

# The PASET-Regional Scholarship and Innovation Fund for Applied Sciences, Engineering and Technology in Kenya





# Rsif in Kenya



Research. Innovate. Transform Africa

# Rsif - Designed for Impact

Flagship project of PASET



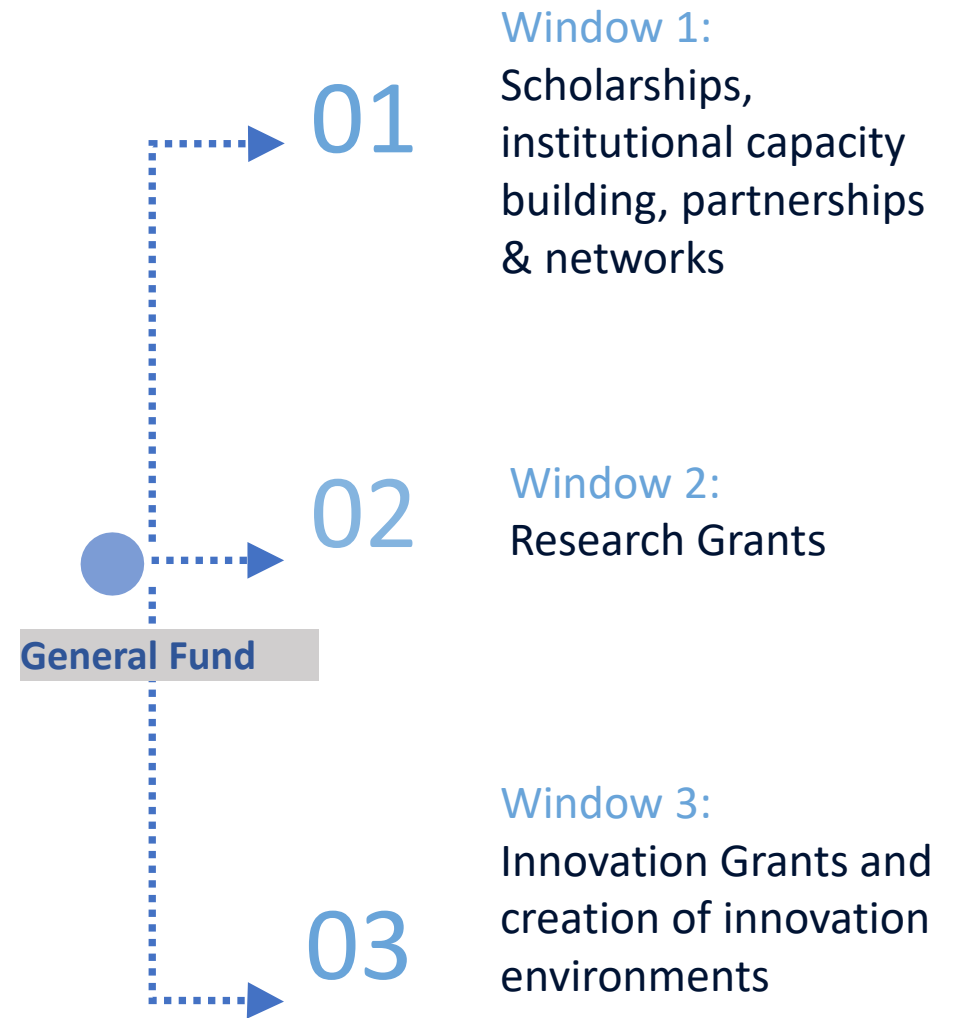
Building sustainable doctoral training, research and innovation ecosystems for development in Africa

## Objectives

— Create a stock of highly skilled scientists, professionals and innovators in applied sciences, engineering and technology (ASET) areas

— Address imbalances in the number of women and disadvantaged groups in ASET fields in Africa

