



Showcasing work from the African Centre of Excellence in Future Energies and Electrochemical Systems at the Federal University of Technology Owerri, Nigeria. The project is led by Professor Emeka E. Oguzie, with Dr. Elias E. Elemike (Federal University of Petroleum Resources, Nigeria) and Dr. Christian O. Dimkpa (Connecticut Agricultural Experiment Station, USA) as collaborators.

Morphological and chemical profiling of biochar derived from invasive aquatic weed towards bio-nanofertilizer development

This study explores the structural and chemical characteristics of biochar produced from water hyacinth, an invasive aquatic weed. Advanced analyses reveal the biochar's porous architecture, surface properties, and elemental makeup, assessing its viability as a sustainable precursor for bio-nanofertilizers, aligned with the International Biochar Initiative's framework. The findings pave the way for transforming an ecological nuisance into high-value agro-materials, driving eco-smart fertilizer innovation in sustainable agriculture.

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### As featured in:



See Christian O. Dimkpa, Emeka Emmanuel Oguzie *et al.*, *RSC Sustainability*, 2025, **3**, 3947.