

# How NASENI is Leveraging Technology Transfer Today For Tomorrow's Industrialization



The EVC/CEO showcasing the NASENI E-Trycircle at the Agency's Headquarters, Abuja.



His Excellency, Governor (Engr.) Abdullahi A. Sule, driving the rugged 110hp tractor after the unveiling exercise while others look on.

By Emmanuel O. Chukwu, Engr. Joy N. Ogbodo, Oluchi-Tony Onyeansi, Jummai K. Mohammed, Engr. Batholomew O. Anavoro and Engr. Chukwuemeka E. Oluka.

Creating, developing and improving on technologies although are critical elements in fostering industrial growth; the vital process of technology transfer remains a significant contributor in that equation. Many organizations, driven by profit motives often keep groundbreaking research findings confidential, thereby missing opportunities to share solutions that could enhance lives.

This gap in technology dissemination was a primary consideration by the Nigerian government while considering the establishment of the National Agency

for Science and Engineering Infrastructure (NASENI) over three (3) decades ago. The Agency serves as a bridge, connecting manufacturers—especially those lacking adequate funding or research capacity—with crucial access to emerging technologies.

Through NASENI, innovative solutions are being disseminated to a wider Nigerian populace, paving ways for spinoff technological advancements that can transform various sectors. NASENI stands out as Nigeria's foremost Agency dedicated to technology transfer and enhancement of indigenous scientific and engineering infrastructure essential for the nation's industrialization.

Established in 1992, NASENI's mission is clear and ambitious: to

nurture a solid base for science and engineering that facilitates home-grown, sustainable industrial development. Central to this mission is the shift from merely consumption of innovations created abroad to actively creating indigenous innovations that cater for local needs. This transformation aims to position Nigeria as a key hub for industrial progress on the African continent.

At the heart of NASENI's efforts is the goal of fostering an environment where local ingenuity can flourish, allowing Nigeria to manufacture standard parts, goods, and services. By empowering small and medium enterprises (SMEs) with the necessary tools and knowledge, NASENI aims to cultivate the capacity for producing globally competitive products. This

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**News**

## Africa Thrives When We Build and Share Our Own Solutions –Halilu



The EVC/CEO of NASENI, Mr. Khalil Suleiman Halilu (4th) and other panelists at GITEX Africa 2025, Marrakech, Morocco.

The EVC/CEO of NASENI, Mr. Khalil Suleiman Halilu has emphasized the importance of African-driven innovation and collaboration as key to unlocking the continent's full potential. He stated this recently at GITEX Africa 2025 held in Marrakech, Morocco.

Speaking on a panel at the event on the session that focuses on, 'Advancing Digital Trade and Home-

grown Technologies Across the Continent', Halilu said, "Africa is strong when we create, grow and share our own solutions."

Reflecting on his tech journey, Halilu recalled his 2022 appearance at GITEX Global as a Supernova Challenge finalist, where he showcased a groundbreaking mobility and logistics innovation through his startup, *ShapShap*.

The NASENI boss said, "Now, I am here again, this time as a panellist representing NASENI and showing what is possible when we believe in and build our own ideas." He reinforced NASENI's commitment to indigenous innovation and infinite possibilities for Africa's future.

## Halilu Celebrates Minister, Commends Youth-Centred Leadership

The EVC/CEO of NASENI, Mr. Khalil Suleiman Halilu, has extended warm birthday wishes to the Honourable Minister of Youth Development, Mr. Ayodele Olawande, on the occasion of his 35th birthday.

In a statement, Halilu praised the Minister's dedication to translating vision into tangible action for the benefit of Nigeria's youth. "As someone who believes deeply in the power of young people to drive innovation and progress, I see in @ayowisdom, a leader committed to meaningful impact.

"The work being done by the Honourable Minister in empowering young Nigerians is commendable and truly inspiring," he said. Halilu who further expressed his appreciation for the Minister's efforts in shaping a brighter future for the

country through purposeful youth development.

