

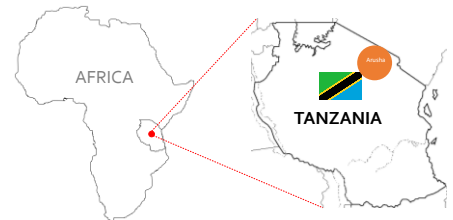
The Nelson Mandela African Institution of Science and Technology (NM-AIST) – Arusha – Tanzania

Mwemezi J Rwiza

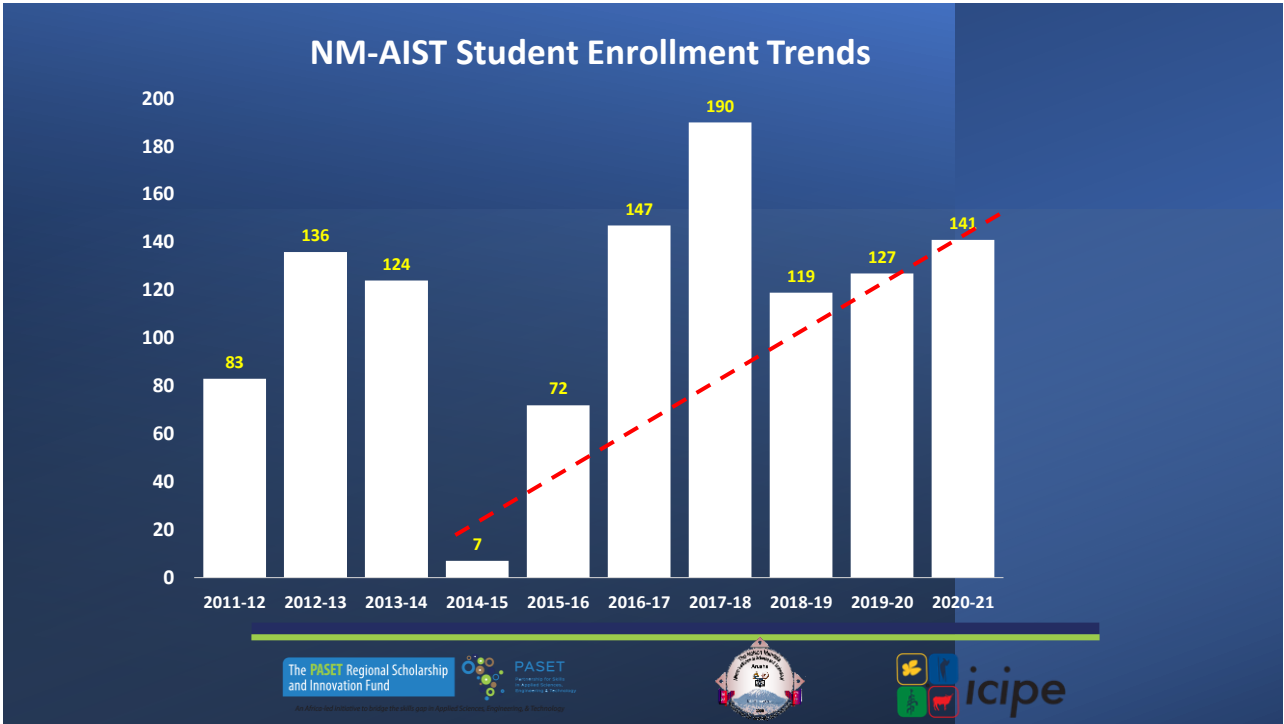
1

The Nelson Mandela African Institution of Science and Technology (NM-AIST) – Arusha – Tanzania

- Born: **2009**
- First academic year: **2011/12**
- No. of schools: **4**
- ***Graduate-only***



