

DST-World Bank Cooperation on Strengthening of ACEs

Africa Centre of Excellence in Materials, Product Development & Nanotechnology (MAPRONANO)

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Prof/Center Leader

ACE II

Eastern and Southern Africa
Higher Education Centers of Excellence Project



Brief Description of Center

- The Center was developed out of the need to strengthen research and training in the areas of materials science and engineering, nanotechnology and nanomedicine in order to develop human resource capacity in applied science engineering disciplines for the development of the region.
- The ACE is based at the College of Engineering, Design, Art and Technology (CEDAT), Makerere University – Kampala.
- The Nanomedicine Program is implemented in partnership with College of Health Sciences, MakCHS.

Key Objectives

- To increase capacity of research and training materials engineering and product development.
- To enhance teaching and training in Nanotechnology and Nanomedicine.
- To promote linkage among academics, industry practitioners and policy makers.
- To promote research spins offs for industrial development.
- Enabling mobility of researchers

Primary Thematic Disciplines

The areas of research and training focus on:

a) Materials Science and Engineering.

- Harnessing locally available natural resources into products for sustainable development.
- Materials in Energy Applications – conversion of biomass into productive biogas, Imaging techniques, water filtration and treatment

b) Product Development

- Incremental Innovations and Technology Transfer
- Research Spin-offs for Industry development

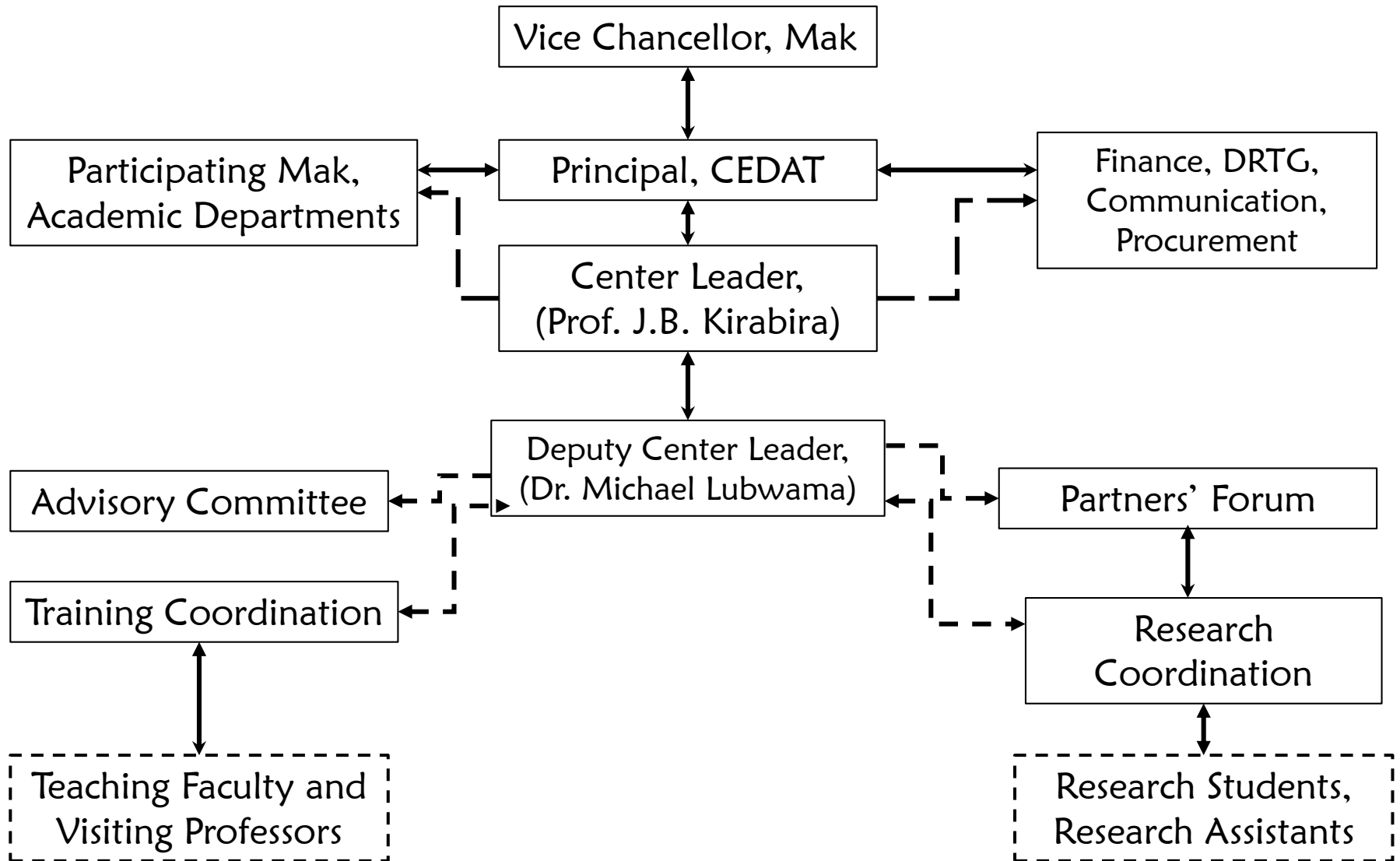
c) Nanotechnology and Nanomedicine.

- An ongoing PhD is developing a G-resonance technique as a contribution to fight HIV using engineering and physics classical mechanics...
- Nano-coatings, water treatment, fuel cells,
- Nanomedicine focus on diagnosis and medicine delivery

Key Outcomes

- State of the art research Laboratory for Materials, Nanotechnology and Nanomedicine in the Eastern and Southern Africa Region.
- Graduate professional scientists who can contribute to regional development through research and development.
- Accredited Programs (curricula) at national, regional and international levels.
- Well-trained technicians and engineers in Materials Science, Product design and Nano-enabled technologies
- Strengthen research and publication
- Strengthen teaching quality through Pedagogical training.

Center Operations and Management



Primary Collaborators

- MakCHS
- Roofings Limited
- Uganda Clays Limited
- Uganda Cancer Institute
- UNBS
- UIRI
- CIPLA Quality Chemicals Uganda Limited
- Geological Survey and Mines Department
- UVRI
- Luweero Industries
- Steel Rolling Mills

Regional Collaborators

- Rwanda: University of Rwanda (Engineering & Health Sciences)
- Kenya: University of Nairobi
- Tanzania: UDSM (CoET), NMIST (Wise Futures)
- Mozambique: University Eduardo Mondalene (Faculty of Engineering)
- Ethiopia: Addis Abbaba University, Mekelle, Center for Railway Engineering

International Collaborators

- Prof. Constantine Megaridis, UIC, USA
- Tel Aviv University, Israel
- Dr. Ineke Malsch, Netherlands
- Prof. Bria, University of Alabama, USA
- IITs in India (already have an idea)!!!
- Prof. Rajeev K. Gupta, University of Petroleum Studies (UPES), India... have been in touch

Acknowledgements