



FORUM TO ACCELERATE A GLOBAL DIGITAL WORLD

APS-FIP PHYSICS MATTERS COLLOQUIUM

April 25, 2024

Stephane Kenmoe

Duisburg-Essen University, Essen, Germany

Education as a **public good** and a **human right**

Urgent need to empower **Sci & Tech societies : non conventional ecosystems**

Digital Education: ease access to knowledge and circulate

Digital equipment: good quality internet connections.

Digital learning and communication **platforms** : website, app

Technical and soft-skills training: Students and Teachers to take advantage of digital tools.

Convey the message **efficiently** in the **digital sphere:** how if digital tools to not apply ?

HOW REDUCE THE SCIENTIFIC AND TECHNOLOGICAL LAG?

LAGOS, NIGERIA 1980

Kwakye, E.B.

Implications of the Lagos Plan of Action for science...

UNESCO Regional Office for Science and
Technology for Africa

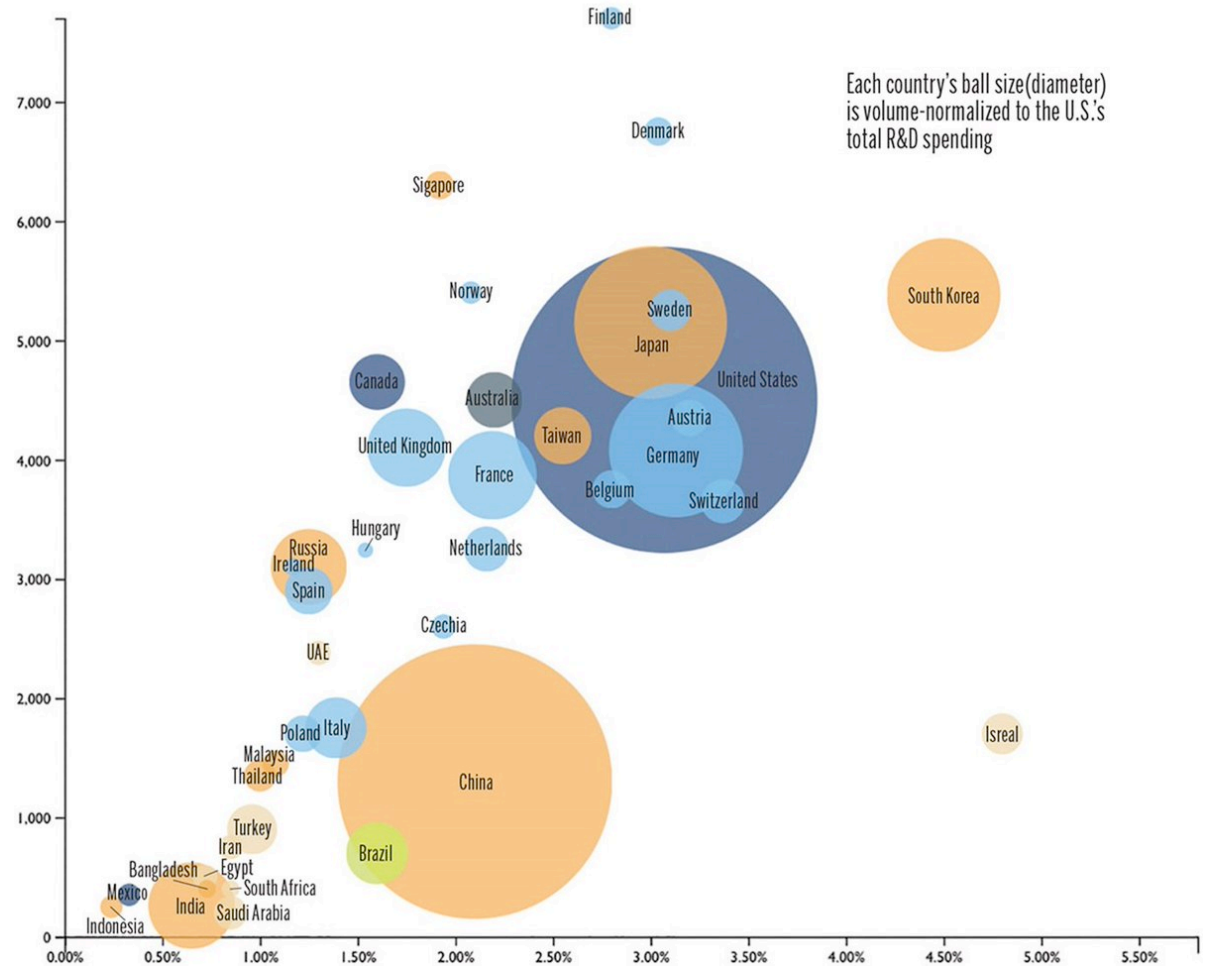
1% GDP to R&D



200 scientists / million inha.
vs.
1500 in average in the world



WORLD OF R&D 2022



R&D World magazine 62nd annual global R&D funding forecast



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Africa generates less than 1% of the world's research

VEHICLE OF INFORMATION AMONG SCIENTISTS

THE AFRICAN PHYSICS NEWSLETTER (APN)



Quarterly published by **APS**

Launched in 2019

Open to everyone

News gathered, elected and edited by an editorial board of African physicists

