

# SciTech Chronicles

## SCHOOL OF TECHNOLOGY & SCIENCES NEWSLETTER

OCTOBER- 2025



# Message .....

*"REMEMBER, LEADERSHIP IS NOT JUST ABOUT ACHIEVING GOALS; IT'S ABOUT INSPIRING OTHERS TO ACHIEVE THEM TOGETHER. BY BLENDING THE WISDOM OF THE PAST WITH THE REALITIES OF THE PRESENT, LEADERS CAN NAVIGATE THE COMPLEXITIES OF THE MODERN WORLD AND CREATE LASTING IMPACT."*

**-Dr. Raul V. Rodriguez**  
Vice-President  
Woxsen University



*"I BELIEVE THAT EDUCATION IS NOT MERELY THE ACQUISITION OF KNOWLEDGE, BUT THE CULTIVATION OF WISDOM. WE WILL STRIVE TO CREATE A HOLISTIC LEARNING EXPERIENCE THAT FOSTERS INTELLECTUAL CURIOSITY, ETHICAL CONSCIOUSNESS, AND CULTURAL SENSITIVITY. BY PROVIDING OPPORTUNITIES FOR EXPERIENTIAL LEARNING, MENTORSHIP, AND COMMUNITY ENGAGEMENT, WE WILL EQUIP OUR STUDENTS WITH THE SKILLS AND VALUES NEEDED TO SUCCEED IN AN EVER-EVOLVING WORLD."*

**-Dr. Uma Ananda**  
Vice Chancellor  
Woxsen University

# Message .....



*"IN MY SCHOOL OF TECHNOLOGY IT IS NOT JUST ABOUT THE CUTTING-EDGE LABS WITH THE LATEST INFRASTRUCTURE BUT THE ENVIRONMENT AND THE MENTORS AMONG THE FACULTY."*

**-Dr. Pepluis Esteva de la Rosa**  
Executive Dean  
School of Technology

*"AS DEAN OF THE SCHOOL OF SCIENCES, I'M PROUD OF OUR STUDENTS AND FACULTY FOR THEIR HARD WORK. OUR LABS ARE HELPING DRIVE EXCITING RESEARCH AND HANDS-ON LEARNING. I LOOK FORWARD TO THE CONTINUED SUCCESS OF OUR COMMUNITY."*

**-Dr. Daya Shankar**  
Dean  
School of Sciences



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# SCIENCE AND TECHNOLOGY NEWS

The School of Sciences and Care & Cure, in collaboration with Aster Prime Hospital, Hyderabad, successfully organized the ERS Activity “Life-Drop: Donate Blood, Donate Life” on 17th September 2025. The blood donation camp witnessed enthusiastic participation from students, faculty, and staff, reflecting a strong sense of empathy, social responsibility, and community spirit. The initiative created a platform for volunteers to contribute towards a noble cause, emphasizing the life-saving value of each blood donation. Doctors and healthcare professionals from Aster Prime Hospital guided the process with utmost care, ensuring safety, comfort, and awareness among all donors.



Beyond just the act of donating blood, the event fostered a culture of compassion, reminding participants that even a small contribution can make a significant difference in someone's life.

## Celebrating International Ozone Protection Day at Woxsen University

In celebration of International Ozone Protection Day, Woxsen University hosted Woxsen Sustainability Day 2025 on 16th September 2025, organized by the School of Arts and Design as part of the 4HUB Sustainable Days-2025. The event provided a platform to raise awareness about environmental sustainability and the critical role of ozone protection.



We are proud to announce that the Junior Research Junior Scholars from the School of Sciences (SOS), Batch 2025–2029, secured the Runner-Up Trophy, tying with the School of Technology and the School of Business.

Their success was made possible under the able guidance of Dr. Shaik Parvinnisa and Dr. Nilesh D. Gawande, whose mentorship played a pivotal role in shaping and supporting the team's journey.