"On this special occasion, I wish him strength, wisdom and joy as he continues to lead with purpose. Today, we celebrate not just a birthday, but a life of service to the next generation," he added.



The Honourable Minister of Honourable Minister of Youth Development, Mr. Ayodele Olawande.

## NATIONAL AGENCY FOR SCIENCE AND ENGINEERING INFRASTRUCTURE (NASENI)

### OUR GOAL

**To build a 21st century institution founded on and driven by the core principles of Collaboration, Creation and Commercialization.**

### OUR VISION

**Fueling Nigeria's innovation for a sustainable future.**

### OUR MISSION

**We develop and maintain a dynamic Science and Engineering Infrastructure to drive indigenous industrialization, job creation and national progress.**

### OUR CORE VALUES

#### KNOWLEDGE SHARING:

**Leveraging local materials and rapid conversion of innovation into market-ready products.**

#### INNOVATION:

**Providing technology needs for the growth of Nigeria industries.**

#### TECHNO-NATIONALISM:

**Making Nigeria become key player in global technology advancement or invention.**

#### PROFESSIONALISM:

**To show competence and excellence in every aspect of its organizational activities.**

**NASENI: INFINITE POSSIBILITIES...**



**Feature**

# How NASENI is Leveraging Technology Transfer Today For Tomorrow's Industrialization

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not only lessens reliance on imports but also stimulates domestic economic growth through the strengthening of local industries.

Technology transfer is the lifeblood of NASENI's initiatives. It adeptly adapts global innovations to fit local contexts, thereby creating tailored indigenous solutions that meet specific societal needs. According to the World Intellectual Property Organization (WIPO), technology transfer is a collaborative process that facilitates the movement of scientific discoveries, knowledge, and intellectual property from creators—such as universities and research institutions—to various public and private users.

This definition is vividly reflected in NASENI's operational culture. Under the leadership of its visionary



*Stringing and soldering of solar cells at NASENI Solar Energy Limited, Karshi, Abuja.*

**Technology transfer is the lifeblood of NASENI's initiatives. It adeptly adapts global innovations to fit local contexts, thereby creating tailored indigenous solutions that meet specific societal needs.**

Executive Vice Chairman and Chief Executive Officer, Mr. Khalil Suleiman Halilu, the Agency is diligently deploying innovative research outcomes to develop state-of-the-art technologies and solutions that directly addresses societal challenges and contribute to both the country's industrialization and economic advancement.

Throughout Nigeria, NASENI has a network of specialized Development Institutes or Divisions, each focusing on distinct areas of technology intervention and collaboration, leading to the indigenous mass production of technologies vital for sectors such as power, manufacturing, agriculture, solid minerals, electronics, education, science, engineering, and transportation.

These Institutes serve as vibrant factories of innovation, where pioneering research is conducted, prototypes are designed and developed, and technologies are manufactured and transferred to enterprises for commercialization. This strategic approach ensures that Nigeria's industrial aspirations transit from mere dreams to tangible realities through deliberate and cohesive efforts.

With twelve functional Institutes and over eight others underway, NASENI has consistently demonstrated its capacity to leverage Science, Technology, Engineering and Mathematics (STEM) alongside Science, Technology Innovation (STI) for impactful technological

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**News**

# NASENI and Caverton Helicopters Train Female Staff on UAV

By Hadiza Abdul Abubakar, Lagos



*Director Corporate Services, Caverton Helicopters, Mr Ayodele Omueti (middle) in a group photograph with NASENI female UAV trainees and Caverton Helicopters officials during the onboarding ceremony at the Caverton MRO facility in Ikeja Airport, Lagos on Tuesday, April 8, 2025.*

The National Agency for Science and Engineering Infrastructure (NASENI) and Caverton Helicopters have commenced the second batch training consisting of 10 selected female engineers and scientists from NASENI system-wide in Unmanned Aerial Vehicles (UAVs) technology.

The six-week training program, which kicked off on Monday 7th of April 2025 at Caverton's training school in Ikeja, Lagos, is part of the NASENI-Caverton, (NASCAV) ongoing partnership agreement to strengthen the aviation mandate of the Agency.

