

Mauritania on the Physics Map: Forging a National Community



Figure 1: (Top) Guests of honor, sponsors, and government representatives at the first International Congress of the Mauritanian Physical Society (MPS), held in June 2025 in Nouakchott. The event was attended by leaders of physics societies from across Africa. (Bottom, left) Logo of the Mauritanian Physical Society. (Bottom, right) Rabia Yahya, Ph.D., secretary general of the MPS. (Figure Credits: MPS)

In 2025, Mauritania witnessed a significant transformation of its scientific landscape, a change set in motion by the foundational establishment of the Mauritanian Physical Society (MPS) on July 3, 2024. This non-profit organization emerged with a clear, collaborative mission: to unite the nation's physicists, promote research excellence, and advance the understanding and application of physics for national development. The establishment witnessed great efforts from early-career scientists whose dedication and expertise were instrumental in laying the foundation for the society's success.

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A notable feature of this scientific renaissance has been the prominent role of women in leadership positions. Rabia Yahya, Ph.D., secretary general of the MPS, exemplifies this trend. As a faculty member at the University of Nouakchott with a doctorate from Tokyo University of Science, Yahya brings international research experience in electronics and telecommunications to her leadership role. Her active participation in global scientific initiatives, including IEEE activities and the U.S.-Africa Frontiers Fellowship, demonstrates the growing influence of Mauritanian women physicists in both national and international scientific discourse.

The First International Congress: A continental gathering

The inaugural International Congress of the MPS, a three-day event in Nouakchott that concluded on June 18, 2025, was held under the high patronage of the minister of higher education and scientific research. The event successfully translated its ambitious theme into a tangible program of exchange, collaboration, and vision-setting and served as a landmark event in Mauritania's scientific calendar. Under the theme "Physics in the Service of Development," the congress attracted the participation of physics association leaders from Tunisia, Morocco, Senegal, the Arab Physical Society, the African Physical Society, and the West African Physical Society, signaling broad continental support for Mauritania's scientific ambitions.

The congress demonstrated remarkable success in building bridges among academia, government, and industry. Key sponsors included the National Agency for Scientific Research and Innovation, the University of Nouakchott, the Faculty of Sciences and Techniques of the École Normale Supérieure de Nouakchott, and, notably, Mauritania Airlines – marking one of the first instances of major national industry support for fundamental scientific research. "This represents a turning point for science in our country," declared professor Dah Ahmedou Memoune, president of the Mauritanian Physical Society. "We have successfully shown that physics is not just an abstract discipline but a crucial engine for sustainable development and economic growth."

The congress featured an ambitious program that balanced theoretical excellence with practical applications. It highlighted plenary lectures by internationally renowned scientists, oral presentations showcasing cutting-edge research, poster presentations from emerging researchers through thematic sessions covering renewable energy, fluid dynamics, materials, fundamental physics, and related disciplines. The event provided a platform for knowledge exchange among international researchers, local faculty, and doctoral students. Beyond the scientific program, the congress served as a vital organizational meeting. The Society held its General Assembly, where the current executive board was unanimously re-elected – a clear vote of confidence in its leadership. The assembly also ratified an Honorary Advisory Council of eminent scientists, ensuring long-term strategic guidance.

The inaugural congress of the Mauritanian Physical Society was a resounding success. It achieved its goal of being a catalyst for development, not just by discussing physics, but by also actively building the ecosystem – the networks, institutions, and national confidence – required for science to thrive. Crucially, the Society has positioned itself as the essential intermediary platform among the scientific community, government, and industry. By convincing key national institutions and companies to invest in this vision, the Society has proven its ability to translate scientific potential into a national priority. This model ensures that the research generated will be relevant, applied, and supportive of Mauritania's development goals. By concluding with a commitment to make this an annual tradition, the congress has set in motion a process that will undoubtedly help position Mauritania firmly on the global map of scientific research and innovation.



Figure 2: (Left) Members of the MPS at the Third International Conference on Nanosciences and Nanotechnology co-sponsored by MPS. From left to right: Rabia Yahya, Ph.D., secretary general; Dah Memoud, Ph.D., president of MPS; Mohamed Abdellahi Ami, Ph.D. (Top right) from left to right: professor M. Abdellah Lemine Kerim (chair, Magnetic Materials Lab, Imam University, Riyadh, KSA), and professor Lassaad EL MIR (Gabes University, Faculty of Sciences of Gabes, Tunisia), a regular attendee of the first three ICNN editions. (Bottom right) from left to right: Brahim Khalil, Ph.D., and Ahmed Bowba Sidi, Ph.D. candidate in physics. (Photo Credits: MPS)

Expanding international engagement

In a significant development for regional scientific cooperation, Memoune recently represented Mauritania at the seventh Conference of the West African Physical Society (SOAPHYS) in Benin. The Society's participation yielded major achievements, including Mauritania's unanimous acceptance as a full member of SOAPHYS, the selection of Nouakchott to host the 2027 SOAPHYS conference, and the election of Memoune as vice president of the organization. These milestones mark a significant step in integrating Mauritanian physics into the West African research community and open new avenues for regional collaboration and funding. Building on this regional success, professor Ahmed Meissa, the Society's vice president participated in the 44th High Energy and Particle Physics Congress in Cairo, Oct. 20-23, 2025, at the invitation of the Arab Physical Society. During the congress,

the vice resident delivered a presentation on "High Energy and Particle Physics in Africa" and showcased the Mauritanian Physical Society's initiatives. The event provided a valuable platform for strategic discussions with Arab Physical Society leaders and other collaborators regarding Africa's scientific research development strategy and future cooperation opportunities with the Mauritanian Physical Society.

MPS demonstrates its growing international engagement through sponsoring the Third International Conference on Nanosciences and Nanotechnology (ICNN 2025), chaired by Professor Mohamed Lemine. Currently a professor of physics at Al Imam University in Riyadh, and MPS' Honorary Advisory Council member, Lemine brings extensive international experience from his previous positions at King Khalid University (Saudi Arabia); Picardie University (France); and the University of Lorraine (France). As the founder and leader of the Magnetic Materials Laboratory at Al Imam University and recipient of numerous awards, including the Chinguitti Award for Sciences and Technologies, he brings considerable expertise to this role. Reflecting on the conference's significance, Lemine stated: "This conference will continue to highlight recent advancements across a broad spectrum of nanosciences and nanotechnologies, with a focus on their integration into various applications."

A foundation for sustainable growth

The establishment of the MPS and its successful inaugural congress have created a sustainable framework for physics development in Mauritania. By fostering both national cohesion and international partnerships, the Society has positioned Mauritanian physicists to contribute meaningfully to continental scientific initiatives while addressing pressing national development priorities. The inclusive leadership model and strategic focus on applied research suggest a promising trajectory for physics in Mauritania, with potential ripple effects across West Africa's scientific landscape.