— Build African university capacity to provide relevant ASET training



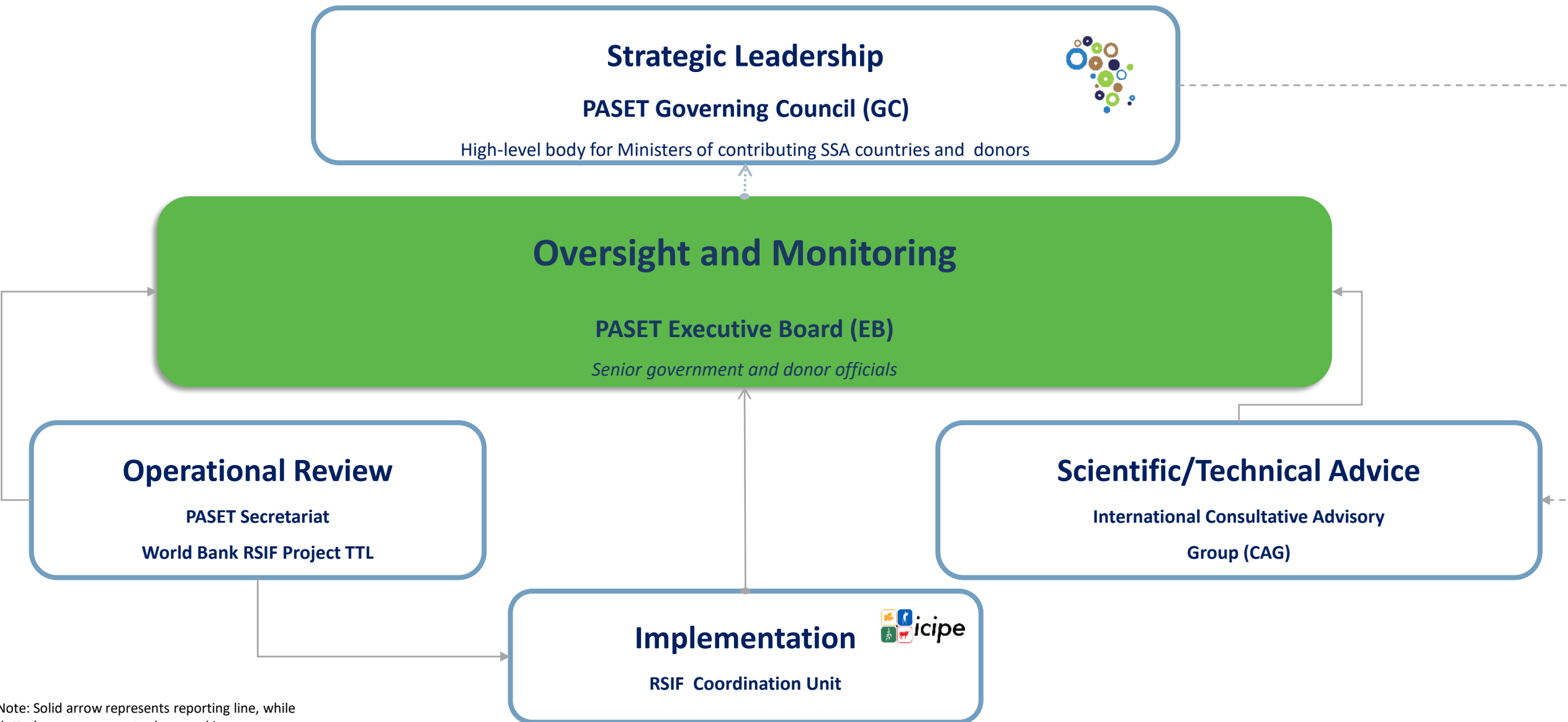


# Rsif is a unique African initiative

1. Owned and managed by African governments through PASET (11 African governments)
2. To-date, investments from 9 African governments (between US\$1 -6 million each), the World Bank, Korea and other funders
3. Managed by an African led international research/innovation and training institution – *icipe*
4. Regional approach to grow Africa's STI agenda
5. Sustainability - vision to grow Rsif into a Pan-African science fund
  - establish a Permanent fund
  - exploring innovative financing and leveraging of private capital, e.g. blockchain technology, carbon credit, venture capital fund.



# Inclusive, Efficient and Transparent Governance



Note: Solid arrow represents reporting line, while dotted arrow represents close working relationship

# icipe Rsif - Fostering Excellence

- Highly Competitive Selection
- Ongoing Mentoring

- Selective Matching
- High Level of Interaction



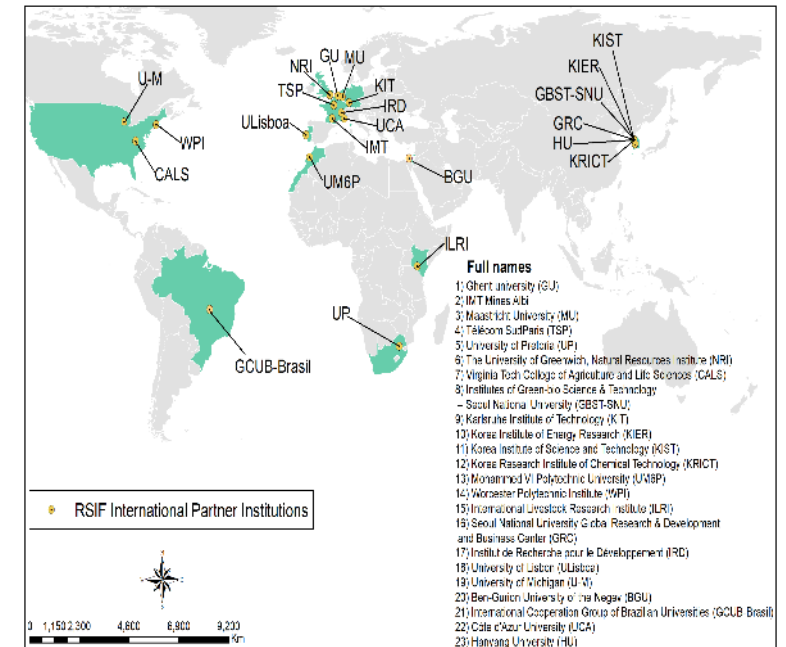
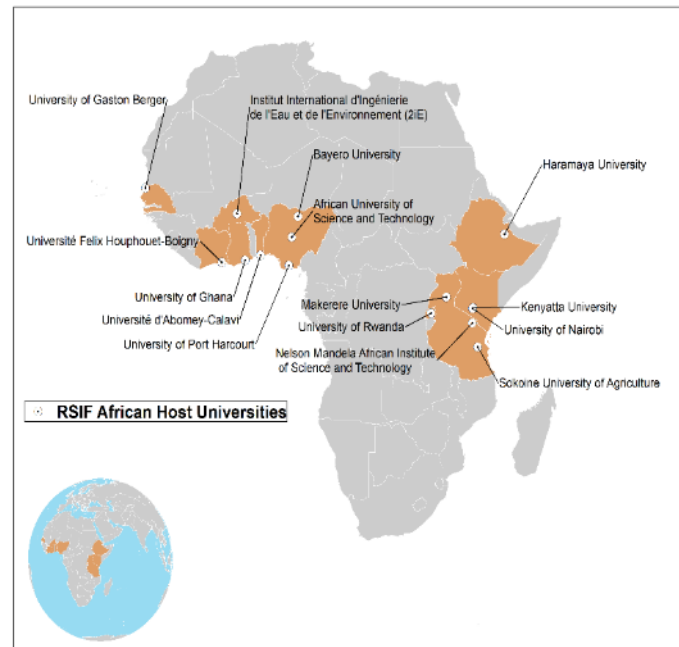
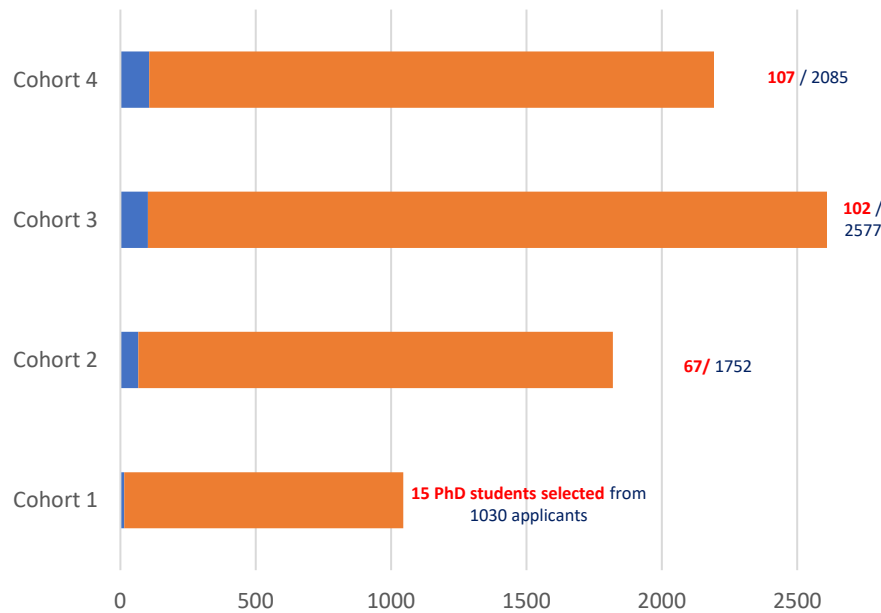
291 PhD Scholarships



