



FEDERAL UNIVERSITY OF
TECHNOLOGY OWERRI

2026

Commissioning ACE-FUELS ElectroLab X

A Strategic Platform for Energy Innovation and Industrial Transformation



FUTO

INNOVATE.
TRANSFORM.
SUSTAIN.

April 2026 | Federal University of Technology Owerri.



ACE | FUELS

Africa Centre of Excellence in Future
Energies & Electrochemical Systems

ElectroLab X

Commissioning

A Strategic Platform for Energy Innovation and Industrial Transformation

APRIL 25, 2026

Federal University of Technology Owerri, Nigeria



Commissioned by Alhaji Aliko Dangote, GCON

President, Dangote Group

From Vision to Realisation

"Africa's future will be built by Africans who refuse to accept limits....."

— Alhaji Aliko Dangote, GCON

The Africa Centre of Excellence in Future Energies and Electrochemical Systems (ACE-FUELS), Federal University of Technology Owerri (FUTO), successfully hosted the commissioning of its state-of-the-art research facility, ACE-FUELS ElectroLab X - Electrochemical Lab for Accelerated Breakthroughs and eXponential Energy Technologies. The facility was officially commissioned on Saturday April 25, 2026 by His Excellency, Alhaji Aliko Dangote, GCON, President of the Dangote Group.

The commissioning marked a major step in the Centre's efforts to strengthen Nigeria's capacity in clean energy research, advanced materials development, electrochemical innovation, and the local manufacturing of clean energy devices. It also reflected a deliberate push toward local materials substitution, domestic supply-chain development, improved technology skills training, and technopreneurship as part of broader efforts to reduce import dependence and build indigenous industrial capability.

Key stakeholders present included the Pro-Chancellor, Senator Jack Tilley-Gyado, OFR, CON; the Vice-Chancellor, Prof. Nnenna N. Oti; the Vice-Chancellor-Elect, Prof. Iyke Dozie; members of the University Management, Governing Council, and Senate; and representatives of the National Universities Commission (NUC) and the South East Development Commission (SEDC). Key partners whose contributions to the Centre are acknowledged, but who were not in attendance, include the UK High Commission (UKHC), the Foreign, Commonwealth and Development Office (FCDO), the World Bank, and Agence Française de Développement (AFD).

BACKGROUND & CONTEXT

ACE-FUELS is a World Bank and Agence Française de Développement (AFD)-supported Africa Centre of Excellence (2020–2025) focused on advancing research, training, and innovation in sustainable energy systems and electrochemical technologies. The establishment of ElectroLab X is part of the Centre's strategic vision to develop world-class infrastructure that supports technology capacity building, cutting-edge research and industry-relevant innovation.

Beyond core centre funding, ACE-FUELS has leveraged targeted international support to deliver high-impact projects. UK agencies (including FCDO, UKRI, and the Faraday Institution) have provided project-specific funding enabling advanced programmes hosted within ElectroLab X.

Prof. Emeka E. Oguzie

Centre Leader, ACE-FUELS

Deputy Vice Chancellor (RDI), FUTO

"ElectroLab X is not just a facility; it is a platform for transforming research into real-world impact, enabling local manufacturing, and developing the technical capacity of young people to power Africa's industrial future." - Prof. Emeka E. Oguzie

The Facility

Electrochemical Lab for Accelerated Breakthroughs and eXponential Energy Technologies

ElectroLab X is designed to accelerate breakthroughs in next-generation solar cells (including perovskite technologies), beyond-lithium battery systems (including sodium-ion batteries), materials degradation and corrosion science, and circular economy and sustainable materials processing.

The facility was conceptualized through strategic academic collaborations, particularly with Swansea University and the TEA@SUNRISE initiative, reflecting a long-term vision to build globally connected research infrastructure in Nigeria.

