EASTERN & SOUTHERN AFRICA HIGHER EDUCATION CENTERS OF EXCELLENCE (ACEII)

WISE - Futures
Centre for Water Infrastructure and Sustainable Energy Futures
NM-AIST, Arusha Tanzania

1) Dr. Hans C. Komakech, Centre Leader
2) Dr. Yusufu Abeid Chande Jande Deputy Centre Leader
3) Prof. Charles V. Lugomela, NM-AIST Deputy Vice Chancellor PFA
VISION

• To achieve excellence in teaching, learning, research, and outreach in water, sanitation, and energy.

MISSION

• Provide excellent learning environment for graduates to specialize in water and energy related fields.
• Provide stimulating environment for early career researchers solving pressing development problems
• Strengthen regional and international research collaboration in order to promote the development of cutting edge solutions to the key development challenges
Research Areas

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

WISE-Futures PhD student right front), in Korea Maritime and Ocean University (South Korea) for four months exchange visit on cross-flow hydro turbine design
Research Areas (…)

Water and Sanitation

✓ Urban sanitation mapping and planning
✓ Desalination: capacitive deionization and reverse osmosis
✓ Defluoridation
✓ Waste water treatment; constructed wetlands
✓ Decentralized waste water treatment and resource recovery

Credit: Babati Sanitation Research Team (2016-2018)
Research Areas (...)

Water Resources and agriculture
✓ Hydrology and climate studies
✓ Water and ecosystem services
✓ Ground water quality and flow system analysis
✓ Land use change and agricultural practice on ground water recharge and quality
✓ Water Productivity and irrigation development.
Partners Collaboration Activities

• Collaboration with Shinshu University
  • Research partnership
  • Student co-supervision
  • Focus: hydrology and water resources flow systems study, water treatment and purification (fluoride removal)
Innovation

- Commercialization of research,
- Startups,
- Joint venture with the company
Interested Collaboration Area

- Energy storage systems development for solar and wind energy
- Solar PV design and production
- Turbine design and production for wind and hydro
- Water resources management
- Sanitation, i.e., waste water treatment and re-use, user interfaces design, etc.
- Water purification technologies.
Thank You