15 African Host Universities  
(4 AHUs admit first Rsif students in 2022)



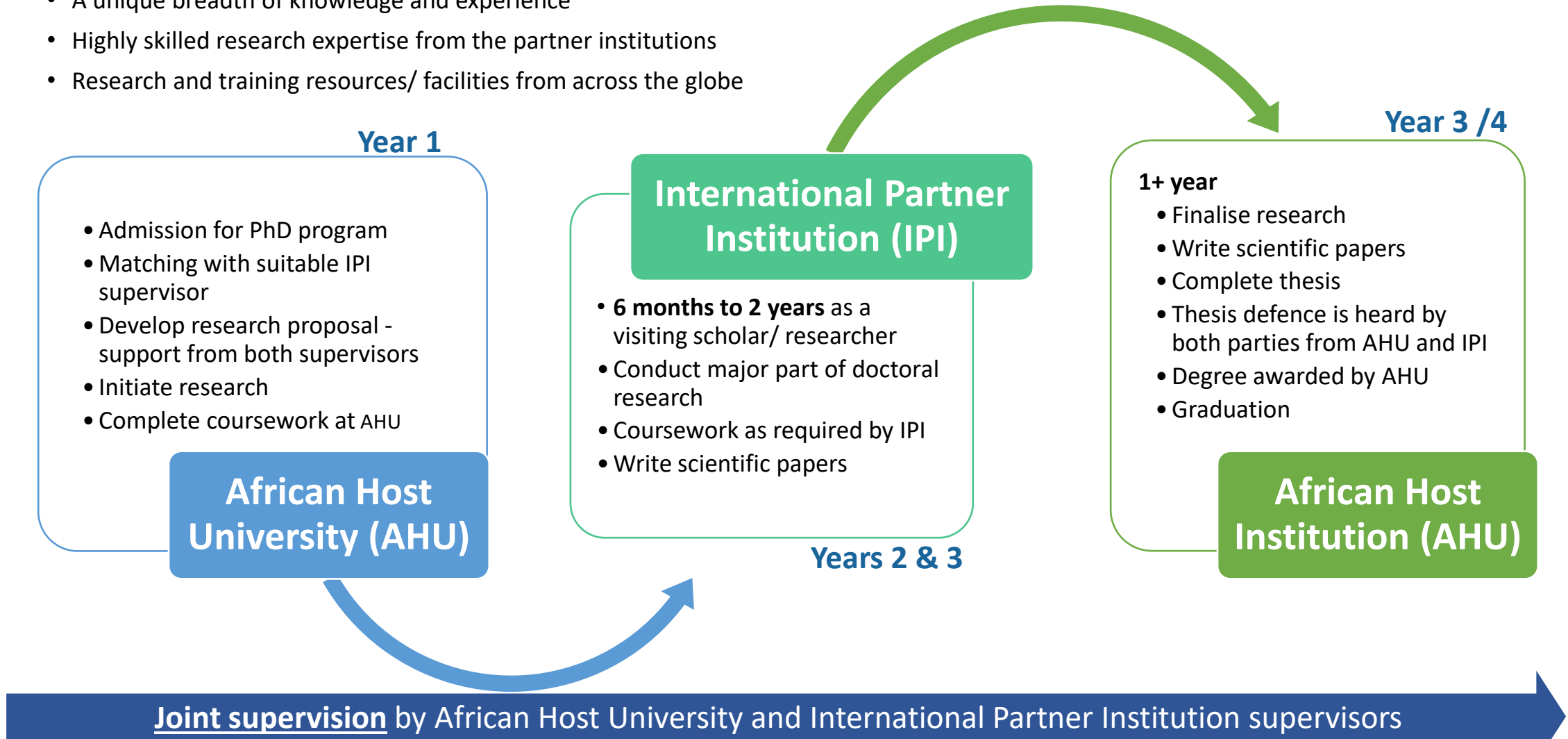
23 International Partner Institutes/universities



# Rsif PhD Sandwich Model

Enables scholars and faculty members access to:

- A unique breadth of knowledge and experience
- Highly skilled research expertise from the partner institutions
- Research and training resources/ facilities from across the globe





# Rsif and Kenya

- **Kenya was the first country to contribute to Rsif**
  - Hosted the 4<sup>th</sup> PASET Forum in Nairobi in 2017
  - Immediate former chair of PASET Governing Council
  - Participates in PASET Executive Board – Mr. James Muchiri, Ministry of Education
- **Investments in RSIF in pursuit of common agenda:**
  - supporting the building of international level PhD programmes anchored within African universities (i.e. UoN and KU)
  - accelerating high quality PhD training
  - strengthening capacity for innovative research and respond to African challenges
- **Significant benefits to Kenya**
  - Kenya made investment of USD 2 million to RSIF in 2018 and have indicated its intention to make an additional contribution



Photos: (1) Former CS Magoha, then PASET Chair interacted with Rsif students in 2019. (2) CS Machogu with other PASET ministers at the PASET Governing Council meeting in February 2023.



