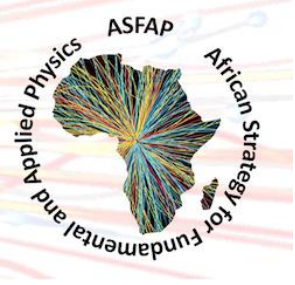




Energy Group presentation

13/07/2021



ASFAP Groups

Accelerators

Energy

Medical Physics

Earth Science

Astrophysics &
Cosmology

Nuclear Physics

Optics and Photonics

Fluid and Plasma

Atomic & Molecular
Physics

Instrumentation &
Detectors

Particle Physics

Light Sources

Computing & 4IR

Biophysics

Materials Physics

Theoretical & Applied
Mechanics



Prof. KOBOR Diouma



Dr EGBE Daniel Ayuk



Dr KARIM Mounia

Energy conveners' group

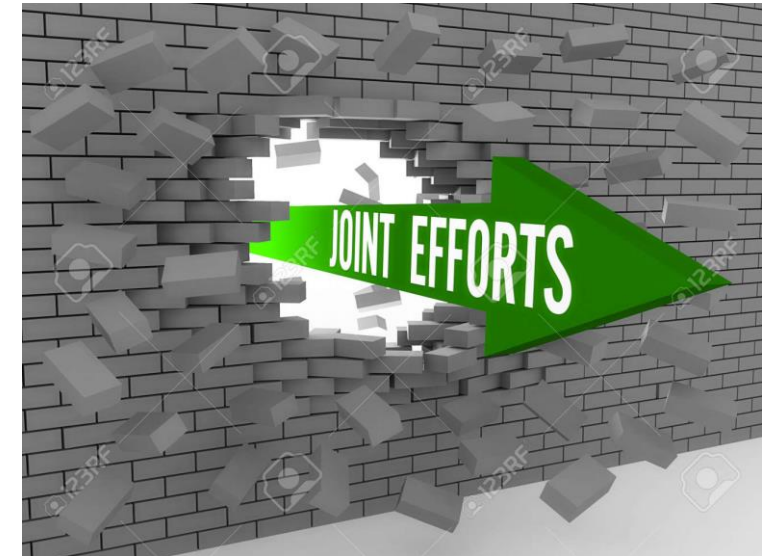
Our mission



Bringing experts together

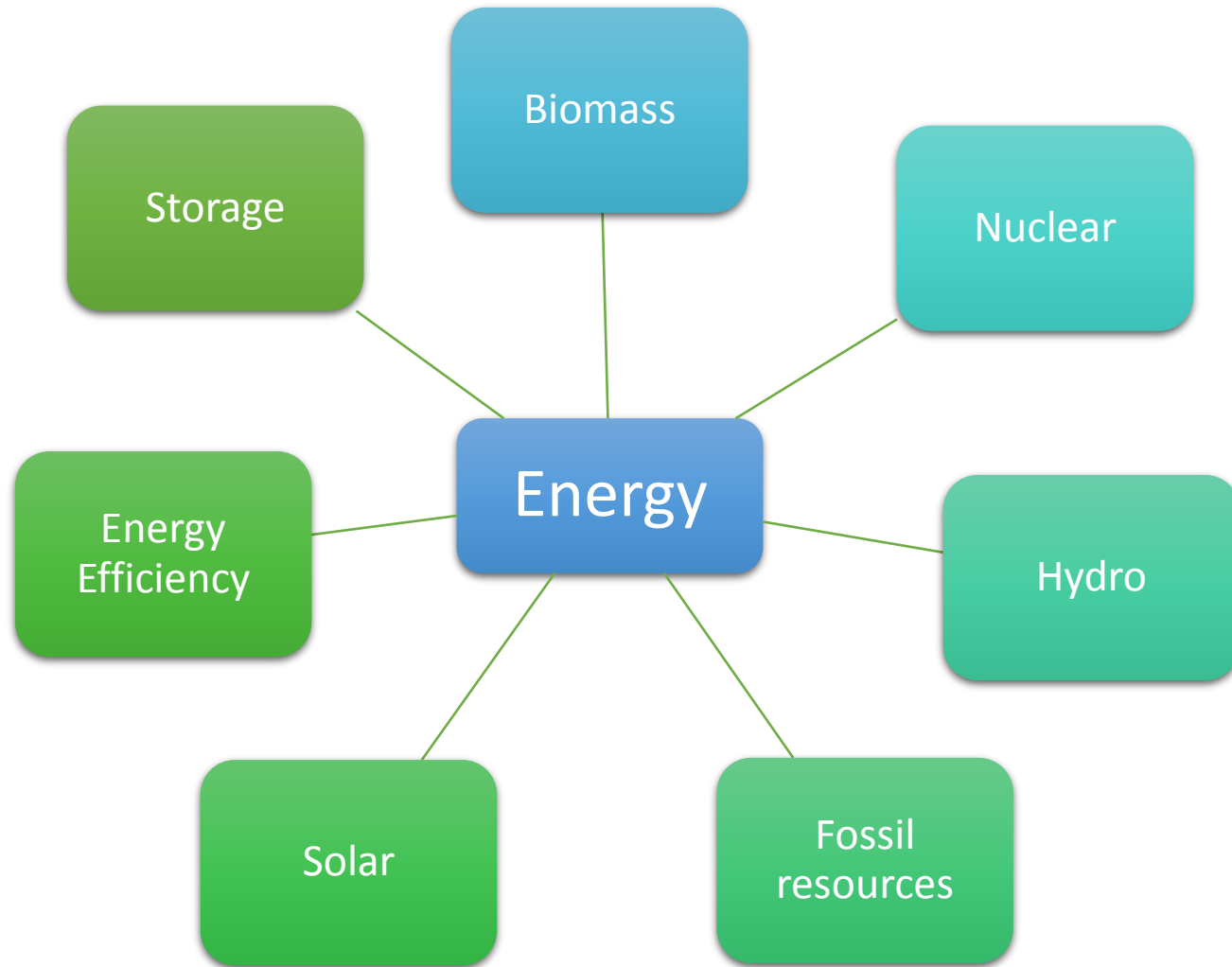


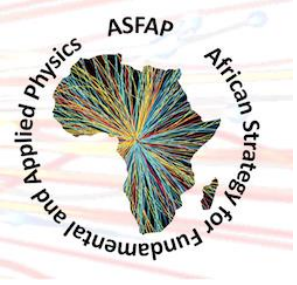
To collaborate



For a Better Africa

Let's invest in Africa's Human and Natural resources!





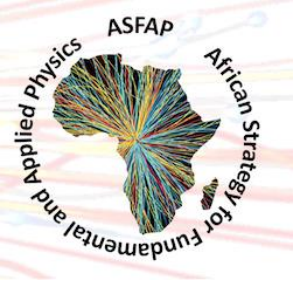
Biomass & Bioenergy

Biogas

Biocarbon

Biofuel

- Mapping, quantification and characterization of local biomass in rural area
- Valuation of biomass waste
- Modernization of traditional cooking system in rural area
- Training & Development
- Sharing information and results with actors and researchers in the field