Hosting, copyediting, formatting and distribution from APS

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APN AT WORK

An advisory board



10 regional editors in the 5 regions of Africa



02 Junior editors



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[nature](#) > [nature reviews physics](#) > [q&as](#) > article

Q&A | [Published: 19 September 2023](#)

Connecting physicists across Africa and the world

[Zoe Budrikis](#) & [Stéphane Kenmoe](#)

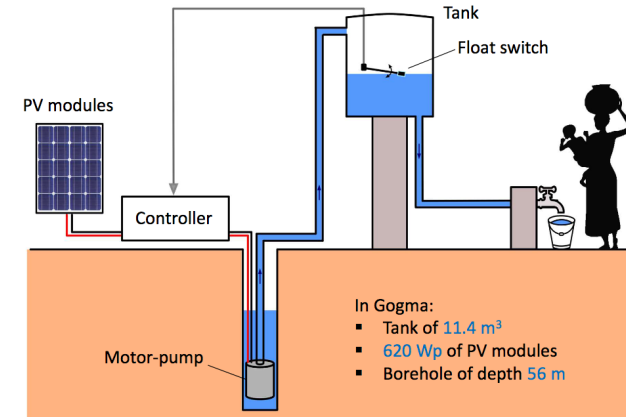
[Nature Reviews Physics](#) (2023) | [Cite this article](#)

VEHICLE OF INFORMATION AMONG SCIENTISTS

Capacity building: ASP, ASESMA
Regional networks: CEPAMQ
Infrastructures: UB-CeDD, Cameroon



The sickle-cell patient who became a space physicist.



Turning Sun into Water
in Burkina Faso



When Women Build Bridges

Stéphane Kenmoe

In the last issue of the African Physics Newsletter, Dr. Maryse Nkoua of the Nanomaterials and Nanotechnology Research Unit at the Marien Ngouabi University described the struggle to complete the establishment of a laboratory at the university and the National Institute for Research in Exact and Natural Sciences located in Brazzaville, Republic of Congo. Following this article, which was relayed by the online news site Afriscitech [1], two important personalities reacted positively.