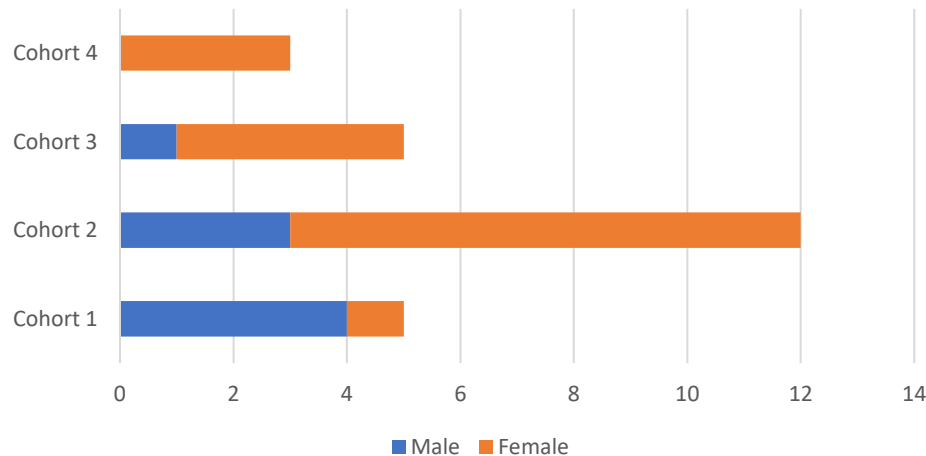


# Kenyan Rsif PhD Students Overview



- 25 Kenyan Rsif doctoral scholars (68% women)
- Scholars registered under 4 thematic areas in 8 African Host Universities (reduced “in-breeding”)

Kenyan Rsif PhD students



Thematic Area	Rsif African Host University	No. of students
Climate Change	Bayero University Kano, Nigeria	1
	African University of Science and Technology, Nigeria	1
Minerals, Mining and Materials Engineering	Kenyatta University, Kenya	1
	Nelson Mandela African Institution of Science and Technology, Tanzania	1
Food Security and Agribusiness	Makerere University, Uganda	1
	Sokoine University of Agriculture, Tanzania	9
Energy including renewables	University of Nairobi, Kenya	10
	ZiE, Burkina Faso	1

# Building Kenya's Research and Training Ecosystem: Kenyan nationals' RSIF PhD Students (25) Status

## Cohort 1

- 3 scholars graduated and 2 scholars preparing for defence and finalizing PhD thesis.
- 18 journal publications

## Cohort 2

- 9 scholars on international research placements
- 3 scholars at AHUs and collecting data in the field
- 14 journal publications

## Cohort 3

- 5 scholars at their AHUs and collecting data in the field
- Scholars to start international placements

## Cohort 4

- 3 scholars in first year of study



Photos : Cohort 1 scholars Dr Sylvia Maina and Dr Richard Koech

# Kenyan Rsif PhD Students (Cohort 1)

No	Name of Student	RSIF African Host University	PhD Research Project Title	Status	International Partner Institution
1	Dr. Richard Kipyegon Koech	African University of Science and Technology (AUST), Nigeria	Additive effects on the charge carrier dynamics and performance metrics of Formamidinium-rich mixed lead halide perovskite solar cell	<b>Graduated.</b> 12 journal publications Lecturer at Moi University, Eldoret Awarded RSIF JIRA grant.	Worcester Polytechnic Institute (WPI), USA
2	Dr. Sylvia Wairimu Maina	Sokoine University of Agriculture (SUA), Tanzania	Deciphering Biosynthesis and utility of bioactive compounds in neglected African cabbage and Ethiopian mustard vegetables	<b>Graduated</b> 3 journal publications	Korea Institute of Science and Technology (KIST)
3	Maxwell Wambua Waema	Sokoine University of Agriculture (SUA), Tanzania	Detection of selected human respiratory viruses using hydrogel microparticles based multiplex RT-Qpcr	1 journal publication	Korea Institute of Science and Technology (KIST)
4	Dr. Humphrey Andalo Mabwi	Sokoine University of Agriculture (SUA), Tanzania	Potential use of synthetic human gut microbiome communities in screening phytochemicals beneficial to intestinal flora	<b>Graduated</b> 2 journal publications	Korea Institute of Science and Technology (KIST)
5	Levi Omache	Sokoine University of Agriculture (SUA), Tanzania	Antimicrobial Resistant Biofilm Forming Salmonella and its control in the Poultry Production Environments in Dar es Salaam, Tanzania	At SUA	Korea Institute of Science and Technology (KIST)

## Video – Meet Grace Gachara

RSIF PhD student at Sokoine University of Agriculture, Tanzania  
with international research placement at University Mohammed VI Polytechnic,  
Morocco

Video link: <https://www.youtube.com/watch?v=3DWELOUCbvg>





# Kenyan Rsif PhD students in cohort 2 - 1

No	Name	Gender	Rsif African Host University	Research Topic	Status	International Partner Institution
6	Jane Gachambi Mwangi	Female	Bayero University, Nigeria	An assessment of suitable habitats and sites for conservation of East African Sandalwood in Arid and Semi-Arid, Kenya	At NRI in UK	University of Greenwich, Natural Resources Institute (NRI)
7	Bethwel Kipchirchir Tarus	Male	Nelson Mandela African Institution of Science and Technology, Tanzania	Brackish Water Desalination by Capacitive Deionization using Beaded Electrospun Carbon Nanofibers	At KIST, Korea 1 publication	Korea Institute of Science and Technology (KIST)
8	Catherine Wangui Mbutia	Female	Sokoine University of Agriculture (SUA), Tanzania	Investigation of anthropogenic effects and the role of little stint ( <i>Calidris minuta</i> ) on occurrence of multi-drug resistant <i>Escherichia coli</i> in Kenya	At SUA	ILRI, Kenya
9	Faith Njeri Njeru	Female	Sokoine University of Agriculture, Tanzania	Application of nanobody as a diagnostic tool and their antiviral properties against Maize lethal necrosis	At SUA 2 publications	University of Ghent, Belgium
10	Grace Wanjiku Gachara	Female	Sokoine University of Agriculture, Tanzania	Quantification Of Aflatoxin And Molecular Characterization Of <i>Aspergillus</i> Species: Case Study Of The Rift-Valley Region In Kenya	At UM6P in Morocco 1 publication	University Mohammed VI Polytechnic, Morocco
11	Ivy Sylvia Okello	Female	Sokoine University of Agriculture, Tanzania	Epidemiology, Drug sensitivity Pattern and Control practices of African Animal trypanosomes in Western Kenya	At VT-CALS, USA 2 publications	Virginia Tech College of Agriculture and Life Sciences (CALS)