Fossil Energy and Geo-resources

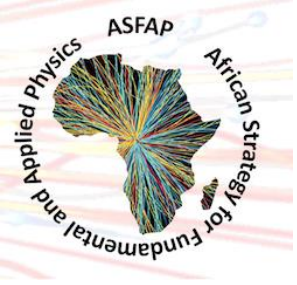
Fuel

Gas

Geothermal

**Capture and
Burying CO₂**

- Mapping and identification of local fossil energy and resources in Africa
- Ensure the fluid transition from fossil fuel resources to renewable energy development, valorization and innovation
- Training & Development in fossil energy and geo-resources
- Training & Development in Renewable Energy technologies
- Training & Development in carbon capture
- Sharing information and results with actors and researchers in the field



Nuclear Energy

Nuclear Reactors

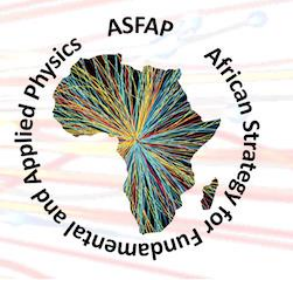
Micro Reactors

Civil nuclear

Synchrotron

Fusion Physics

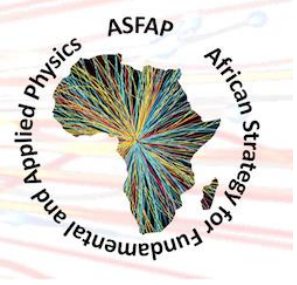
- Define and locate the continent's position on research and future of Nuclear energy
- Investigation of the application of Nuclear energy in health and civil fields
- Training & Development in Nuclear energy
- Training & Development in Synchrotron techniques
- Sharing information and results with actors and researchers in the field