<p>BATTERY FABRICATION Beyond-Lithium Systems Battery fabrication and testing systems supporting the development of next-generation energy storage technologies, including sodium-ion and beyond-lithium batteries.</p>	<p>SOLAR CELL UNITS Perovskite Technologies Solar cell fabrication and characterization units enabling research and pilot-scale development of emerging photovoltaic technologies, particularly perovskite solar modules.</p>
<p>MATERIALS LAB Advanced Characterization Materials characterization laboratories equipped for advanced analysis of structural, chemical, and surface properties critical to materials performance and durability.</p>	<p>HYDROGEN ENERGY Emerging Capabilities Emerging hydrogen energy research capabilities, including materials and coatings development for hydrogen production, storage, and infrastructure protection.</p>

ElectroLab X at a Glance

- ✓ 5+ flagship projects
- ✓ 4 major research domains
- ✓ 5+ international partnerships
- ✓ 1 national innovation hub



Event Highlights

Saturday, April 25, 2026 | FUTO, Owerri

A Convergence of Industry, Academia, and Global Partnerships!

KEY FIGURES

Alhaji Aliko Dangote, GCON

President & CEO, Dangote Group

Commissioning Authority

Zouera Youssoufou

MD/CEO Aliko Dangote Foundation

Ernest Ebi, MFR

Non-Executive Director, Dangote Cement

Hon. Cliff Ogbede

Executive Director, South East Development Commission

UNIVERSITY LEADERSHIP

Senator Jack Tilley-Gyado, OFR, CON

Pro-Chancellor

Prof. Nnenna N. Oti

Vice-Chancellor

Prof. Iyke Dozie

Vice-Chancellor-Elect

Prof. Emeka E. Oguzie

Centre Leader, ACE-FUELS & DVC (RDI)

Ms. Airudulu Lulu.

National Universities Commission

The commissioning ceremony was a defining moment of the event, symbolising the convergence of industry leadership, academic excellence, and strategic investment in advancing Nigeria's and Africa's energy and materials innovation landscape. The Dangote delegation and distinguished stakeholders were conducted on a guided tour of the ACE-FUELS ElectroLab X facility by Prof. Emeka E. Oguzie, Centre Leader. The tour provided a comprehensive overview of the laboratory's advanced infrastructure and operational capabilities.



DEVELOPMENT PARTNERS

World Bank & AFD

Core funding 2020–2025

FCDO, UKRI, Faraday Institution

UK research programmes

UK High Commission

Diplomatic support

National Universities Commission

Regulatory oversight

Aliko Dangote Foundation

Impact-driven development

South East Development Commission

Regional development

Flagship Projects & Programmes

01

REACH-PSM

Resilient Renewable Energy Access

A transformative initiative supported by UK partners, aimed at developing Africa's first next-generation (perovskite) solar module manufacturing capability. The project focuses on local production, energy access, and capacity building through community-driven holistic development.

Partner: UK Partners (FCDO, UKRI)

02

STAMiNA

Sustainable Transport & Mobility

A global collaboration led by Swansea University and funded by the Faraday Institution (UK), focused on accelerating sodium-ion battery innovation for sustainable transport and affordable mobility through innovation in Na-ion technology.

Partner: Swansea University & Faraday Institution

03

KTP Programme

Solar-Powered Cooling Systems

A UK Government Knowledge Transfer Partnership collaborative project with the University of Birmingham and DeKoolar Nigeria Ltd., focused on developing solar-powered cooling systems for perishable crop preservation and agricultural value chains.

Partner: University of Birmingham

04

Smart Coatings

Renewable Energy Infrastructure

A project under the Carbon to Metal Coating Institute Africa Research and Exchange Collaboration with Queen's University, Ontario, Canada, focused on advanced coatings including hydrogen barrier systems for renewable energy infrastructure.

Partner: Queen's University, Canada

05

UNIDO A2D

Accelerate to Demonstrate

ElectroLab X will play a major role in developing Africa's first urban mining facility for lithium-ion battery recycling in Nigeria, in collaboration with Hinckley eWaste Recycling and the University of Leicester.