Figure 1: Dr. Maryse Nkoua

© International Center for Theoretical Physics (ICTP)

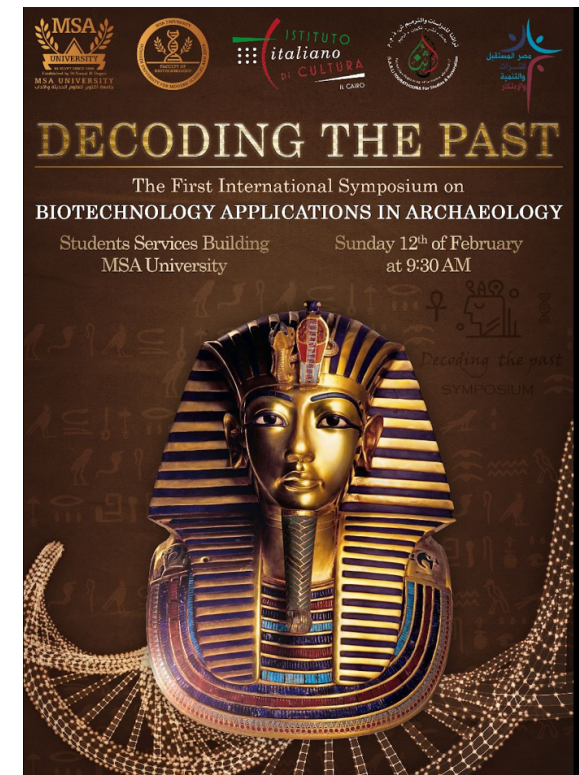


Figure 2: Dr. Ralissa Malu

© Next Einstein Forum



The rhisotope project



■ subscribers
location

Created with mapchart.net

1119 Subscribers in 91 countries

Africa 611**USA 273**



APN IN 40 / 54 AFRICAN COUNTRIES

16 NATIONAL SOCIETIES

611 / 1119 Suscribers

Cameroon 124

South Africa 112

**Gabon, Tchad,
Somalia, Mauritius**

**Central African Republic
Gambia, Liberia, Eritrea
Comores**



Forum on
**INTERNATIONAL
PHYSICS**



Winter 2023/2024

American Physical Society

aps.org/units/fip/



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Circulate > 5k

International tribune

Forum on Physics and society

African Physics Newsletter

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Keywords: **International, without borders**

Topical issues: **Communication & Education**

Editorial Committee

- Stephane Kenmoe — Stephane Kenmoe, University of Duisburg-Essen, DE (FIP Newsletter Editor)
- Christine Darve - European Spallation Source, SE
- [See “FIP Outreach & Communication Committee \(OCC\)”](#)

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Professional and Communications Training for Scientists

23-27 May 2022
An ICTP Virtual Meeting
Trieste, Italy

Further information:
<http://indico.ictp.it/event/9793/>
smr3710@ictp.it

Communications skills, professional inter - and intra-personal skills, and career management skills are all much easier to learn and benefit from when taught explicitly, rather than picked up casually in the course of technical training. This workshop is designed for scientists, at all stages of their careers, interested in being more successful scientists, colleagues, and mentors.

Topics:

- Scientific Presenting
- Scientific Writing & Editing
- Communications Barriers
- Emotional Intelligence in the Workplace
- Mentoring
- Decision Making & Leadership
- Career Planning & Advancement
- Networking
- Cross-Cultural Collaboration
- Social Media for Scientists
- Getting & Giving Feedback
- Building Effective Work Cultures
- Customizing Messaging for Audiences
- Conflict Management
- Science Diplomacy & Policy
- Science Outreach & Engagement

How to apply:

Online application:
<http://indico.ictp.it/event/9793/>

Female scientists are encouraged to apply.

Registration:

There is no registration fee.

Directors:

S. KENMÖE, University Duisburg-Essen, Germany
A. HASSANALI, ICTP, Italy
K. CALHOUN, ICTP, Italy

Deadline:

6 May 2022



ICTP is the long time support of physics in the developing world.

MASS COMMUNICATION - DIGITAL EDUCATION

MASSIVE ONLINE OPEN COURSES (MOOC)

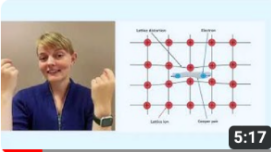
YouTube ^{CA}



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Accelerators to study the distant past
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26 views Oct 3, 2023

Speaker – Professor Phill Manning, University of Manchester, UK
Theme: Using light to reveal the secrets of fossils and dinosaurs.