Solar Energy

- ❑ **Solar PV: Organic solar cells, Perovskite, materials, CPV...**
- ❑ **Solar thermal: Water heating, desalination, CST, CSP, solar cookers...**
- ❑ **Water consumption Vs Solar Energy**

- Mapping, quantification and characterization of solar energy potential in the continent
- Valorization of solar energy resources
- Investigation of the use of solar energy in rural area and for access to health equipment
- Training & Development in solar energy application in different sectors
- Sharing information and results with actors and researchers in the field



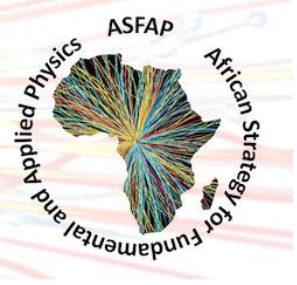
Hydro and Wind energy

Marine

Hydro

Wind

- Mapping and characterization of potentialities in hydro and wind energy around the continent
- Define the road map for developing and investing in these technologies in Africa
- Training & Development in hydro-energy and wind energy
- Sharing information and results with actors and researchers in the field



Energy Efficiency –EE–

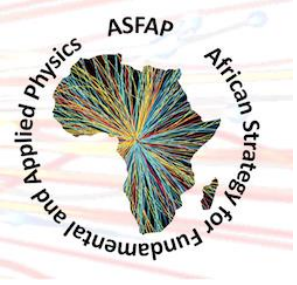
EE in buildings: local materials

EE in industry

EE in Distribution

CO₂ Compensation

- Mapping and characterization of potential abundant materials resources in Africa to be used in EE
- Investigating the adoption of Energy efficiency in different domains
- Energy distribution and transportation problems
- Training & Development in energy efficiency in buildings
- Training & Development in CO₂ compensation
- Sharing information and results with actors and researchers in the field



Energy Storage

Accumulators

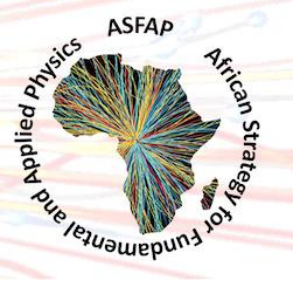
**Capacitors &
Supercapacitors**

Batteries

Hydrogen Energy

hydro storage

- Identification of difficulties and challenges in storage under the African environment
- Valorization and innovation of energy storage using local abundant materials
- Investigating the potential of the Green hydrogen storage in Africa
- Training & Development in energy storage
- Sharing information and results with actors and researchers in the field



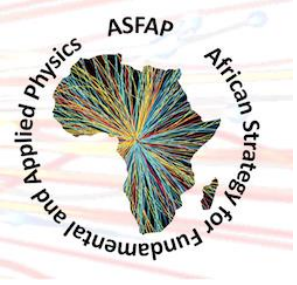
Off Grid Energy Applications

Transport

Electronic devices

Health

- Mapping and evaluation of the importance of the off-grid energy applications for the development of the continent
- Investigating the challenges facing the off-grid energy application in Africa
- Training & Development in off-grid energy applications
- Sharing information and results with actors and researchers in the field



Advanced Materials for Energy and EE

Thin films

Sensors

Perovskites materials

**Nanostructuring and
Nanotexturing**

**Valorization of the local
African Materials**

- Valorization and innovation in advanced materials
- New materials for energy and energy efficiency
- Training & Development in advanced materials
- Characterization of new and advanced materials

What's next

- We are looking for new conveners to join our group!
- Call for registration and sub-conveners is open
- Launching regular meetings to discuss how to address the different topics mentioned in the presentation
- Exchanging with other working groups in the ASFAP to better address our objectives and to minimize the potential overlapping between groups
- Preparing the Letter of intent LOI
- Regular discussion and update about the vision of the White paper to be produced within the frame of this working group

Let's come together for a better Africa!



Interested in joining us or do you have any remark or suggestion, please do contact us on:

ASFAP-Energy-admin@cern.ch