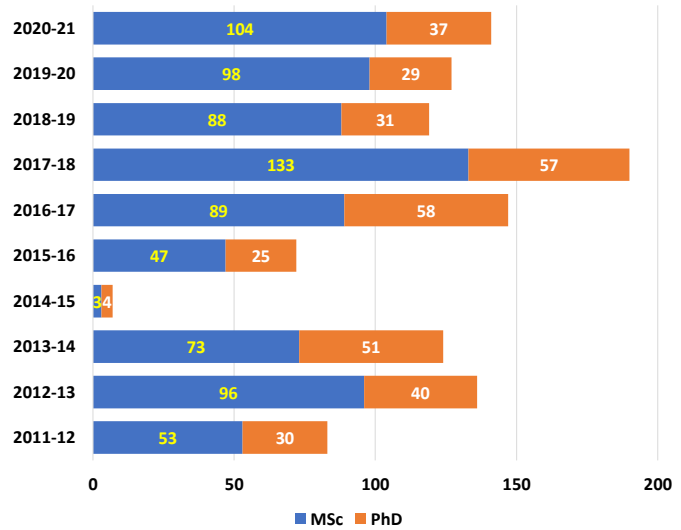
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3

Enrollment by programme:

- About 400 graduate students
- A research-intensive university in SETI



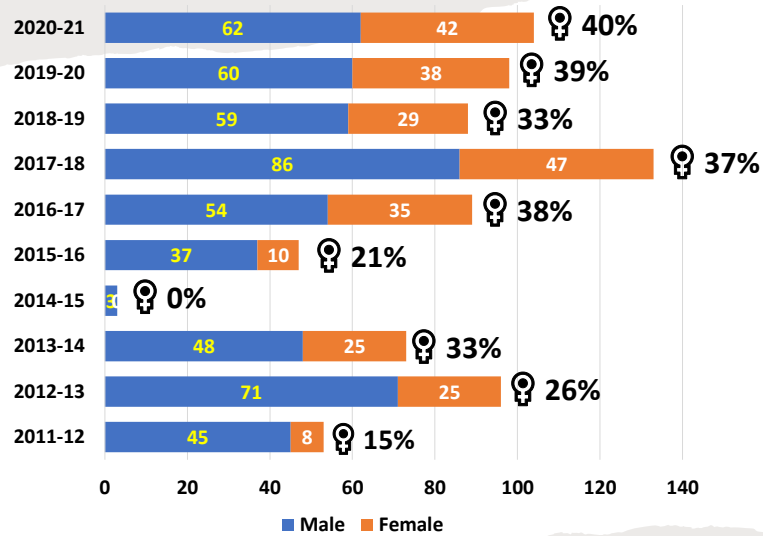
The **PASET** Regional Scholarship and Innovation Fund

PASET
Partnership for Applied Sciences, Engineering & Technology



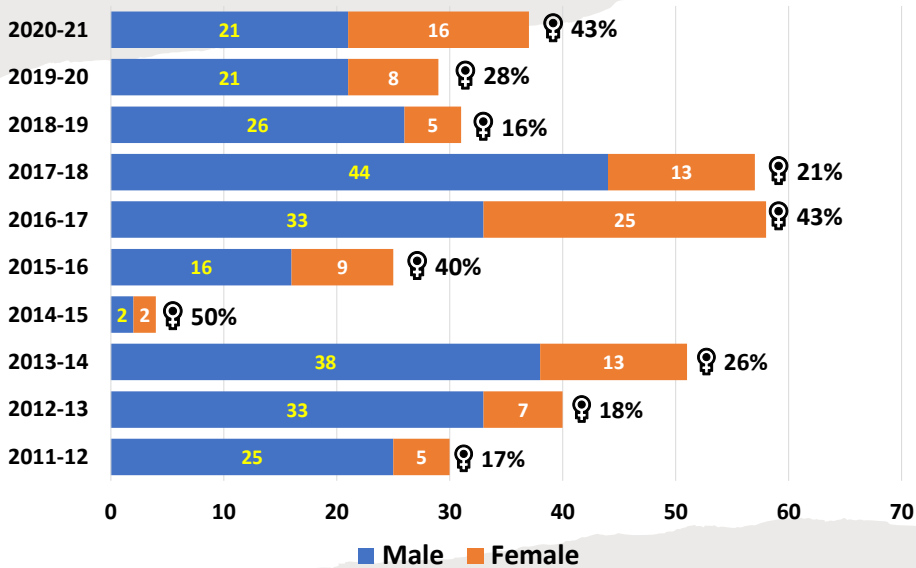
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Enrollment by gender – Master’s