## [Video](#) – Meet Bethwel Tarus

RSIF PhD student at NM-AIST,  
Tanzania with international research  
placement at Korea Institute of  
Science and Technology, Korea

Video link:

<https://www.youtube.com/watch?v=A0554E0-9ik>

# Kenyan Rsif PhD students in cohort 2 - 2

No	Name	Gender	Rsf African Host University	Research Topic	Status	International Partner Institution
12	Alice Achieng Kasera	Female	University of Nairobi, Kenya	Rooftop turbulence analysis for site specific wind turbine installation: An experimental analysis in Nairobi County-Kenya	At UoN	Virginia Tech, USA
13	Jacinta Okwako	Female	University of Nairobi, Kenya	Fabrication of self-powered photoelectrochromic device for smart window application	At KIER, Korea	Korea Institute of Energy Research (KIER), Korea
14	Kay Nyaboe Nyakundi	Female	University of Nairobi, Kenya	Geothermal energy system integration - optimization of combined flash and binary power plants for high enthalpy resources	At KIT, Germany	Karlsruhe Institute of Technology (KIT)
15	Mwende Mbilo	Female	University of Nairobi, Kenya	Design of efficient and stable non-fullerene acceptor-based organic solar cells by buffer layer modification	At KRICT, Korea 6 journal publications	Korea Research Institute of Chemical Technology (KRICT), Korea
16	Fredrick Mwange Mulei	Male	University of Nairobi, Kenya	Self-cleaning nanostructured protective glass for photovoltaic solar panel	At KIT, Germany	Karlsruhe Institute of Technology (KIT)
17	Jorim Okoth Obila	Male	University of Nairobi, Kenya	Stability and efficiency improvement of planar 3D/2D tin-based-perovskite solar cells	At KRICT, Korea 2 journal publications	KRICT, Korea

# Kenyan Rsif PhD students in cohort 3

No	Name	Gender	Rsif African Host University	Research Topic	Status	International Partner Institution
18	Alvin Asava Sasia	Male	Kenyatta University, Kenya	A study of Gelatin Nano-particles for novel application in leather processing	At KU	IMT Mines Albi, France
19	Damaris Mulwa	Female	Sokoine University of Agriculture, Tanzania	Intervention time series modelling of Rift Valley Fever in Kenya	At SUA	ILRI, Kenya
20	Hellen Ngunya Mutua	Female	University of Nairobi, Kenya	Synthesized activated Carbon/Boron Nitride electrode with promising specific capacitance based on Potassium Ferrocyanine (K <sub>4</sub> (Fe(CN) <sub>6</sub> ) and Potassium Bromide (KBr) Redox additives electrolyte for supercapacitor application	At UoN	University of Pretoria (UP), South Africa
21	Judith Chebwogen	Female	University of Nairobi, Kenya	Performance evaluation of Zinc Oxide-Graphene Oxide Nanocomposite in photocatalytic waste water treatment	At UoN	UP, South Africa
22	Margdaline Ligavo	Female	University of Nairobi, Kenya	Enhancing the stability and efficiency of tin-based perovskite solar cells by use of additives	At UoN	UP, South Africa



# Kenyan Rsif PhD students in cohort 4

No	Name	Gender	Rsif African Host University (AHU)	Research Topic	Status	International Partner Institution
23	Faith Mawia Muema	Female	Institut International d'Ingénierie de l'Eau et de l'Environnement (2iE), Burkina Faso	Pyrolysis of biomass waste to produce biochar for soil amendment and carbon sequestration	At 2iE	To be confirmed
24	Emmaculate Akinyi Ogutu	Female	Makerere University (MUK), Uganda	Development of novel strategies for stripe rust ( <i>Puccinia striiformis</i> f.sp. <i>hordei</i> ) resistance and heat stress tolerance in genetically diverse panel of barley ( <i>Hordeum vulgare</i> ssp. <i>vulgare</i> ) germplasm	At MUK	To be confirmed
25	Lynet Allan	Female	University of Nairobi, Kenya	Structural, Electronic and Optical Studies of Doped Magnéli Phase Titanium Oxides ( $TiO_{2n-1}$ , $N=3,4$ ), for Photovoltaic Applications	At UoN	To be confirmed

# Benefits to Kenyan Institutions



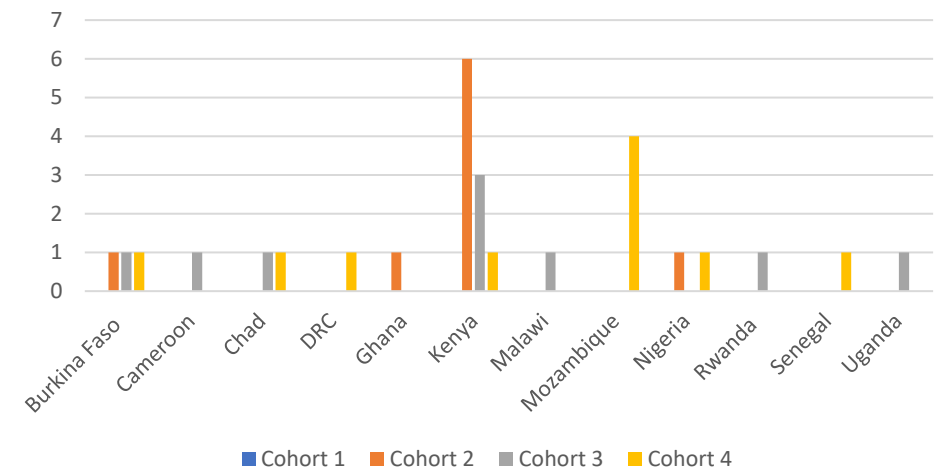
# Benefits to University of Nairobi an Rsif African Host University since 2019

