# On the African Physical Society, AfPS, Launch and the African Physical Review Journal, APR

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*The present paper brings information related to the launch of the African Physical Society in Dakar last January and the position of the African Physical Review as the official publication medium of the society.*
*The Abdus Salam ICTP which was the background of all scientific African initiatives and drive forward is also recalled by the occasion. Memory is towards the ones who launched ICTP in 1964 and to Prof Sreenivasan the former ICTP director who spend lot of time and energy to boost science and technology in Africa. The efforts of Prof. FK Allotey who used all the United Nations institutions and Scientific Societies worldwide to help developing Africa were vital.*

## 1. Introduction

The African Physical Society has been launched in Dakar (Senegal) in conjunction with the LAM9–EBASI7 NSBP[1] Conference on Sustainable Development on January 12th 2010. The great importance given to AfPS launch is shown by the invitation of a representative delegation by His Excellence the President of the Senegalese Republic. The idea of launching the AfPS is far back to the 1980s, however due to several facts both social and political, the society could start officially only last January.

The AfPS is seen as a way for connecting the African physicists and technologists. It seeks a new link for participating to the African sustainable development. It can be seen as a motor driving the various scientific initiatives all together with the other African scientific institutions.
With the great help of ICTP, the African Physical Review Journal (APR) is launched and had already few volumes. Nobel laureates act as reviewer and hence raise the prestige of the journal that is online and free for developing countries. ICTP ensures the publication and diffusion of the APR publications after the peer reviewing process.

## 2. The African Physical Society

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[1] *LAM9 : 9th African Laser Atomic, Molecular and Optical Sciences Network Meeting*
*EBASI7 : 7th Edition of the Edouard Bouchet – Abdus Salam Institute (US - African Institute)*
*NSBP : National Society of Black Physicists (US Scientific Society)*

The African Physical Society is a non-governmental professional association legally incorporated under the laws of the Republic of Ghana, along with the African Association of Physics Students as a subsidiary organization.

It provides a forum to bring together for the purposes of networking, collaboration, and advocacy, all the existing national physical societies, e.g., the Ghana Institute of Physics, Cameroon Physical Society, South African Institute of Physics, Kenya Physical Society. In addition to supporting the existing societies, the African Physical Society endeavors to support and represent physicists and physics students working and studying in countries that do not have a national physical society. It hopes to catalyze the creation of more national physical societies. As an advocate for physics across the continent, the African Physical Society endeavors to increase the resources for physics training and research in Africa, and the economic and social development that follows.

Likewise the purpose of the African Association of Physics Students is to encourage physics students in their scientific and professional work in an African and an international context as well as to promote relations between physics students from all over the world.

The African Physical Society and the African Association of Physics Students are therefore organizations in which all African physicists and physics students can be members, independent of their field of research or country of work or origin. They endeavors to represent the interests of all African physicists and physics students in matters that have a continent-wide and world-wide impact.

**Why an African Physical Society?**

In the press release announcing the launching of the African Physical Society, Professor Francis Allotey gave one the overriding *raisons d'etre* of the organization. In the 2008 physics research publication and citation data, no African country, not even South Africa, ranked in the top 20 in physics publications or citations.

"It is unfortunate that most of physics activity is invisible to the rest of the world," said Allotey, "Yet we know that there are pockets of excellence in physics happening all across the continent. African physics needs a global on-ramp for the rest of the world so that these pockets can more easily be linked to the rest of the world. We intend for the African Physical Society to be a strong and unified voice for physics in Africa. We will better organize the African physics community, build better networks on the continent and beyond, be a strong advocate for more resources for physics research and education, and be mentors for students studying physics."

In each country on the top-20 list there are national and regional structures that organize physics and astronomy, as well as S&T investment in general, which propelled them into the upper echelons of gross domestic product. This resonated at the African Union where AU Commission Chair, HE Jean Ping, expressed his well-wishes for the African Physical Society.

"Investment in physics and astronomy is both an important input and output of economic and social development across the continent." said Mr. Ping. "The key to physics and astronomy leading economic development is for physicists and astronomers to organize,

to advocate, to evangelize, to push back the frontier of science and its relationship to everyday people."

