MAKERERE UNIVERSITY

COLLEGE OF ENGINEERING, DESIGN, ART AND TECHNOLOGY

NEWSLETTER

CEDAT

July- September 2026: Issue: 3

Highlights from the 10th National Conference on Communications (NCC2026)

Researchers, industry leaders, policymakers, regulators, and students converged at Makerere University for the 10th National Conference on Communications (NCC2026) from 24th to 25th September, 2026.

Turn your Excellent Research into more Marketable Products – Science Minister to CEDAT Innovators

Vintage Week Celebrates Creativity and Campus Culture

The Margaret Trowell School of Industrial and Fine Arts (MTSIFA) brought creativity, fashion, and cultural expression to the forefront as students concluded the annual MUFASA Vintage Week with a vibrant campus-wide celebration.



Makerere Researchers Advance Green Steel Production

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VALUE ADDITION:
The Minister for Science, Technology and Innovation, Hon. Jordan Asiimwe, made his maiden visit to the College in July 2026. The visit brought together researchers from across CEDAT who showcased pioneering projects in energy, transportation, manufacturing, mineral value addition, and environmental sustainability.



PUBLIC ART TALK:
Students, artists, and art enthusiasts gathered at the Margaret Trowell School of Industrial and Fine Art (MTSIFA) on Monday, September 21st, 2026, for a Public Art Talk organised by UNDER GROUND Contemporary Art and Vodo Arts Society +Lab in collaboration with blaxTARLINE KUMASI.



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Message from the Principal



> A notable highlight was the visit of the Minister of Science, Technology and Innovation, during which staff and students showcased a range of innovative technologies and solutions developed at CEDAT. These demonstrations reflected our community's creativity, talent, and commitment to turning research into practical applications that support Uganda's development agenda.

As we reflect on the past quarter's achievements, I am proud of the progress our College continues to make in advancing research, innovation, teaching, and community engagement in line with Makerere University's strategic vision. The stories featured in this edition demonstrate the transformative power of collaboration in addressing complex societal challenges and creating solutions that improve lives.

Over the past three months, our researchers, students, and partners have continued to contribute to national and global priorities in areas such as sustainable infrastructure, environmental management, water and sanitation, digital transformation, energy systems, and resilient urban development. A notable highlight was the visit of the Minister of Science, Technology and Innovation, during which staff and students showcased a range of innovative technologies and solutions developed at CEDAT. These demonstrations reflected our community's creativity, talent, and commitment to turning research into practical applications that support Uganda's development agenda.

I am encouraged by the growing contributions of our postgraduate students and early-career researchers, who continue to demonstrate excellence through impactful research and innovation. Through strong partnerships with government, industry, development agencies, and academic institutions, we remain committed to creating opportunities for learning, discovery, entrepreneurship, and technology transfer.

I thank our staff, students, alumni, and partners for their unwavering support and dedication. Together, we shall continue to innovate, inspire, and contribute meaningfully to sustainable development in Uganda and beyond.

Prof. Moses Musinguzi,
Principal, CEDAT,
Makerere University

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Participants pose for a group picture at the opening of the NCC 2026 Conference.

NCC2026 Highlights the Future of Communications and Digital Innovation

Researchers, industry leaders, policymakers, regulators, and students converged at Makerere University for the 10th National Conference on Communications (NCC2026) from 24th to 25th September, 2026, reaffirming the conference's role as a leading platform for advancing communications research and digital innovation in Uganda.

Prof. Nawangwe was represented at the event by the Principal of the College of Engineering, Design, Art and Technology (CEDAT), Prof. Moses Musinguzi, under the theme "Accelerating Market-Driven Innovation for Uganda's Development." The conference gave participants an opportunity to share research findings, discuss emerging technological trends, and explore solutions to challenges facing the communications sector.