## PhD programme in Physics

- Hosting 28 Rsif PhD scholars (10 Kenyans and 18 international students) (39% women)
- 12 African nationalities (Burkina Faso, Cameroon, Chad, DRC, Ghana, Kenya, Malawi, Mozambique, Nigeria, Rwanda, Senegal, Uganda)
- 9 journal publications
- Majority faculty returning to home institutions upon graduation
- Ranked 3<sup>rd</sup> best department at UoN in 2022.



Rsif PhD students at UoN, Kenya



# Rsif PhD students at UoN (cohort 2) - on international placement

No	Name	Nationality	Gender	Research Topic	Status	International Partner Institution
1	Sami Florent Palm	Burkina Faso	Male	Techno-economic impact of photovoltaic solar power plants connected to the electricity network under Sahelian climate: the case of Burkina Faso	At UM6P, Morocco 1 publication	University Mohammed VI Polytechnic (UM6P), Morocco
2	Martin Ansong	Ghana	Male	Energy management system for a photovoltaic powered brackish water desalination system Integrated with Lithium-ion Batteries and Supercapacitors	At KIT, Germany	Karlsruhe Institute of Technology (KIT), Germany
3	Alice Achieng Kasera	Kenya	Female	Rooftop turbulence analysis for site specific wind turbine installation: An experimental analysis in Nairobi County-Kenya	At UoN	Virginia Tech, USA
4	Jacinta Okwako	Kenya	Female	Fabrication of self-powered photoelectrochromic device for smart window application	At KIER, Korea	Korea Institute of Energy Research (KIER), Korea
5	Kay Nyaboe Nyakundi	Kenya	Female	Geothermal energy system integration - optimization of combined flash and binary power plants for high enthalpy resources / Economic use of geothermal brine	At KIT, Germany	Karlsruhe Institute of Technology (KIT)
6	Mwende Mbilo	Kenya	Female	Design of efficient and stable non-fullerene acceptor-based organic solar cells by buffer layer modification	At KRICT, Korea 6 publications	Korea Research Institute of Chemical Technology (KRICT), Korea
7	Fredrick Mwange Mulei	Kenya	Male	Self-cleaning nanostructured protective glass for photovoltaic solar panel	At KIT, Germany	Karlsruhe Institute of Technology (KIT)
8	Jorim Okoth Obila	Kenya	Male	Stability and efficiency improvement of planar 3D/2D tin-based-perovskite solar cells	At KRICT, Korea 2 publications	KRICT, Korea
9	Fabian Chidubem Eze	Nigeria	Male	Modelling and Simulation of Solar-assisted Dual Source Heat Pump System for Space Heating and Cooling / Calibrated Modes of Ground Thermal Energy Storage System for Space Heating and Cooling	At KIER, Korea	KIER, Korea



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## Video – Meet Jacinta Okwako

RSIF PhD student at University of Nairobi, Kenya with international research placement at Korea Institute of Energy Research Korea

Video link: <https://www.youtube.com/watch?v=9Wb3quGsc>



## Video - Meet Kay Nayakundi

RSIF PhD student at University of Nairobi, Kenya with international research placement at Karlsruhe Institute of Technology, Germany

Video link: <https://www.youtube.com/watch?v=F9cx75rjrI0>



# Rsif PhD students at UoN (cohort 3) - At university doing field research

No	Name	Nationality	Gender	Research Topic	Status	International Partner Institution
10	Aboubacar Savadogo	Burkina Faso	Male	Study of a solar cell with a radial n + / p junction of a polycrystalline silicon semiconductor in a static regime under monochromatic illumination: determination of the recombination parameters	At UoN	Karlsruhe Institute of Technology (KIT), Germany
11	Christelle Arielle Mbouteu Megaptche	Cameroon	Female	The Development of an Energy Management System for Optimal Sizing of a Hybrid Micro-Grid with an Energy Storage System	At UoN	KIER, Korea
12	Mahamat Adoum Abdoulaye	Chad	Male	Development of an innovative sector coupling integrating renewable energy	At KIER	KIER, Korea
13	Hellen Ngunya Mutua	Kenya	Female	Synthesized activated Carbon/Boron Nitride electrode with promising specific capacitance based on Potassium Ferrocyanine (K <sub>4</sub> (Fe(CN) <sub>6</sub> ) and Potassium Bromide (KBr) Redox additives electrolyte for supercapacitor application	At UoN	University of Pretoria (UP), South Africa
14	Judith Chebwogen	Kenya	Female	Performance evaluation of Zinc Oxide-Graphene Oxide Nanocomposite in photocatalytic waste water treatment	At UoN	UP, South Africa
15	Margdaline Ligavo	Kenya	Female	Enhancing the stability and efficiency of tin-based perovskite solar cells by use of additives	At UoN	UP, South Africa
16	Duncan Nkolokosa	Malawi	Male	Development of battery powered turbines as a source of clean energy	At UoN	UFES, Brazil (TBC)
17	Jean D'Amour Mwongereza	Rwanda	Male	The optimal selection of biomass materials for bioenergy production Case Study Rwanda	At UoN	KIER, Korea
18	Alex Sembito	Uganda	Male	Improving the efficiency and stability of inverted Tin-based halide perovskite solar cells using additives and functional group modification of electron transport layer	At UoN.	UP, South Africa



# Rsif PhD students at UoN (cohort 4) - Beginning their studies – Matching with international partner institutions in progress