**Originally launched as the Society of African Physicists and Mathematicians**

On Friday, 26th August 1983, thirty-four African scientists from various parts of Africa out of concern for:

- The present state of Physics and Mathematics in Africa
- Lack of cohesive and functional links among African Scientists.
- The great scientific and technological gap between the industrialized and developing countries of the world, particularly countries in Africa, are aware that Mathematics and Physics are the basis of modern science and technology,

held a meeting at the Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy and resolved to form the Society of African Physicists and Mathematicians (SAPAM).

The formal inauguration of the Society took place fourteen months later in Trieste, on October 8th 1984. This was at the Pan-African Symposium organized by the Society on the "State of Physics and Mathematics in Africa". It was attended by over 100 participants from all over Africa. Since its formation, it has organized over 40 workshops, in many countries in Africa, such as Ethiopia, Zimbabwe, Egypt, Ghana, Benin, Senegal, Sierra Leone, Burundi, Cote D'Ivoire, Liberia, Botswana, Nigeria and South Africa.

SAPAM physics activities in Africa have been supported by ICTP, UNESCO, OPEC Fund, United Nations University, Africa Academy of Sciences, United Nations Environmental Program (UNEP), International Development Research Program (IDRC), TWAS, Swedish Agency for Research Co-operation with Developing Countries (SAREC) and many more.

SAPAM which is recognized by Physical Societies Around the World and by the Organization of African Union, has links with American Physical Society, European Physical Society and U.K Institute of Physics and has been participating in IUPAP activities.

On the basis of its achievements in the development of physics in Africa, the OAU recognized it and passed a resolution on the 8th July, 1990 in Addis Ababa, Ethiopia giving it an observer status to OAU. From the above it is clear that SAPAM has been acting as an Africa-based physical society since 1983.

**Decision to Relaunch SAPAM as the African Physical Society**

At a meeting of over 200 from all over Africa that took place on 24th January, 2007 at the iThemba Laboratory, South Africa, it was resolved that SAPAM should change its name and become known as African Physical Society. This was accepted by the executive officers and members of SAPAM. It was further agreed at that meeting that the re-launch of SAPAM as the African Physical Society should take place in November, 2009 in Dakar, Senegal. All of SAPAM's reciprocal relationships and observer statuses, e.g, with the African Union and IUPAP, will be transferred to the African Physical Society.

**Support of the African Association of Physics Students**

In 2005 a group of physics students, primarily in Nigeria but also from South Africa and other countries, organized the African Association of Physics Students (AAPS). They also organized the African Conference of Physics Students (ACPS), which was held in Abuja, Nigeria in November 2005.

After the 2007 EBASI meeting in Cape Town it was decided that the African Physical Society should support the AAPS not only with mentoring and training, but also with organizational infrastructure. It was later decided and accepted by the students that started AAPS that the organization should be incorporated as a subsidiary organization of the African Physical Society.

It was further decided that inasmuch as possible, future ACPS meetings should coincide with conferences of the African Physical Society. This would help ensure that the work of AAPS and AfPS would always be linked, that students would have the opportunity to meet mentors and role models from across Africa and around the world, and that there would be administrative and budgetary efficiencies for the physics student organization in Africa.

**Organizational Meeting in Cape Town, South Africa**

On November 14, 2009 the South African Institute of Physics and the Institute of Physics (UK) convened a historic meeting in Cape Town, South Africa of many if not most of the existing national physics societies in Africa, e.g., the Cameroon Physical Society, the Ghana Institute of Physics, the Nigerian Institute of Physics, and the Tunisian Physical Society. Representatives from Senegal, Botswana, Algeria, Lesotho, Kenya, Zimbabwe and several others were also in attendance.

At this meeting there was strong and enthusiastic support for the formation of the African Physical Society as a Pan-African professional association of physicists, and as a networking medium and advocate for physics in Africa, reaffirming the decisions made at the 2007 EBASI meeting in Cape Town.

