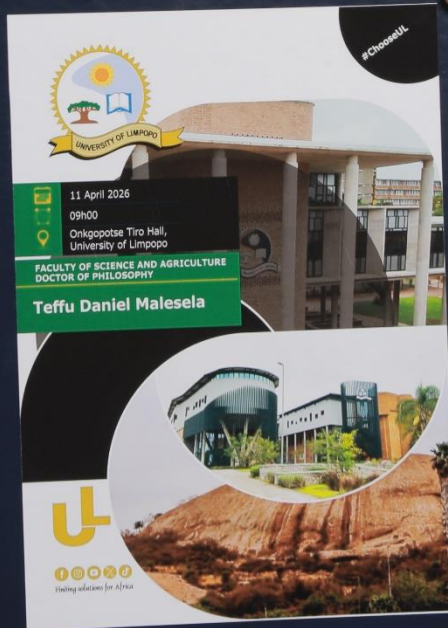
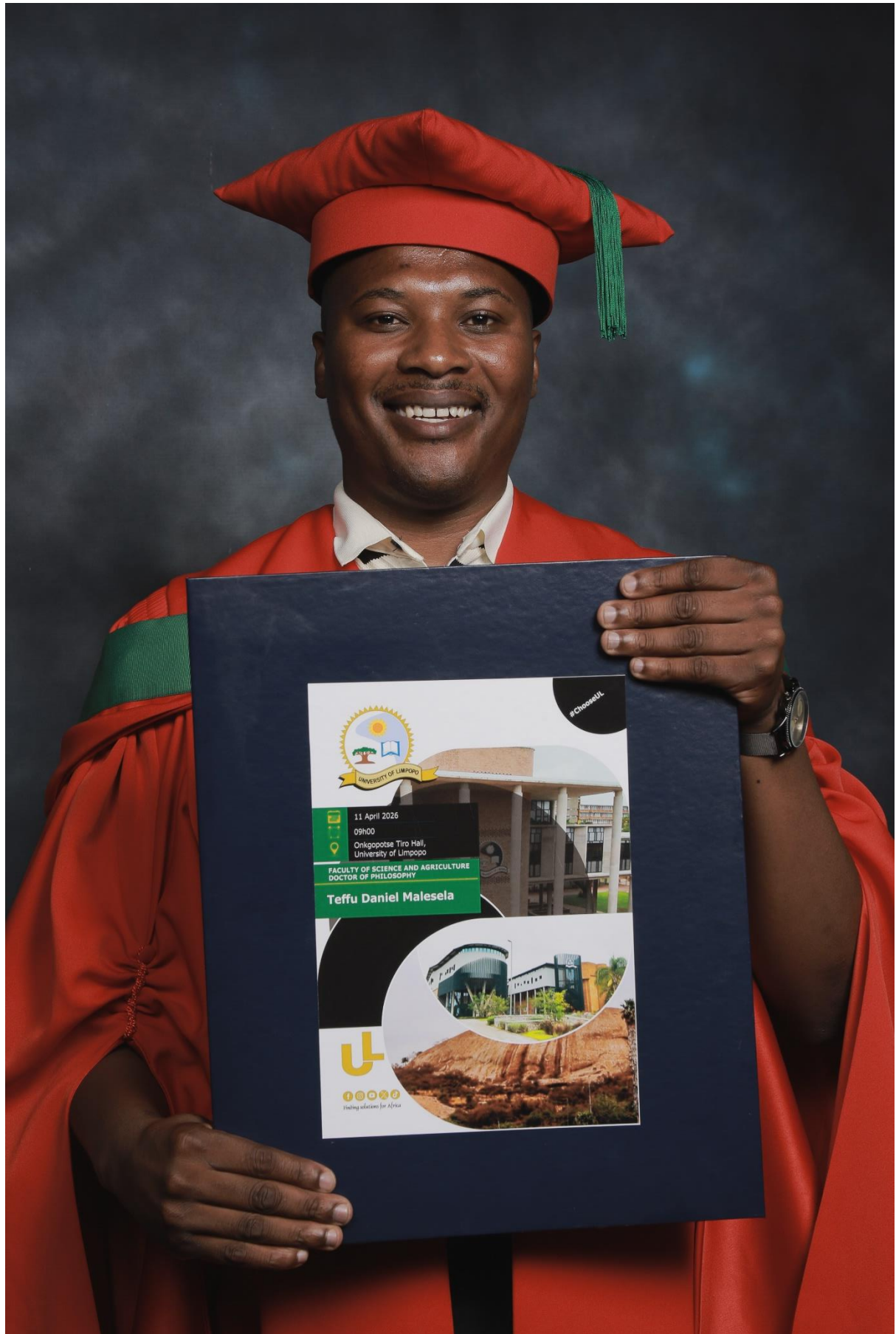




11 April 2026
09h00
Onkgopotse Tiro Hall,
University of Limpopo

FACULTY OF SCIENCE AND AGRICULTURE
DOCTOR OF PHILOSOPHY

Teffu Daniel Malesela



finding solutions for Africa

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CITATION

Teffu Daniel Malesela investigated advanced nanomaterials for supercapacitor applications. He prepared palladium loaded (metal and covalent) organic frameworks decorated with polyaniline and nitrogen-doped reduced graphene oxide nanocomposites and evaluated their power and energy density properties. The quaternary nanocomposite Pd@COF-PANI/NrGO achieved the highest performance, producing 14.7 Wh/kg at 400 W/kg in a two-electrode configuration, demonstrating its potential as a next-generation electrode material, advancing the design of multifunctional hybrid nanostructures for high-performance energy storage systems. The work has resulted in three high-impact publications (Coordination Chemistry Review (IF=23.5); Journal of Energy Storage (IF=9.8); and Nanoscale Advances (IF=4.7)) and presentations at multiple conferences.