This is one of a series of short films made for high school science teachers and students. They were produced by the production company Making Science the Star, with colleagues from ESS, and with financial support from the EU from an ERASMUS+ project called Accelerating Teaching – Research Facilities to support STEM Teaching.

If you are a science educator visit the Accelerate Your Teaching MOOC to find a whole free online course with lots more material on how to use large accelerator-driven research facilities as a context for your teaching:
<https://www.europeanschoolnetacademy...>

MAGNETIC

INSPIRING

CONVINCING

CINEMA AS A VEHICLE OF SCIENCE DISSEMINATION

A PUBLICATION PLATFORM



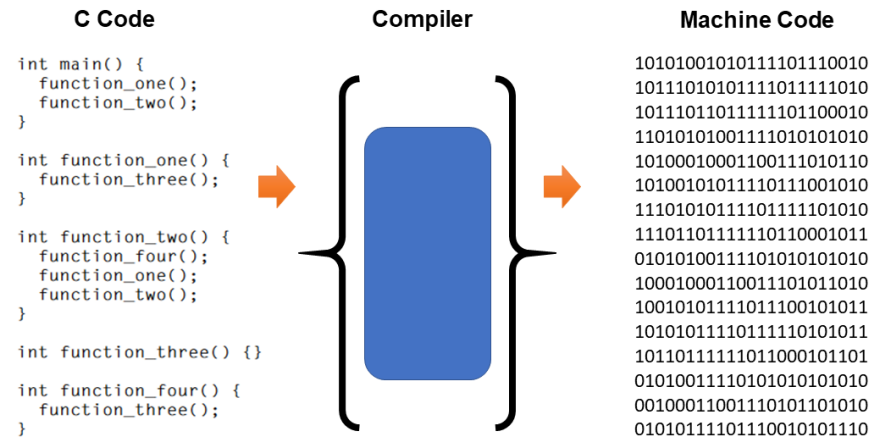
Kinematograph 1895



Jean Painleve



MS² AT WORK



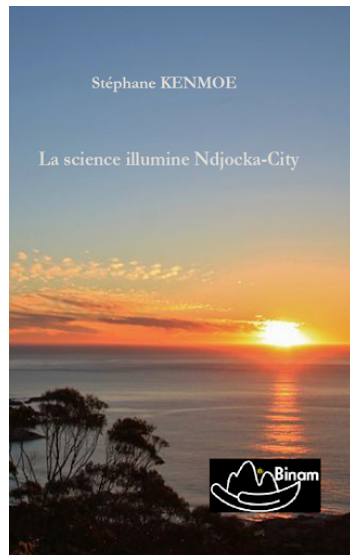
THE PROJECT
MAKING SCIENCE THE STAR
MS²

MS² = COMPILERS

SCIENCE



SOCIETY



80 movie professionals
(script writer, directors,
actors, make-up...)

Bring scientific knowledge
to everyone's reach

Involve celebrities and
opinion leaders

BRINGING SCIENCE WITHIN EVERYONE'S REACH

Topics aligning with local needs:
biomass, energy, health...

Science denialism, superstition,
women education



Input from scientists



AIMS Cameroon



MS² at work



Movie series



A PRACTICAL EXAMPLE

FROM A SCIENTIFIC PAPER TO A MOVIE

Issue 2, 2016 Previous Article Next Article

From the journal:
Environmental Science: Water Research & Technology

Pee power urinal – microbial fuel cell technology field trials in the context of sanitation† 

[Ioannis Andrea Ieropoulos](#),^{a,ab} [Andrew Stinchcombe](#),^a [Iwona Gajda](#),^a [Samuel Forbes](#),^a [Irene Merino-Jimenez](#),^a [Grzegorz Pasternak](#),^{ac} [Daniel Sanchez-Herranz](#)^a and [John Greenman](#)^{ab}

