters accurately [1]. Second, he investigated the use of bismuth shields to protect the thyroid gland during neck CT examinations, finding that while shields reduce thyroid dose by up to 66%, they can dramatically increase image noise — a problem largely solved by simply elevating the shield off the skin with a thin spacer [2]. His research offers practical, low-cost guidance for radiology departments seeking to reduce radiation risk in children without compromising diagnostic image quality.

Inkoom's professional career began with his service as a teaching assistant at KNUST, where he conducted tutorials and practical demonstrations. In 2006, he joined the Radiation Protection Institute (RPI) of the Ghana Atomic Energy Commission as an assistant research scientist. Over the years, his dedication and research contributions earned him progressive promotions, eventually rising to the position of chief research scientist in 2021. Currently, he serves as the deputy director of RPI and as a professor of medical physics at the University of Ghana's School of Nuclear and Allied Sciences. Throughout his career, he has played key roles in several major projects supported by organizations such as the IAEA and the Norwegian Partnership Programme for Global Academic Cooperation (NORPART). Through the NORPART initiative, he contributed to strengthening academic cooperation between Ghana and Norway. The program supported over 20 postgraduate students and trained more than 500 participants through annual summer schools focused on medical physics and radiation protection (Figure 2). Inkoom has also been instrumental in projects aimed at improving radiation protection, quality assurance, and nuclear security across Africa. His work has enhanced patient safety, healthcare quality, and professional training within the region. His leadership roles have also enabled him to influence policy, training, and research development throughout the region. In addition, he has served as a key contributor to multiple IAEA-funded projects focused on patient radiation protection, diagnostic reference levels, quality assurance in radiology, and clinical training for medical physicists, particularly in Ghana and Zimbabwe. He also serves as a focal point for the IAEA's MRPNet-Africa technical working group.

Inkoom is a prominent continental leader. He serves as secretary general of the Federation of African Medical Physics Organizations (FAMPO) and represents FAMPO on the American Association of Physicists in Medicine's International Council. He is also a member of the IAEA Radiation Safety Standards Committee, the International Organisation for Medical Physics Education and Training Committee, and the International Radiation Protection Association Task Group on Education and Training. He has contributed to shaping Africa's scientific future through the African Strategy for Fundamental and Applied

Figure 2: Inkoom demonstrates his work through training workshops, collaborative sessions, and hands-on clinical demonstrations in medical physics and radiation protection across Africa. (Photo credit: Stephen Inkoom)

Physics and has played a leading role in establishing national diagnostic reference levels across Ghana and Africa. In recognition of his outstanding contributions to medical physics and patient care, the International Organization of Medical Physics (IOMP) lauded him with the International Day of Medical Physics Award in 2025 – one of the profession's highest international honors.

Current and future research interests

Inkoom's current research centres on optimizing radiation protection in diagnostic radiology. His active areas include diagnostic reference levels, quality audits, pediatric CT dosimetry, patient dosimetry, radiation safety, quality assurance, and nuclear security.

Looking ahead, Inkoom is drawn to the intersection of artificial intelligence (AI) and medical imaging, specifically how AI algorithms can enhance image interpretation, detect subtle diagnostic patterns, and reduce radiation doses without compromising diagnostic quality. He advocates for robust quality assurance frameworks to validate AI tools before clinical deployment, and stresses the urgent need for stronger training programmes to equip healthcare professionals with the knowledge to use emerging technologies safely and effectively.

Acknowledgments

Inkoom remains grateful for the support and collaboration of the Ghana Atomic Energy Commission, the University of Ghana, his lecturers, mentors, national and international collaborators, colleagues, and students. He also warmly acknowledges his wife and children — Joseline Naa-Dei, John Herbert Baah, Gabriel Kwesi Okyere, Stephen Kobina Adom, and Joseph Yoofi Aseda Inkoom, whose support has been central to his journey.

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