The training is a key component of the SHEFLY project, a pioneering

initiative by the EVC/CEO of NASENI, Mr. Khalil Suleiman Halilu, aimed at empowering rural women to leverage drone technology for precision farming and increased agricultural yields, aligning with President Bola Ahmed Tinubu's Renewed Hope Agenda.

In his remarks, Dr. Abayomi Okesola, the team Lead NASCAV project, who spoke on behalf of NASENI management, welcomed the trainees to the epoch training exercise with Caverton, citing them as worthy partners due to their impressive track record in aviation and marine spaces. He said the SHEFLY project is very dear to the heart of the EVC/CEO of NASENI who perceived the exercise as a valuable

initiative to promote women in STEM fields and bridge the existing gender gap.

Abayomi said the selection of female trainees from the various institutes across different zones was a deliberate effort to manage clusters that will be set up to train rural women in drone technology for enhanced agricultural activities nationwide.

In his welcome address, the managing director of Caverton Helicopters, Captain Bello Ibrahim, represented by the Director of Corporate Services, Mr. Ayodele Omueti, stressed that "the training is timely to ensure we remain current with global technological advancements". He therefore urged the trainees to stay focused to acquire the knowledge they have come for.

On his part, Mr. Obukonise Ese, a U.K GVC licensed and EASA certified drone pilot with Caverton Helicopters stated that the training adheres to international standards and best practices. He said it would enable the trainees to maximize their potentials and contribute effectively to NASENI's initiatives.

He noted that the demand for UAV pilots in the world is exceptionally high and the SHEFLY project would not only promote gender inclusiveness in a male dominated field but also empower women to capitalize on emerging opportunities in UAV technology. Upon completion, the female trainees will in turn, train rural women farmers to utilize drone technology to improve and boost farm yields.



**Feature**

# How NASENI is Leveraging Technology Transfer Today For Tomorrow's Industrialization

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development and transfer across diverse sectors.

For instance, in the power sector, its Power Equipment and Electrical Machinery Development Institute (PEEMADI) located in Okene, Kogi State is developing indigenous step-down transformers and providing training programmes for individuals and organizations focusing on High Voltage Testing and Diagnosis of Power System Equipment.

Additionally, its Engineering Materials Development Institute (EMDI) in Akure, Ondo State and the Electronics Development Institute (ELDI) in Awka, Anambra State have innovated renewable energy solutions, such as the NASENI BOSGEN (Battery Operated Solar Generator) system, which offers a range of power generation capabilities from 480 watts to 1 kilovolt-amperes and a 15 kilovolt-amperes hybrid solar generator, a sustainable energy solution to solving electricity shortfalls in the electricity value chain.

In the education sector, the Agency's two Scientific Equipment Development Institutes (SEDI) located in Enugu, Enugu State, and Minna, Niger State respectively, have successfully developed and deployed innovative educational tools such as the Primary Science Kit (PSK) and the Junior Science Kit (JSK) amongst other solutions, which are designed to facilitate engaging and effective knowledge transfer in primary and secondary schools, enhancing science curriculum and educational outcomes, thus sparking growing interests among young students in pursuing careers in science and engineering fields.

In the agricultural sector, NASENI is

making impact with its Agricultural Machinery and Equipment Development Institute (AMEDI) through which farmers would benefit from technology transfer that enables both mechanized and soilless farming, leading to greater efficiency and improved preservation methods for food crops thereby addressing food security challenges.

Moreover, the recently launched Irrigate Nigeria Project (INP), integrating NASENI's Solar Irrigation Pumps and other sustainable technologies, is another technology transfer initiative that transition farmers away from rain-dependent practices to smart, irrigated agriculture all-year-round, promises to enhance Nigeria's food security and affordability, ensuring a more reliable food supply for the population.