The 10th edition brought together experts from academia, government, industry, and development partners to examine developments in telecommunications, wireless networks, artificial intelligence, cybersecurity, the Internet of Things (IoT), and digital transformation. Through paper presentations, panel discussions, and technical sessions, participants highlighted the growing importance of research and innovation in shaping Uganda's digital future. The conference also showcased ongoing research projects by faculty members, postgraduate students, and industry practitioners, providing a platform for knowledge exchange and collaboration. Emerging researchers had the opportunity to present their work, receive feedback from experts, and build networks with potential partners and mentors.

Participants emphasized the need for stronger collaboration between universities, industry, and government to ensure that research outcomes translate into practical solutions that address societal needs and support economic growth. At the conference, it was emphasized that communications technologies continue to transform sectors such as education, healthcare, agriculture, transportation, and financial services, creating new opportunities for innovation and inclusive development. As the conference concluded, stakeholders reaffirmed their commitment to strengthening research, fostering innovation, and building the partnerships needed to accelerate Uganda's digital transformation agenda.

From Research Excellence to Market Impact: Minister Asiimwe Challenges CEDAT Innovators

Makerere University's College of Engineering, Design, Art and Technology (CEDAT) has been challenged to accelerate translating research and innovation into commercially viable solutions that can drive Uganda's industrial and economic transformation. The Minister for Science, Technology and Innovation, Hon. Jordan Asiimwe, made his maiden visit to the College in July 2026. The visit brought together researchers from across CEDAT who showcased pioneering projects in energy, transportation, manufacturing, mineral value addition, and environmental sustainability.

"Our future prosperity depends on strengthening our scientific base and ensuring innovation is locally developed and supported."
Jordan Asiimwe

The Minister commended the College for nurturing research that directly addresses national development priorities. He noted that universities play a critical role not only in generating knowledge but also in creating innovative solutions that drive economic growth and improve livelihoods.

"This is my college because I come from engineering mathematics. We are going to work together to ensure that we move on with the guidance of His Excellency the President of the Republic of Uganda.", Hon. Jordan Asiimwe, Minister for Science, Technology and Innovation

Research Beyond the Laboratory

A central theme of the Minister's engagement was the need to move research from laboratories to the marketplace. While acknowledging Makerere University's high-quality research, he challenged researchers to turn scientific discoveries into





technologies, products, and enterprises that create jobs, support industry, and contribute to national development. He emphasised that research should be developed with commercialisation in mind, ensuring that innovations are visible, scalable, and capable of attracting national and international interest. "My mission is to ensure scientists' projects move beyond laboratories into commercialization." he said.

During the tour, the Minister interacted with multidisciplinary teams presenting a range of innovations, including value addition of tungsten ores into tungsten carbides, smart home energy systems, solar-powered water pumping technologies, direct reduction technology for Ugandan iron ores, AI-enabled smart mobility corridors, research supporting e-motorcycle adoption, and the application of iron oxide nanoparticles in water treatment.

The projects demonstrated CEDAT's growing contribution to solving challenges in energy, transportation, mining, manufacturing, and environmental management through research-driven innovation.



Strengthening Uganda's Knowledge Economy

Hon. Asiimwe praised Makerere University's longstanding contribution to research and scholarship, describing it as a leading institution in Uganda and the region. However, he stressed that the country's future competitiveness will depend on stronger linkages between research, innovation, industry, and entrepreneurship.

"Our future prosperity depends on strengthening our scientific base and ensuring innovation is locally developed and supported." Jordan Asiimwe

Speaking during the engagement, Prof. Moses Musinguzi reaffirmed CEDAT's commitment to research excellence and innovation for national development. The Minister's visit both recognised the College's achievements and called on researchers to ensure groundbreaking ideas move from laboratories to industries, communities, and markets where they can create lasting impact. Prof. Musinguzi thanked the STI Ministry for its support, affirming Makerere's continued commitment to championing academic and research excellence while contributing to Uganda's industrial transformation.



