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NUST leads African universities in joining Global Land Tool Network

NUST signed a Partnership Charter to become the first African university to join the Global Land Tool Network (GLTN). The GLTN is a dynamic and multi-sectoral alliance of international partners committed to increasing access to land and tenure security for all, with a particular focus on the poor, women and youth.

Its partners include international rural and urban civil society organisations, research and training institutions, bilateral and multilateral organisations, and international professional bodies.

The GLTN, which supported its partners and multilateral donor organisations is hosted at the UN-Habitat, in Nairobi, Kenya.

While presenting the Charter to NUST, the Co-Chair of the International Training and Research Cluster of the GLTN, Prof Uchendu Chigbu, noted the importance for NUST to use its membership as a platform to engage and collaborate with partners in the sector, globally. Prof Chigbu recently joined NUST as an Associate Professor of Land Management.

In his acceptance speech, NUST Acting Vice-Chancellor, Dr Andrew Niikondo, expressed gratitude for the opportunity, emphasising that the University plans to expand its global footprint in land governance.

The GLTN consists of 80 partner organisations who work together to develop, disseminate and implement pro-poor and gender-responsive land tools. A land tool is a practical way to solve problems in land administration and management. It is a way to put principles, policies and legislation into effect.

Notable members of the GLTN include multilateral organisations such as the *World Bank, GIZ, UNEP, UNECA, FAO, Cities Alliance and Bill and Melinda Gates Foundation.*

NUST has been admitted into the International Training and Research Cluster, where it joins organisations such as the University of Twente / ITC (The Netherlands), the Technical University of Munich (Germany), Aalborg University (Denmark), RMIT University (Australia), and the University of East London, and 23 other research institutions.

NUST is one of the leading universities in the land management and land administration education within the African continent, through Network of Excellence on Land Governance in Africa (NELGA).

Its admission into the GLTN reflects its goal to become truly international and global player in higher education and research. The membership of NUST will be administered at the Department of Land and Property Sciences, in the Faculty of Natural Resources and Spatial Sciences.

Prof Uchendu Chigbu (left) and Dr Andrew Niikondo

Detecting veld fires with an innovative Mobile App

Project Team and Matatiele Local Municipality Officers

The Faculty of Computing and Informatics (FCI) joined hands with the University of Fort Hare, South Afica, in developing a groundbreaking integrated mobile application that detects, monitors and communicates veld fires.

The prototype uses satellite data obtained from the Advanced Fire Information System (AFIS) to detect and monitor fires in the study sites in Namibia and South Africa.

This novel work is being pioneered by Dr Edmore Chikohora, a Senior Informatics Lecturer at FCI and Prof Amon Taruvinga, an academic from University of Fort Hare.

The project is being piloted in Kavango East, Omaheke and Zambezi Regions of Namibia. These sites were selected based on the documented high frequency of veld fires.

To date, an inventory of the regions was created and geo-referenced to enhance region based burning fire identification. The identified regions were then linked to mobile phones of five personnel from City of Windhoek Fire Department (CoW-FD) for pilot testing.

In South Africa, the project is being piloted in Matatiele Local Municipality based on high frequency of veld fires during the past ten years.

To date, an inventory of the municipal wards was created and geo-referenced to enhance ward based burning fire identification. These were then linked to mobile phones of veld fire stakeholders from Matatiele Local Municipality (Afred Nzo Fire Department and Matatiele Local Municipality).

When fully deployed, the mobile application system will alert communities of veld fires occurrences through their mobile phones as automated texts (SMS). This innovative project is jointly funded by the National Commission on Research Science and Technology (NCRST) in Namibia and National Research Foundation (NRF) in South Africa. The Council for Scientific and Industrial Research in South Africa has partnered with the two universities in providing satellite data through their AFIS system that used fire detection, monitoring and advising communities on fire danger indexes.

GIZ supports Biomass Analytical Laboratory

As part of the wider collaboration with NUST, on research and development for bush biomass in Namibia, the Bush Control and Biomass Utilisation Project implemented by GIZ and Ministry of Environment, Forestry and Tourism supported the development of laboratory capacities at the University.

In addition to this, the project procured equipment valued at N$1.3 million to capacitate the laboratory accordingly. The equipment items include a Kjeldahl Nitrogen Analyser for the determination of the nitrogen and protein content in bush samples, a Laboratory Furnace for routine preparation of samples as well as a Universal Testing Machine and a Plastics Identification Unit for applied research on Wood-Plastic Composites.

The laboratory equipment will allow NUST to conduct more in-depth research and training for students on bush-related topics and offer physical and chemical biomass analysis services to the public and the Namibian biomass industry at large. The equipment was handed over recently at the official launch of the laboratory services. The ceremony was addressed by Gerlinde Sauer, Counsellor for Development Cooperation at the Germany Embassy and Dr Andrew Niikondo, NUST Acting Vice-Chancellor.

For more information on the NUST Analytical Lab Services, visit: http://bush.nust.na/labservices

Delegates pictured during the laboratory tour

Over 700 graduate during November Virtual Ceremony

...with two obtaining doctoral qualifications

For the second time this year, the University held a Virtual Graduation Ceremony due to the ongoing COVID-19 restrictions. During the ceremony, over 700 candidates obtained various undergraduate and postgraduate qualifications.
Dr Peya Mushelenga, the Minister of Information, Communication and Technology, was the guest speaker. "Focus is a principle essential to successful academic results. It should remain in the mind of every student, both under- and post-graduates alike that the singleness of a purpose is a key to defeat distractions and avoid swaying with watercourses flowing to deep oceans of salty waters that bring black-out to our beings. The motto should be: I have a sole purpose to study and pass. Failure is not an option," he said.