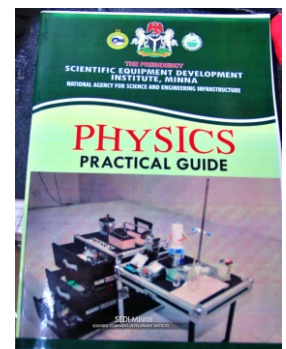
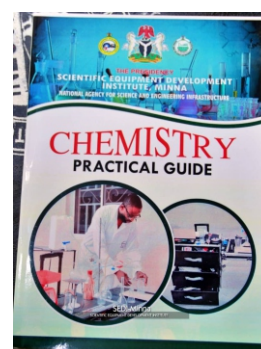
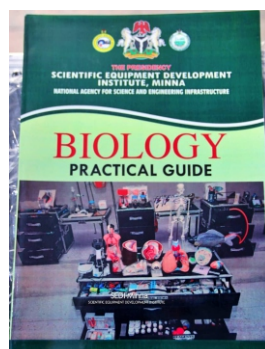
Other initiatives such as the NASENI Electric-powered KEKE NAPEP (tricycle), Android Smartphone, 10-inch Android Tablet and Laptop, Street

Lamp, upcoming Coal-based Fertilizer plants, Power stove, Hatch box, NASENI Campus, Innovation Hub, Lithium battery processing and production plant among others, according to Mr. Halilu, are essential opportunities for NASENI to leverage its technology and innovation through collaboration with critical private sector players in service of the Nigerian people, in line with the Agency's principles of Collaboration, Creation and Commercialization (3Cs).

In conclusion, with NASENI's commitment to fostering technology transfer and empowering local industries, the Agency is poised to propel Nigeria towards a future of self-reliance and industrial capability. By aligning global innovations with local needs, NASENI is not just envisioning a prosperous tomorrow but actively crafting the tools and pathways to realize that vision even for today.



*Educational Materials by the Scientific Equipment Development Institute (SEDI), Minna as part of NASENI's intervention in Education sector.*



## Institute News

### Bobtrack Tractor Unveils 110hp Tractor in AMEDI

By Olaniyi Abdulwaheed, Lafia



*His Excellency, Governor (Engr.) Abdullahi A. Sule, driving the rugged 110hp tractor after the unveiling exercise while others look on.*

The Agricultural Machinery and Equipment Development Institute (AMEDI), Lafia, Nasarawa State and its technical partner in tractor assembly and manufacturing, Bobtrack Tractors Ltd, have unveiled the rugged 110hp Tractor, the latest in the series of equipment tailored for agricultural mechanization.

The event which took place on Thursday, April 10, 2025, saw Bobtrack Tractors, AMEDI Lafia and the Nasarawa State Government which are in partnership, took a step further to ensure food security and promotion of mechanized farming and agro-business in the country.

The Overseeing Officer of AMEDI Lafia, Engr. Mustapha Usman, who welcomed the CEO of Bobtrack Tractors, Mr. Ibifiri A.C. BobManuel and the governor of Nasarawa State, Engineer Abdullahi A. Sule, stated that the time was finally ripe for the tractor company to take some AMEDI Staff under its wing and train

them on assemblage of tractors.

Governor (Engr.) Abdullahi A. Sule, who promised to ensure the state was not lagging in agricultural mechanization, pledged to immediately buy some for the equipment for the State's agricultural usage and further promised to support its marketing so that the company would be encouraged to produce more tractors without compromising on quality.

This breakthrough underscores the visionary approach of the EVC of NASENI, Khalil Suleiman Halilu, who enjoined all Institutes to seek meaningful partnerships to foster technology transfer and NASENI's mission to promote Nigeria's Industrialization and technological advancement.

Recall that on Monday, April 22, 2024, the CEO of Bobtrack Tractor and the Nasarawa State Governor, visited the Agency's headquarters in Abuja, where the EVC/CEO assured of NASENI's readiness to do business with them.