5

Enrollment by gender – PhD



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The PASET Regional Scholarship and Innovation Fund

An Africa-led initiative to bridge the skills gap in Applied Sciences, Engineering, & Technology



PASET

Partnership for Skills in Applied Sciences, Engineering & Technology







International scholars

- Burkina Faso
- Rwanda
- Kenya
- Uganda
- Germany
- Italy
- Zambia
- Malawi
- Ethiopia
- Cameroon
- Tanzania (mainly)
- Nigeria
- Burundi
- Mozambique
- South Sudan
- Canada
- Congo Brazzaville

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The PASET Regional Scholarship and Innovation Fund

An Africa-led initiative to bridge the skills gap in Applied Sciences, Engineering, & Technology



PASET

Partnership for Skills in Applied Sciences, Engineering & Technology





Four schools

- School of **Materials, Energy, Water and Environmental Sciences (MEWES)**.
- Life Sciences and Bioengineering (**LISBE**).
- Computational and Communication Sciences and Engineering (**CoCSE**).
- Business Studies and Humanities (**BuSH**).

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Four schools

MEWES

- **Materials Science and Engineering (MaSE).**
- Materials and Energy Science and Engineering (MESE).
- Sustainable Energy Science and Engineering (SESE).
- Water and Environmental Science and Engineering (WESE).

LiSBE

- Global Health and Bio-Medical Sciences (GHBM).
- Sustainable Agriculture and Biodiversity Conservation (SABC).
- Food Biotechnology and Nutritional Sciences (FBNS).
- Bio-Engineering (BioE).

CoCSE

- Applied Mathematics and Computational Sciences (AMCS).
- Information Technology Development and Management (ITDM).
- Communication Science and Engineering (CoSE)

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MaSE @NM-AIST

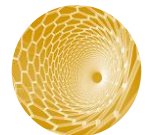
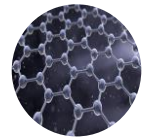
Energy materials

- ✓ Energy storage materials from biomass.
- ✓ Biomass gasification.
- ✓ Hydro turbine design.
- ✓ Wind turbine design.
- ✓ Energy management.
- ✓ Solar PV.
- ✓ Biogas production.
- ✓ Biodiesel production.

Water and sanitation materials

- ✓ Urban sanitation mapping and planning.
- ✓ Desalination: capacitive deionization and reverse osmosis.
- ✓ Defluoridation.
- ✓ Wastewater treatment
- ✓ Constructed wetlands.
- ✓ Decentralized wastewater treatment and resource recovery.

Nano-materials



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The **PASET** Regional Scholarship and Innovation Fund



Some research outputs/outcomes

- Defluoridation of water supplies using coconut shells activated carbon: batch studies
- Influence of macrophyte types towards agrochemical phytoremediation in a tropical environment
- The potential of using indigenous pesticidal plants for insect pest control to small scale farmers in Africa
- Factors influencing solid waste generation and composition in urban areas of Tanzania: The case of Dar-es-Salaam
- The toxicity, persistence and mode of actions of selected botanical pesticides in Africa against insect pests in common beans, *P. vulgaris*: a review

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The **PASET** Regional Scholarship and Innovation Fund



Some research outputs/outcomes

- Water hardness removal by coconut shell activated carbon
- Natural dyes for solar cell application: UV-Visible spectra and outdoor photovoltaic performance
- Removal of lead ions from water by capacitive deionization electrode materials derived from chicken feathers
- Energy Recovery from Municipal Solid Waste
- Operating Conditions of A Locally Made Fixed-Bed Incinerator, a Case Study of Bagamoyo–Tanzania

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Some research outputs/outcomes

- Design of an automated river water level monitoring system by using Global System for mobile communications
- Column design for groundwater hardness removal using cashew nut shells activated carbon with potential application in low-income communities

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Thank you

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