**The Dakar Meeting**

The 2010 Dakar meeting promises to be a historical event that officially launches the African Physical Society as a *bona fide* professional society that will not only organize and network physicists, physics organizations and physics students in Africa, but reach out to sister-societies around the world, including the Canadian Association of Physicists, all the member societies of the American Institute of Physics, of the Federation of Latin American Physical Societies (Federación Latinoamericana de Sociedades de Física), of the European Physical Society, and of the Association of Asia Pacific Physical Societies. We will also reach out to societies in sub-fields of physics like biophysics, geophysics and medical physics, as well as all other physics-related societies.

**AfPS Membership Information**

There are three types of membership in the African Physical Society

- **National Physics Societies** - We invite all physics and physics-related on the continent to become organizational member societies of the African Physical Society. All organizational member societies are entitled to representation on the AfPS executive council. All individual members of organizational member societies are automatically individual members of the African Physical Society.
- **Individual Members**- Individuals, especially physicists and astronomers working in countries that have no national physics society, are eligible for direct membership in the African Physical Society.
- **Institutional/Corporate Members** - We invite physics departments, research institutes, and corporations as institutional/corporate members.
- **International Associate Members**- Through various reciprocal agreements we invite members of non-African physics and physics-related societies as members of the African Physical Society.
- **Honorary Members** - Honorary members are elected by the executive council of the AfPS.

**3. The African Physical Reviews**[2]

The APR is initiated by the ICTP publication office under the great help of the former ICTP Director Prof. KR Sreenivasan. The broad of editors include Nobel Laureates and it is managed by a Managing editor under the duties of Prof K. Tahir Shah. The edition, diffusion and distribution is ensured by the ICTP Science Dissemination Unit

The African Physical Review is a free on-line, peer reviewed, international journal that publishes reviews, research articles, and brief communications in all branches of experimental and theoretical physics with an emphasis on originality and relevance to the basic understanding of contemporary physics and related interdisciplinary fields. An important feature is the publication of invited review articles of interdisciplinary nature in established and newly emerging areas of physics. For example, bio-nanotechnology is one such interdisciplinary field of research. In addition, the African Physical Review publishes timely Special Issues dedicated to a rapidly developing field of physics and proceedings of conferences held in Africa.

Papers submitted are subjected to peer review that sometimes takes long to be published.

[2] *The African Physical Reviews APR has already published as a special issue the Proceedings of the International Conference on Micro and Nanotechnology ICMNT06 held in Tizi-Ouzou, Algeria, November 2006*

## 4. About ICTP-UNESCO-IAEA[3]

### Brief History

*"Scientific thought is the common heritage of mankind."* This sentiment, often expressed by ICTP's founder and long-time director, Abdus Salam, has inspired the Centre since its inception in 1964. Created during the Cold War in the heart of Europe, a continent separated by the iron curtain, ICTP provided a rare line of communication between scientists from the East and West. Later, ICTP emerged as a focal point of co-operation between the North and South, aiming to help scientists from developing countries overcome their isolation and contribute to state-of-the-art research in physics and mathematics. While details have changed with time, the basic relevance of the Center has remained unchanged.

In June 1960, the Department of Physics at the University of Trieste organized a seminar on elementary particle physics in the Castelletto in the Miramare Park. The notion of creating an institute of theoretical physics open to scientists from around the world was discussed at that meeting. That proposal became a reality in Trieste in 1964. Pakistani-born physicist Abdus Salam, who spearheaded the drive for the creation of ICTP by working through IAEA, became the Centre's director, and Paolo Budinich, who worked tirelessly to bring the Centre to Trieste, became ICTP's deputy director. After residing for four years in downtown Trieste, ICTP moved to its permanent location near the Miramare Park in 1968.

In 1979, Abdus Salam shared the Nobel Prize in Physics with Steven Weinberg and Sheldon Glashow, both from the United States, for the mathematical and conceptual unification of two of the four forces of nature—the electromagnetic and weak nuclear forces. The theory was subsequently confirmed by experiments carried out by the Italian physicist Carlo Rubbia at CERN in Geneva, who was awarded the Nobel Prize in 1984.