## News

### President Tinubu's Adviser Inspects NASENI's Indigenous Innovations

The EVC/CEO of NASENI, Mr. Khalil Suleiman Halilu, recently hosted the Special Adviser to President Bola Ahmed Tinubu on Media and Public Communications, Mr. Sunday Dare, at the Agency's headquarters in Abuja.

The visit featured a guided tour of some of NASENI's groundbreaking Indigenous innovations, including solar-powered irrigation pumps, the Hatchbox creative studio, NASENI's Innovation Hub and other standout projects drawn from a pool of 35 innovations developed within the first year of Halilu's leadership.

Speaking after the tour, Halilu expressed appreciation for the visit and reaffirmed NASENI's commitment to driving Nigeria's industrialization agenda through home-grown technology. "I am grateful for his visit and support to Nigeria's industrialization," he stated. The visit aligns with NASENI's vision of promoting Infinite Possibilities through innovation, manufacturing, and strategic collaboration.



*Special Adviser to President Bola Ahmed Tinubu on Media and Public Communications, Mr. Sunday Dare and the EVC/CEO of NASENI during a visit to the Hatch Box at the Agency's Headquarters.*



**Institute News**

# NSE Moves to Strengthen Collaboration with EMDI

By Adebare Ahmed, Akure



The Ondo State Chapter of the Nigerian Society of Engineers (NSE) recently paid a courtesy visit to the Engineering Materials Development Institute (EMDI), Akure, a division of NASENI, as part of efforts to deepen collaboration and strengthen professional ties.

The Overseeing Officer of the Institute, Mrs. Fausat Olumide Yusuf, who was represented by Engineer Joseph Oladimeji Alasoluyi, Head of the Manufacturing Services Department highlighted the institute's alignment with NASENI's 3Cs principles of Collaboration, Creation and Commercialization.

According to her, these principles, introduced by NASENI EVC/CEO, Mr. Khalil Suleiman Halilu, aim at transforming the Agency and its Institutes to fast-track technological advancement and industrialization of the nation. She therefore reaffirmed EMDI's openness to collaborative initiatives with relevant stakeholders in technology and engineering.

Mrs. Yusuf also noted that the Institute currently has 39 registered members who are not only part of NSE, but also accredited by the Council for the Regulation of Engineering in Nigeria (COREN), alongside several PhD holders affiliated with other distinguished professional bodies.

While speaking, the NSE Chairman, Ondo State Chapter, Engineer Oluwaseun Daniel Adeyeye commended the EMDI Management and staff for their ongoing support of NSE activities within the state, emphasizing that the visit aligns with the Society's commitment to fostering collaboration and exploring networking opportunities with the Institute.

He used the medium to appeal to the Institute's leadership to release members to attend the upcoming NSE National Conference in Abuja, scheduled for July 14–17, 2025, as well as the Annual General Meeting (AGM), to be held in Ibadan from December 1–5, 2025.

## Enyi Takes Over Leadership at SOMMEDI

By Ahmed Sani, Nasarawa

The new Overseeing Officer, Solid Minerals and Machinery Equipment Development Institute (SOMMEDI), Nasarawa, Mr. Stephen Enyi has assumed office on April 8, 2025 at the institute.

The brief handover ceremony held at the conference hall of the administrative block witnessed a change of leadership baton to Enyi from the former Project Manager of the Institute, Engr. Danjuma Adamu Ibrahim who piloted the affairs of SOMMEDI from inception.

Enyi is a graduate of Geology and Mining from the University of Jos with experience in Seismic Data Acquisition, Well Correlation, Field Mapping Data Analysis and Researches. He holds a Post-Graduate Diploma and Masters in Environmental Geology respectively.

He is also a member of Nigeria Mining and Geosciences Society (NMGS) and member, The Council of Nigeria Mining and Geosciences (COMEG).



Enyi Stephen

## ***Institute News***

### **PEDI Trains Air Force Officers on CNC Machine Operations**

By Omowumi M. Oladele, Ilesha



A team of engineers from the Prototype Engineering Development Institute (PEDI), Ilesha, Osun State has been dispatched to the Air Force Research and Development Institutes, Oshogbo, Osun State to train the military personnel on Computer Numerical Control (CNC) machine operations.