 Author affiliations

Abstract

This paper reports on the pee power urinal field trials, which are using microbial fuel cells for internal lighting. The first trial was conducted on Frenchay Campus (UWE, Bristol) from February–May 2015 and demonstrated the feasibility of modular MFCs for lighting, with University staff and students as the users; the next phase of this trial is ongoing. The second trial was carried out during the Glastonbury Music Festival at Worthy Farm, Pilton in June 2015, and demonstrated the capability of the MFCs to reliably generate power for internal lighting, from a large festival audience (~1000 users per day). The power output recorded for individual MFCs is 1–2 mW, and the power output of one 36-MFC-module, was commensurate

***Environ. Sci.: Water Res. Technol.*, 2016,2, 336-343**



Energy, biomass,
Environment, sanitation



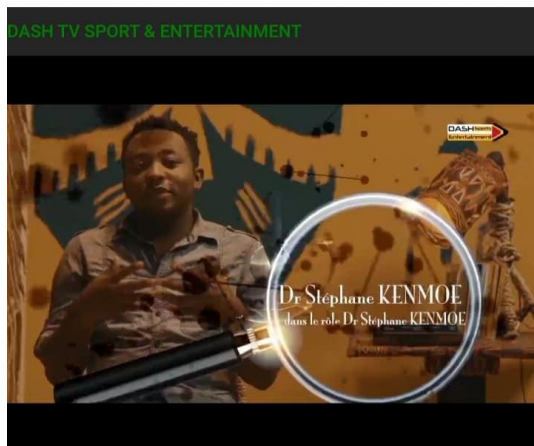
Science denialism

Superstition

BREAKING THE WALL BETWEEN SCIENCE AND FILM IN AFRICA

© CINAf platform (VOD)

Rating: 9/10



TV Digital platforms highly visited

Poor scientific culture

Basic Science missing in agendas

Scientists themselves are out

More science
spreading actions



Reach a critical
mass of engagers



Break the walls and
make a room for science

Small step in the movie industry but
Giant step for the scientific culture in Africa

FALLING WALLS AWARD 2021

CAMPAIGNING FOR BASIC SCIENCE IN AFRICA

Renewable energy, Congo Republic



CRISPR technology, Benin



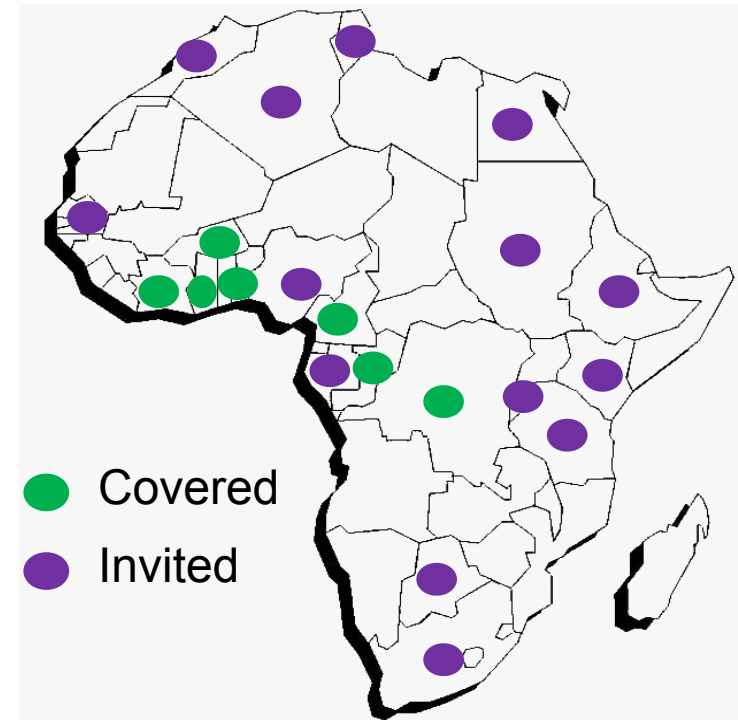
Smart agriculture, RD Congo



Science denialism & skepticism
Burkina Faso



Environment protection, Togo



THANK YOU