Partner: UNIDO & Hinckley eWaste

06

Hydrogen Energy

Emerging Capabilities

Materials and coatings development for hydrogen production, storage, and infrastructure protection. The facility's capabilities position ElectroLab X as a forward-looking platform supporting Africa's participation in emerging hydrogen economies.

Partner: International Collaborations



ACE FUELS
Africa Centre of Excellence in Future
Energies & Electrochemical Systems

PARTNERSHIPS SUPPORTING CLEAN ENERGY INNOVATION & COMMERCIALIZATION



UNIVERSITIES AND POLYTECHNICS

Shared infrastructure and training platforms



INDUSTRY PARTNERSHIPS

Prototype Fabrication and Validation



GLOBAL PARTNERS

Funding Technology Transfer & Networks



KEY FUNDED PROJECTS



REACH-PSM

Developing Rare Earth
Permanent Magnet (REPM)
value chains in Africa



STAMiNA

Strengthening the
Sustainable Financing
of African Mobility Startups



UNIDO A2D FACILITY

Advancing industry 4.0 and
Digital Solutions for
Sustainable Manufacturing

An ACE Impact Centre supported by the World Bank and AFD. Enabled by FCDO

Strategic Significance

Long-term implications for Nigeria and Africa

- A decisive step toward localising advanced energy technology development, including solar, battery, and emerging hydrogen systems, within Nigeria.
- A functional bridge between research and industrial application, enabling technology transfer, pilot-scale innovation, and enterprise development.
- A catalyst for innovation-driven economic growth, supporting job creation, skills development, and the emergence of new industrial value chains.
- A scalable model for effective partnership, demonstrating how academia, industry, and development partners can collaborate to deliver measurable impact.

NEXT STEPS

The Road Ahead

01 Industry Collaboration

Develop structured collaboration frameworks with industry partners, including the Dangote Group and associated entities, to support technology transfer, pilot projects, and commercialization pathways.

02 Research Expansion

Scale and expand research programmes within ElectroLab X, with a focus on high-impact areas such as perovskite solar technologies, sodium-ion batteries, hydrogen energy systems, and advanced materials.

03 Partner Engagement

Deepen engagement with development partners, building on existing support from the World Bank, AFD, and UK partners to mobilise additional funding and programme opportunities.

04 Capacity Building

Accelerate capacity building and skills development, leveraging the facility to train students, researchers, and industry professionals in emerging energy technologies.

05 Flagship Operations

Operationalise flagship projects including REACH-PSM, STAMiNA, and the UNIDO A2D initiative to deliver measurable outcomes and demonstrable impact.

06 Regional Hub

Position ElectroLab X as a regional innovation hub, supporting regional development initiatives including SEDC programmes and contributing to continental energy transition and industrialization efforts.



Building Africa's Energy Future

ElectroLab X — Where Innovation Meets Impact!

The successful commissioning of ACE-FUELS ElectroLab X by Alhaji Aliko Dangote, GCON, marks a defining milestone in the evolution of the Centre and a significant step forward in positioning Nigeria as a hub for advanced energy and materials innovation.

Beyond the inauguration of a research facility, the event underscores the critical role of strategic partnerships in translating investment into impact, bridging the gap between research, industry, and sustainable development. It also highlights the growing importance of building robust innovation ecosystems capable of responding to global energy transitions and emerging industrial priorities.

ACE-FUELS remains firmly committed to advancing innovation, strengthening human capital, and delivering scalable, high-impact solutions to Africa's energy and materials challenges, while leveraging ElectroLab X as a platform for regional and global collaboration.

ACE-FUELS | Federal University of Technology Owerri

www.acefuels-futo.org

Imo State, Nigeria

Supported by: World Bank | Agence Française de Développement (AFD) | FCDO | UKRI | Faraday Institution