The Director-General, AFRDI, Oshogbo, Osun State, Air Vice Marshal P.O. Oahimire, who welcomed PEDI team led by Head, Technical Services Department, Engineer Odejobi Olusegun Abel who represented the Overseeing Officer of PEDI, Mr. Hamzat Ahmed Olaoye.

He stated that the three weeks capacity building training was designed to train eleven (11) personnel comprising two officers, seven airmen and two civilian staff. The Director, Aerospace Research, AFRDI, Air Vice Marshall Osichinaka C. Ubadike, who declared the training opened described PEDI as a technical partner that supports AFRDI in achieving its mandates.

Speaking, Engr. Odejobi appreciated the DG of AFRDI, Osun State and the Management of the AFRDI for the collaboration, adding that, PEDI will play a vital role in the installation of the CNC machines in AFRDI's workshop. He noted that the EVC of NASENI, Mr. Khalil Suleiman Halilu is supporting PEDI to accomplish its mandates and vision.

### **EMDI Introduces Charging Bay for Mobile Devices**

By Adebare Ahmed, Akure

The Engineering Materials Development Institute (EMDI), Akure, Ondo State, has introduced an innovative Charging Bay, a groundbreaking project designed to provide a reliable and sustainable solution for charging mobile devices in areas with erratic power supply.

The Charging Bay powered by a renewable energy source such as solar or public mains, is a cutting-edge device that boasts of 45 charging ports, allowing multiple users to charge their phones simultaneously. This innovative approach reduces reliance on combustible fuels and mitigates environmental impact.

The bay operates on a simple, yet effective principle with a power source, charging controller and charging port working together to provide a convenient and eco-friendly charging solution. This innovative technology will provide job creation for youths and wealth generation for Small and Medium Enterprises (SMEs).

The charging bay is designed to cater to a wide range of users, including the general public, those in the rural areas, those at government or public functions, youth empowerment programmes and in urban areas with erratic power supply.

### **Osun State Hosts NASENI Strategy Focus Group Meeting**

By Omowumi M. Oladele, Ilesha

The NASENI Strategy Focus Group Meeting on Made-In-Nigeria products, aimed at sensitizing Nigerians to patronise indigenously manufactured goods was recently hosted at Ideal Nest Hotel, Osogbo Osun State.

The Head of Technical Service, Prototype Engineering Development Institute (PEDI), Ilesha, Engr. A. O. Odejobi who represented the EVC/CEO of NASENI, Mr. Khalilu Suleiman Halilu, addressed the audience made up of stakeholders, captains of industries, Small and Medium Enterprises (SMEs) owners.

The event also had in attendance experts from the Standards Organisation of Nigeria (SON) and other associations. The EVC/CEO underscored the importance of Made-in-Nigeria products, while highlighting the activities and achievements of the Agency in the areas of technology Innovation in order to have made-in-Nigeria products.

The highlight of the event was the questions and answers session where problems hindering the availability of locally made goods were discussed and the possible means to solve the problems were suggested by the forum.



**Photo News**



The EVC/CEO of NASENI, Khalil Suleiman Halilu at #JAPANITWEEK as he continues to explore technology innovations from Artificial Intelligence (AI) to Green Technology to position Nigeria as a global player in innovation.



The Special Adviser to President Bola Ahmed Tinubu on Media and Public Communications, Mr. Sunday Dare on a guided tour to some NASENI's Groundbreaking indigenous innovations at the Agency's Headquarters by the EVC/CEO of NASENI, Mr. Khalil Suleiman Halilu.



Participants and panelists at the NASENI Strategic Focus Group Meeting on Made-In-Nigeria Products held in Oshogbo, Osun State recently.



The visit of Air Force Research and Development Institute, Oshogbo, Osun State to collaborate with the Prototype Engineering Development Institute (PEDI, Ilesha to train their personnel on Computer Numerical Control (CNC) Machine Operations.





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