No	Name	Nationality	Gender	Research Topic	Status	International Partner Institution
19	Bourahima Savadogo	Burkina Faso	Male	Modeling, Simulation and characterization of photovoltaic devices based on Cu <sub>2</sub> ZnSnSe <sub>4</sub> (CZTS).	At UoN	To be confirmed
20	Wakiang Emile Latchiba	Chad	Male	Analysis and modeling of renewable energy systems in a sustainable development scenario: case of Chad	At UoN	To be confirmed
21	Kasereka Ndwali	DRC	Male	Optimal energy management of microgrids peer to peer distributed energy trading using game theoretic approach considering demand response programs for residential sector	At UoN	To be confirmed
22	Lynet Allan	Kenya	Female	Structural, Electronic and Optical Studies of Doped Magnéli Phase Titanium Oxides (Ti <sub>n</sub> O <sub>2n-1</sub> , N=3,4), for Photovoltaic Applications	At UoN	To be confirmed
23	André Silvestre Cuinica	Mozambique	Male	Study of wind energy potential in Baixa de Chicumbane in Gaza - Mozambique	At UoN	To be confirmed
24	Muhammed Omeiza Abdulmalik	Nigeria	Male	Electrical And Optical Characterization Of Betalain With Polypyrrole (Ppy) Thin Films On Indium Tin Oxide (Ito) As P-N Heterojunction Solar Cell	Reporting to AHU	To be confirmed
25	Doglasse Ernesto Mendonca	Mozambique	Male	Modeling and Sizing of brackish water desalination plants powered by photovoltaic solar energy – Case study Distrito de Boane.	At UoN	To be confirmed
26	Fauzia Argentina Guibunda	Mozambique	Female	Design and Simulation Performance Assessment of Solar Tunnel Drier for Biomass Fuel Briquettes in Mozambique	Reporting to AHU	To be confirmed
27	Julieta Arnaldo Muchuane	Mozambique	Female	Perspective of increase in energy generation produced through mini hydroelectric plants in Nampula province	Reporting to AHU	To be confirmed
28	Thiar Diop	Senegal	Male	Contribution on the study of the electrical and optical parameters of a solar cell under different operating regimes: effects of anti-reflective layers	Reporting to AHU	To be confirmed

# Strengthening Research Networks for the University of Nairobi

International Partner Institutions (IPIs) signed agreements for exchanging staff and students with University of Nairobi:

1. University Mohammed VI Polytechnic (UM6P), Morocco
2. Karlsruhe Institute of Technology (KIT), Germany
3. Korea Institute of Energy Research (KIER), Korea
4. Korea Research Institute of Chemical Technology (KRICT), Korea
5. University of Pretoria (UP), South Africa
6. Virginia Tech College of Agriculture and Life Sciences (CALs), USA

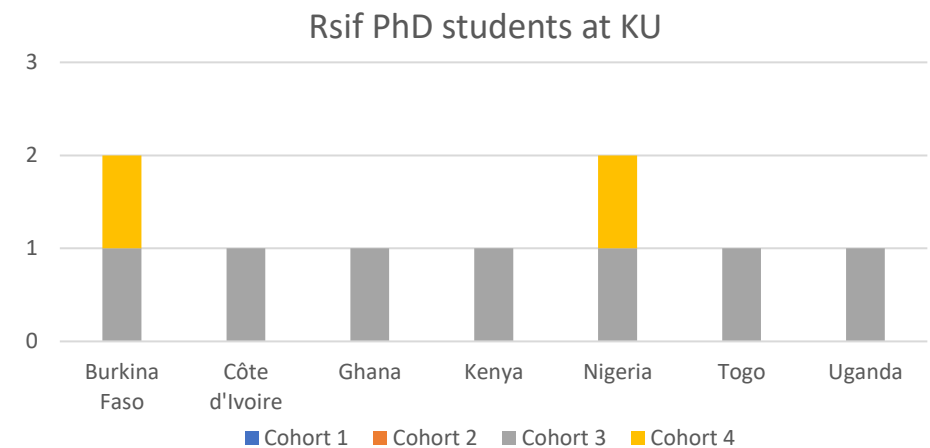
*icipe* supported two proposal writing meetings for teams from Kenya prepare competitive proposals to the EC funding opportunities





# Benefits to Kenyatta University – an Rsif African host university since 2020

- **PhD programme in Material Science,** Physics department, School of Pure and Applied Science
- Hosting 9 Rsif funded PhD scholars
- 1 Kenyan and 8 international students
- 22% women
- from 7 nationalities: Burkina Faso, Côte d'Ivoire, Ghana, Kenya, Nigeria, Togo and Uganda
- Seven cohort 3 students and two cohort 4 students.



# Rsif PhD students at KU (cohort 3)

No	Name	Nationality	Gender	Research topic	Status	International Partner Institution
1	Alassane Compaore	Burkina Faso	Male	Formulation and Characterization of Lightweight Concrete using Foam and Mineral Raw Materials from Burkina Faso	In the field for data collection	Worcester Polytechnic Institute (WPI), USA
2	Kicoun Jean-Yves N'Zi Touré	Côte d'Ivoire	Male	Valorization of coffee parchments : Elaboration and performance properties of green composites	In the field for data collection	WPI, USA
3	Afia Owusuah Akyaw	Ghana	Female	Analysis of Thermal and Chemical Stability Of CsPbI <sub>3</sub> Perovskite Photovoltaic Material Synthesized under Different Conditions	In the field for data collection	Discussions in progress with KIST, Korea
4	Alvin Asava Sasia	Kenya	Male	A study of Gelatin Nano-particles for novel application in leather processing	At KU	IMT-Mines Albi, France
5	Adetomilola Fafure Victoria	Nigeria	Female	Development of biomass-derived silicon-carbon composite anodes for electrochemical energy storage applications	At KU	KIST, Korea (TBC)
6	Maklewa Agoundedemba	Togo	Male	Improving The Performance Of FTO/TiO <sub>2</sub> /In <sub>2</sub> S <sub>3</sub> /CuInS <sub>2</sub> Photovoltaic Solar Cell By Introducing ZnO Thin Layer	At KU	Korea Institute of Energy Research (KIER), Korea
7	Edward Bwayo	Uganda	Male	Design and opto-electric properties characherisation of Al <sub>2</sub> O <sub>3</sub> /Zns Antireflection Nanostructures For Solar Cell applications	At KU	KIST, Korea (TBC)