Name: Dr Onjefu Leonard Agbo
Qualification: Doctor of Philosophy in Structural Engineering
Faculty: Engineering

My key area of research focus is Energy Efficiency Building design from appropriate material choice and design. One such appropriate kinds of research involve developing appropriate material technologies that will improve energy efficiency in the form of using agricultural residues/wastes readily available in Namibia. Insulating materials used in buildings in Namibia and most developing countries are imported hence very expensive and inaccessible to many due to their income levels.
Thus there is a need to develop new and affordable techniques of producing insulating materials that ensure high building performance in terms of energy efficiency i.e. using less or no externally driven energy to ensure ambient indoor temperature regardless of fluctuating outdoor temperatures throughout a year. Affordability comes into play when materials that are locally and abundantly available are used to produce energy-efficient materials that replaced imported ones.
My research focused on the use of wastes from millet (Pennisetum glaucum) husks, rice hulls, maize husks, and cow dung to develop an environmentally friendly and energy-efficient /thermal insulation building materials for building construction in Namibia. Wide-ranging investigations including laboratory tests were performed and appropriate isolation material was produced. The physical, mechanical, and thermal properties of the developed material were compared with internationally accepted building isolation materials.

Name: Dr Munyaradzi Maravanyika
Qualification: Doctor of Philosophy in Informatics
Faculty: Computing and Informatics

My main area of research focus is digital transformation. In particular, I am interested in domain transformation. Currently the domain I am focusing on is education, with an interest in technologies for supporting learners at the bottom of the pyramid economically. Emerging technologies are changing traditional products and services. This is also true for education where teaching, learning and assessment are increasingly being offered through digital means.
The application of technologies such as artificial intelligence, machine learning, predictive analytics and extended reality, commonly referred to as smart technologies in education presents real opportunities for unlocking value in educational institutions.
Digital transformation also has the potential to address the digital inequalities that exist between those who have access to technologies and those students at the bottom of the pyramid who find themselves more and more marginalised due to lack of resources to fully participate in digital learning solutions.
However, institutions will need to adopt new models and frameworks if that are radically different from the current models if this potential is to be realised. My research is focusing on developing models and frameworks that can assist organisations in developing economies to also realise the potential of emerging technologies.

Enhancing knowledge of solar thermal systems

NUST's Namibia Energy Institute (NEI) conducted a two-day WEB based Train the Trainer course for plumbing and electrical Vocational Education Trainers.

The focus was on Thermosiphon Solar Water Heaters for small-scale residential systems in Namibia.
"The residential sector has seen a broad roll-out of programmes on small-scale solar water heating systems, which makes it very critical for the country to have more qualified developers and installers of these systems," said Helvi Ileka, Centre Head for Renewable Energy and Energy Efficiency and Acting Director at NEI.
The trainers were introduced to different types of thermosiphon solar water heaters with a focus on both theory and practice. Participants learned about designing, installation, quality controls, commissioning, quality checks, maintenance, monitoring of thermosiphon systems.
The participants had the chance to conduct practical work by designing systems using the gained knowledge and T*SOL software, which is a dynamic simulation programme in the field. After the simulation, the designer receives a comprehensive and appealing project report with all system data as well as detailed simulation and profitability results.
The training was held in October under the framework of the Southern African Solar Thermal Training and Demonstration Initiative (SOLTRAIN) Project Phase 4. It was conducted by Rudolf Moschik and Monika Spörk Dür, two experts from AEE-Institute for Sustainable Technologies (AEE-INTEC) together with local implementers of the project at NEI.
More than 10 participants from Vocational Training Centres, as well as well as NUST and University of Namibia students attended the training.
The participants were also given the opportunity to prepare and present feasibility studies on various case studies such as single family households, hotels, army bases, schools and hospitals.

"This is not your PhD, it is for Namibia"

Dr Colin Stanley has been a NUST employee for 14 years. He started off as a tutor in the Computer Science Department, then gradually worked his way up to Junior Lecturer, Lecturer, Associate Dean for Teaching and Learning, and now he is the Acting Dean for the Faculty of Computing and Informatics (FCI). Recently, he obtained a doctoral qualification in Computer Science from the University of Capetown (UCT). Dr Stanley answered few questions during an interview for the *The Tech*.

Q. How do you feel about obtaining your PhD?
A. I am super elated. I give tremendous gratitude to my supervisors Prof Blake (UCT Emeritus Professor), Prof Winschiers-Theophilus (NUST) and Mr Uariaike Mbinge (OvaHimba lead community co-designer). One of my good friends said, "This is not your PhD, it is for Namibia. For her and her people" (Muashekele, 2020).
Q. What are your research interests and why?
A. Co-designing crowdsourcing software solutions with indigenous communities to empower the communities to appropriate mainstream software solutions from their context of meaning-making and continuation of independent use.
Q. Where would you want to see the Faculty in ten years?
A. Firstly, in the very near future, I would like to see the roll out of much-needed degrees for the 4IR and beyond, such as a multidisciplinary Master Degree in Data Science, Artificial Intelligence, Human-to-Computer Interaction (HCI) with meaningful Human-to-Human interactions, and Machine Learning.
Departing with the above-stated trajectory, within ten years, I see FCI making a considerable contribution to Namibia by providing a technological enhancement in co-creating technologies with national and global communities for the wellbeing of their livelihood.
I envisage the Faculty nourishing the agriculture, tourism, TechHub start-up companies, smart city research with the City of Windhoek and many more. I further foresee the expansion of the India-Namibia Centre of Excellence in Information Technology (CEIT) hosted at FCI in its mandate of training computer scientists in Cyber Network Security, and Big Data Analytics.
Last, but certainly not least, I see an increase in our e-Governance/Industry research partnership in High-Performance Computing (HPC).

Dr Colin Stanley