

Research Collaboration Marketplace

Applicants from Ghana and Tanzania searching for a Danish Partner, Call for Phase 1 applications 2017, research collaboration projects in Danida priority countries

Research Theme of Application	
Relevant research theme according to the country of applicant as defined in the Call: (http://dfcentre.com/research/calls-for-applications/)	Growth and Technological Innovations
Applicant Information and Contact Details	
Applicant name	Consalva Joseph Msigwa
Applicant qualification (degree) and position	PhD degree - Lecturer
Applicant e-mail address	msigwaj34@gmail.com
Applicant institution and country	Dar es Salaam Institute of Technology, Tanzania
Link to relevant website(s) (institution, CV, other)	www.dit.ac.tz
Project Proposal Information	
Proposed title for the project to be applied for	Modelling the Scalable Hybrid Renewable Electric Energy System for Rural Electrification: The case of Tanzania
Brief project description/project idea (10-15 lines)	<p>Current efforts to increase access to energy through decentralized electricity supply systems are not geared towards future sustainability, as they do not take into account requirements for income generation, future growth of demand or the need to link with the national grid. Designs are typically based on small household level demands, so the technical limitations already limit enterprises and other potentially larger users of electricity within rural areas, as well as households with energy demands that go beyond basic needs such as lighting and communication.</p> <p>The power output from RES such as wind, solar and run-of-the-river small scale hydropower systems is stochastic in nature. RES intermittence poses fluctuations in energy output which impacts power frequencies, voltages and component performance, which, if not accounted for in system design, can cause instability in the power generation system which results in interruption of services to customers.</p> <p>The main objective is to develop a model for Scalable Hybrid Renewable Electric Energy (SHREE) facility that can</p>

	<p>accommodate at least two different sources of electricity from RES which are in small scale and naturally stochastic into continuous and standard ac electric supply (400V/50Hz). Combining different renewable energy sources in hybrid systems could provide opportunities to increase the volume and the reliability of supply.</p>
<p>Brief description of the research competencies available on your team</p>	<p>1. Dr. Msigwa: power electronics: topology design, modeling, control, and analysis of ac/dc, dc/ac, ac/ac power converters for smart grid (active power filtering with var compensation capability) . Supervisor for PhD and Master students. Capable of working in a team.</p> <p>2. Prof.power electronics: topology design, modeling, control, and analysis of ac/dc, dc/ac, ac/ac power converters for adjustable speed drives, smart grid, nanogrid, and microgrid based on renewable energy resources. Supervisor for PhD and Msc students. Able to work in a team</p>
<p>Describe in max 10 keywords the research competencies you are searching for in a Danish partner</p>	<p>researcher basing in electric power generation using renewable energy sources.</p> <p>fostering team work, good Oral and written communication, attention to communication, capable of dealing with team members</p>