Trieste's ambassador of science, Abdus Salam met dozens of presidents, monarchs, prime ministers and religious leaders as head of ICTP. In his conversations, he tirelessly promoted science as a fundamental force for social progress and peace among nations.

Abdus Salam passed away in London on 21 November 1996, about two years after he resigned as director of ICTP for health reasons. Newspapers from around the world reported his death. The coverage in Italy, Great Britain and Pakistan was extensive.

In 1995, Professor Miguel Virasoro from the University of Rome was appointed to succeed Salam. He was the Centre's director until the end of May 2002.

Throughout its history, ICTP has welcomed some of the world's foremost physicists to its campus. J. Robert Oppenheimer, scientific director of the Manhattan Project in the United States during World War II, was an influential voice in the creation of the Centre and the first chairperson of ICTP's Scientific Council. Nobel Laureates Werner Heisenberg, who

[3] *In 2006, ICTP gave a sponsorship of 20.000 Euros for the International conference on Micro and Nanotechnology ICMNT06 organized in our university. With the scientific support of the former Scientific Director and Prof. FK Allotey, there were more than 40 Nationalities and 75 foreign scientists that visited us.*

formulated the uncertainty principle, and Paul A.M. Dirac, who predicted the existence of antimatter, were also enthusiastic supporters and frequent visitors to the Centre. In all, some eighty Nobel Laureates have lectured at the Centre as well as many other prestigious scientists in fields ranging from elementary particles to solid state physics to atmospheric sciences to mathematics to astrophysics.

Equally important, ICTP created a nurturing environment for the development of a constellation of institutions in Trieste, each of which is dedicated, in part, to the promotion of science and technology in the developing world. Collectively, this institutional constellation has given rise to the "Trieste System", a name that is gaining increasing resonance across the world.


***ICTP Span over the whole world***

**Mission of ICTP**

Founded in 1964, the Abdus Salam International Centre for Theoretical Physics (ICTP) operates under the aegis of two United Nations Agencies: UNESCO and IAEA and is regularised by a seat agreement with the Government of Italy. Its goals are to

- Foster the growth of advanced studies and research in physical and mathematical sciences, especially in support of excellence in developing countries;
- Develop high-level scientific programmes keeping in mind the needs of developing countries, and provide an international forum of scientific contact for scientists from all countries;
- Conduct research at the highest international standards and maintain a conducive environment of scientific inquiry for the entire ICTP community.

**Governance-Tripartite Agreement**

The Abdus Salam International Centre for Theoretical Physics (ICTP) operates under the aegis of two United Nations Agencies and has a seat agreement with the Government of Italy.

United Nations Educational, Scientific and Cultural Organization (UNESCO): This UN agency was founded on November 16, 1945. Its aim is not merely to build classrooms in devastated countries or publish scientific breakthroughs. It views Education, Social and Natural Science, Culture and Communication as the means to the far more ambitious goal of building peace in the minds of men and women.

International Atomic Energy Agency (IAEA): This UN agency, which is the world's center of cooperation in the nuclear field, was set up as the world's "Atoms for Peace" organization in 1957. The Agency works with its Member States and multiple partners worldwide to promote safe, secure and peaceful nuclear technologies. Three main areas of work underpin the IAEA's mission: Safety and Security, Science and Technology and Safeguards and Verification.

In the last years, the former director Prof Sreenivasan has stressed upon the African development. Besides the Associate scheme that has been reinforced, he organized different science days for Africa. Mainly we can distinguish, the G8-UNESCO Forum, the Africa days, Science in Africa...

**5. Concluding Notes**

The African Physical Society is an important opportunity for African scientists to build the African, perspectives. It opens a forum of discussion for boosting sciences and technology in the Continent. The African Physical Review will be the reference that mirrors the value of research works being done in different African universities.
The AfPS will also contribute to the economic development by levitating the education level in the continent.
ICTP will remain the reference that moralises all scientific and technological activities both in research and education. It will still run on the individuals' development beside the institutional development.

**ANNEX:**

# The African Physical Review

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