# Rsif PhD students at KU (cohort 4)

No	Name	Nationality	Gender	Research topic	Status	International Partner Institution
8	Brice Alain KABORE	Burkina Faso	Male	Development of electroanalytical methods for the determination of organic and inorganic pollutants in environmental matrices / Implementation of local and/or synthetic materials for the elimination of organic and inorganic pollutants in environmental matrices	At KU	To be confirmed
9	Victor Mshi Igba	Nigeria	Male	Synthesis and characterization of metal oxide-based photoelectrodes as photoanodes for enhanced photoelectrochemical water splitting	Reporting to AHU	To be confirmed

# Strengthening Research Networks for KU

International Partner Institutions (IPIs) agreements for exchanging staff and students with Kenyatta University

1. Worcester Polytechnic Institute (WPI), USA
2. Korea Institute of Energy Research (KIER), Korea
3. IMT Mines Albi, France
4. Korea Institute of Science and Technology, Korea



*icipe* supported two proposal writing meetings for teams from Kenya prepare competitive proposals to the EC funding opportunities

# Strengthening Research and Innovation Capacity at UoN



- **High quality research on key developmental issues**  
(3 *Research* Grants awarded to faculty)

## Examples:



- Research and Development of Photovoltaics based on Lead-Free Perovskite Solar Cell Technology
- Self-Cleaning Solar Module for Enhanced Electrical Output
- Deep Learning Approaches to Mineral Prospect Modelling of Rare Earths in Carbonatites



- **Enhanced innovation ecosystem within the university** (1 *Institutional Innovation Capacity Building (ICBP) Grant*)

- Capacity Building for University-Industry Business Technology Transfer



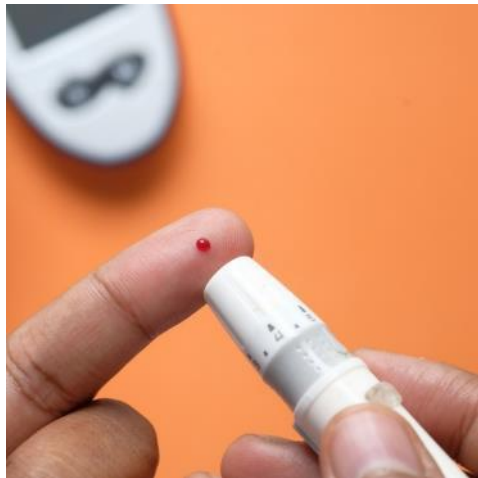
# Strengthening Research and Innovation Capacity at Kenyatta University



- **High quality research on key developmental issues ( 1 *Research* Grant awarded to faculty)**

Examples:

- Enhancing Biodegradable Sanitary Towel Production through Utilization of Seaweed and Banana Pseudo stem Residues: A Value Addition Strategy



- **Increased opportunities to translate research outputs into commercial products ( 1 innovation commercialization grant awarded to faculty)**

- An Integrated Near Infra-Red and Magnetic Field System for Non-Invasive Monitoring of body Glucose and Na<sup>+</sup>/K<sup>+</sup> Concentration anomalies: for Diabetes/Cancer Diagnosis

# Multiple benefits to Kenya's research and innovation ecosystem

1. RSIF graduates, with strong research networks, able to “win” additional research awards.
2. Reduced “inbreeding” at Kenyan universities
3. UoN and KU received video conference equipment, library resources and benefit from various trainings e.g.
  1. Over ten staff trained in proposal writing training workshops
  2. Arranged exchange visits for UoN and KU staff to Morocco and Japan
4. New institutional research and training networks
5. Graduates equipped with advanced technologies, cross cutting and technical skills and relevant international, regional and national networks
6. 32 journal publications from Kenyan RSIF students to date in high impact journals
7. Research outputs and knowledge generated in line with national priorities: e.g. solar energy, etc.

# 32 publications by Kenyan students

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- 18 of the publications (56%) are by the five Kenyan nationals in cohort 1.
- The publications are expected to increase significantly as Cohort 2, 3 & 4 students progress.
- High-impact peer reviewed journals

Example:

Dr. Richard Koech: Effects of polyethylene oxide particles on the photo-physical properties and stability of FA-rich perovskite solar cells, <https://www.nature.com/articles/s41598-022-15923-y>

Koech, R. K., Olanrewaju, Y. A., Ichwani, R., Kigozi, M., Oyewole, D. O., Oyelade, O. V., Sanni, D. M., Adeniji, S. A., Colin-Ulloa, E., Titova, L. V., Martin, J. L., Grimm, R. L., Bello, A., Oyewole, O. K., Ntsoenzok, E., & Soboyejo, W. O. (2022). Effects of polyethylene oxide particles on the photo-physical properties and stability of FA-rich perovskite solar cells. *Scientific Reports*, 12(1), 12860. <https://doi.org/10.1038/s41598-022-15923-y>

-> Scientific Reports is the 5th most-cited journal in the world. Scientific Reports is led by the same ethical and editorial policy guidelines as other Nature Research journals to ensure that all the research we publish is scientifically robust, original, and of the highest quality.

# Emerging impact – set to “snowball”...

## First Rsif graduate to return home

**Dr. Richard KOECH**, Kenya, Rsif Cohort 1 Alumnus

Lecturer of Physics, Department of Mathematics, Physics & Computing, Moi University, Eldoret, Kenya

Research area: Solar cells

12 journal publications in period **(no.1 of RSIF PhD scholars)**

- Graduated from African University of Science and Technology (AUST), Nigeria
- Placement at Worcester Polytechnic Institute, Boston, USA
- Founding member RSIF Alumni network
- Speaker at RSIF Conference 2022 in Morocco
- Training the next generation of science leaders
- Solving critical problems.



# Thank You

Regional Coordination Unit (RCU)

International Centre of Insect Physiology and Ecology (icipe)

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