New AI-Powered Tools Unveiled to Improve Lake Victoria Water Level Management

New hydrological and climate modelling tools developed under the Lake Victoria Improved Water Level Management through Advanced Modelling (LIVWA) Project were unveiled during a dissemination workshop hosted by Makerere University's College of Engineering, Design, Art and Technology (CEDAT) on August 26, 2026.

The tools integrate remote sensing data, advanced hydrological modelling, and artificial intelligence (AI)-driven forecasting to improve the monitoring, prediction, and management of Lake Victoria's water levels. By combining historical hydrological records with AI-based forecasting techniques, the tools are expected to provide more accurate predictions of water level fluctuations and support evidence-based decision-making for policymakers, water resource managers, hydropower operators, and communities that depend on East Africa's largest freshwater lake.

Supported by the Makerere University Research and Innovation Fund (Mari), the LIVWA Project is being implemented by researchers from CEDAT led by Prof. Henry Alinaitwe and Dr. Martin Tumutungire in collaboration with the Uganda Electricity Generation Company Limited (UEGCL).

The dissemination workshop brought together engineers, researchers, policymakers, environmental experts, and students to examine how the newly developed tools can help address the growing challenges associated with fluctuating lake water levels.

Presenting the project findings, Prof. Alinaitwe highlighted the complexity of Lake Victoria's hydrological system and the need for advanced predictive tools to support sustainable water resource management.

"Lake Victoria's hydrology is complex.", Prof. Henry Alinaitwe

He explained that the lake's water levels are influenced by inflows from major rivers, including the Kagera, Katonga, and Mayanja, as well as groundwater recharge. These dynamics have far-reaching implications for hydropower generation, water supply, transport, fisheries, and environmental sustainability across the region.

"We have seen situations where water levels rise to high points or drop to critical lows."-Prof. Henry Alinaitwe

Beyond showcasing technological innovation, the workshop emphasised the importance of building capacity among researchers and government agencies to effectively utilise climate and hydrological data. Speaking on behalf of the MakRIF Grants Management Committee, Ms Winnie Kyamulabi highlighted the Fund's commitment to supporting research that addresses national development challenges and generates practical solutions. She noted that more than 600 Makerere University staff members have been trained in research conduct and management, strengthening the University's capacity to deliver impactful research. The newly unveiled tools mark a significant milestone in applying data-driven science to improve climate resilience and sustainably manage one of East Africa's most important natural resources.

Makerere Engineers Demonstrate Breakthrough Iron Ore Processing Technology



Prof. Peter W. Olupot, Lead Researcher.

Makerere Researchers Advance Green Steel Production

Researchers at the School of Engineering successfully demonstrated a direct reduced iron (DRI) system that could help reduce Uganda's reliance on imported iron and steel while supporting the transition to greener industrial production. Led by Prof. Peter W. Olupot, Head of the Department of Mechanical Engineering, the research team processed locally sourced iron ore in a fixed-bed reactor at 700°C and 800°C. The project addresses a major challenge facing Uganda's steel sector. Although the country possesses more than 580 million tons of iron ore reserves, it remains heavily dependent on imported iron and steel products. Conventional steelmaking relies on high-grade coal, which is not readily available locally, while electric arc furnaces increasingly face shortages of quality scrap metal. To overcome these constraints, Makerere researchers are developing a hydrogen-based direct reduction technology that converts local iron ore into high-grade iron suitable for steel production without using coal. "The technology offers a coal-free pathway for producing high-grade iron from Uganda's. Through collaboration with the Technical University of Denmark and support from DANIDA, the project is expected to advance green steel production and strengthen Uganda's capacity for sustainable industrial development.

Makerere University and Uganda Securities Exchange Seal Strategic Partnership

The Department of Construction Economics and Management (CEM) entered into collaboration with the Uganda Securities Exchange (USE), marking a milestone in academia-industry partnerships. 'We have been trying to push the collaboration with Uganda Securities Exchange for a while. We are grateful that the USE took the initiative and committed to support us. Makerere is working hard towards becoming research-led, but staying in touch with communities and the field remains paramount. Nathan Kibwami, HoD, CEM Department. The partnership plans to roll out a three-month certificate program by the USE Academy.





MSc Renewable Energy Curriculum Validated

CEDAT hosted a validation workshop on August 28, 2026, to review and refine its revised MSc Renewable Energy curriculum in line with emerging industry demands and Uganda's transition to competence-based education. The engagement brought together engineers, researchers, policymakers, students, and industry representatives to assess how well the curriculum responds to the evolving renewable energy landscape while strengthening practical training, gender inclusion, and alignment with national development priorities.

Moderating the session, Prof. J.B. Kirabira, Co-Principal Investigator of the Austrian Government-supported project Promotion of Hybrid Renewable Energy Systems towards Electricity Access in Uganda, emphasized the need for academic programs that keep pace with global developments in climate change, energy security, and technological innovation. He noted that the revised curriculum equips graduates with competencies in hybrid renewable energy systems, energy storage, system modelling, and energy policy, while integrating gender and social inclusion.

The engagement brought together engineers, researchers, policymakers, students, and industry representatives to assess how well the curriculum responds to the evolving renewable energy landscape while strengthening practical training, gender inclusion, and alignment with national development priorities.

"The renewable energy sector is changing rapidly, and our curricula must evolve to prepare graduates for future energy challenges."- Prof. J.B. Kirabira

The curriculum review is being implemented through a partnership between Makerere University and BOKU University, Austria, led by Dr. Hilary Kasedde. Since 2023, the project has supported curriculum development, establishment of Maker Spaces and instructional laboratories, practical training opportunities, and initiatives promoting gender and social inclusion.

MUFASA Vintage Week Celebrates Creativity and Campus Culture

The Margaret Trowell School of Industrial and Fine Arts (MTSIFA) brought creativity, fashion, and cultural expression to the forefront as students concluded the annual MUFASA Vintage Week with a vibrant campus-wide celebration. The week-long event transformed the school into a colourful showcase of vintage-inspired fashion, with students drawing influence from different eras while adding contemporary interpretations. Designed to celebrate fashion heritage and artistic expression, the event gave students a platform to demonstrate creativity beyond the classroom.

Participants from all academic levels embraced the opportunity to showcase their personal style. Final-year students stood out with polished, sophisticated presentations that reflected both their artistic growth and their transition toward professional careers. Meanwhile, first- and second-year students impressed audiences with bold fashion choices that blended classic vintage aesthetics with modern design trends. Beyond fashion, the event fostered interaction among students from different year groups, strengthening a sense of community within the school. It also highlighted art and design's role in preserving cultural heritage while encouraging innovation and self-expression.







Public Art Talk Sparks Dialogue on Contemporary Art Practices at MTSIFA

Students, artists, and art enthusiasts gathered at the Margaret Trowell School of Industrial and Fine Art (MTSIFA) on Monday, September 21st, 2026, for a Public Art Talk organised by UNDER GROUND Contemporary Art and Vodo Arts Society +Lab in collaboration with blaxTARLINE KUMASI. The event featured renowned Ghanaian art scholars and curators Dr. Kwesi Ohene-Ayeh and Selom Koffi Kudjie, who led an engaging discussion on contemporary art practices, public art, and the role of creative spaces in fostering cultural exchange across Africa.

Held at MTSIFA, the talk provided participants with an opportunity to explore emerging approaches to artistic production, critical discourse, and community engagement. The speakers drew from their experiences within Ghana's vibrant contemporary art scene, sharing insights on curatorial practice, artist-led initiatives, and the importance of collaborative networks in shaping the future of African art.

The event formed part of ongoing efforts by UNDER GROUND Contemporary Art and Vodo Arts Society +Lab to promote dialogue, learning, and cross-cultural engagement among artists, students, and cultural practitioners in the region. The Public Art Talk served as an important opportunity for knowledge sharing and strengthened ties between artistic communities in Uganda and Ghana, further enriching contemporary art discourse on the continent.



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