# SCIENCE AND TECHNOLOGY NEWS

Dr. Pranjali extending her gratitude towards the event **“NeuroTech in Action at Woxsen University”!**

We recently concluded a power-packed 2-day workshop, “NeuroTech in Action: Building Brain-Computer Interfaces with Python”, hosted by the School of Business (SOB) and the School of Technology (SOT) at Woxsen University.

The workshop brought together students, faculty, and external participants to explore the fascinating intersection of cognitive science, brain-computer interfaces (BCI), machine learning, and Python programming.

- ◆ Day 1 focused on the foundations of Cognitive Science, Human Attention, and the basics of BCI & biomedical signals.

- ◆ Day 2 delved into EEG signal acquisition, preprocessing, machine learning applications (SVM, KNN, Random Forest), and concluded with innovative mini-projects where participants pitched BCI use-cases in healthcare, gaming, and education.



**Key outcomes :**

Hands-on skills in EEG data processing & visualization with Python

Exposure to ML pipelines for brain-signal classification.

Awareness of career paths in BCI, Neuroergonomics & AI in healthcare

A collaborative environment sparking innovation & ideas across engineering, AI/ML, and related fields, the workshop struck a balance between theory and practice, leaving participants inspired for further research and real-world applications in NeuroTech.

Resource person: Dr. PRANJALI GAJBHIYE and Prof. Priya Pallavi

Special appearance: Dr. Shyam Joshi, Ph.D (IIT Delhi). and Amar Kumar Verma, PhD

A special thanks to Dr. Hemachandran K | Raul Villamarin Rodriguez for collaborative works ahead in the field of Cognitive connects towards NeuroTech. This is just the beginning- Woxsen continues to nurture curiosity, innovation, and interdisciplinary learning at the frontiers of technology.”

# SCIENCE AND TECHNOLOGY NEWS

Prof. Aditya Assistant Dean 4 HUB conveyed his gratitude on LinkedIn “Honoured to be invited as a Guest Speaker for “Smart Campus, Sustainable Future: A Living Lab Scholarly Showcase” – a remarkable collaboration between the School of Technology and 4HUB – Sustainable Design & Environmental Hub at Woxsen University.



This initiative beautifully demonstrates how student-led innovation and applied research can drive real progress toward our Sustainability and Net-Zero Campus Goals – through projects in AI, IoT, Blockchain, and Renewable Energy. It was truly inspiring to interact with brilliant young minds during my expert talk and hands-on workshop on “Understanding and Optimizing Campus Building Energy Consumption”, where students explored real-time data, CO<sub>2</sub> analysis, and energy optimization techniques.

Grateful to the leadership Raul Villamarin Rodriguez, Uma Ananda Dagnino González, Pep Lluis Esteva for their constant support and for fostering a culture of sustainability-driven innovation.

A big appreciation to faculty coordinators Dr. S. Bhanu prakash Meher Gayatri Devi Tiwari, Prof. Priya Pallavi, @SoujanyaN, and the Living Lab team for orchestrating this impactful event.

Together, we are shaping a Smart, Sustainable, and Energy-Efficient Campus – where technology meets purpose, and learning creates measurable impact. 



# SCIENCE AND TECHNOLOGY NEWS

Dr. Segun from School of Technology visits a school and posts on LinkedIn. “Polaris at the Grassroots – Redefining Education for a Brighter Future

At Woxsen University School of Technology, we are bringing research into the classroom and advancing case study & project-based learning at the grassroots through the Woxsen Athena Program.

Grateful to Podar International School - India for hosting this impactful live session where young minds experienced real demonstrations of hashtag#AI, hashtag#IoT, and hashtag#Robotics in action.

Special appreciation to Ashish Bhala for organizing this session.

Together, we are igniting curiosity, fostering research-oriented thinking, and shaping the innovators of tomorrow.”



Dr. Venkat Narayana Program Director of First Year B.Tech conveys on LinkedIn “At the School of Technology, Woxsen University, our B.Tech First-Year junior scholars (students) are taking bold steps in research and innovation!💡 Through project-based learning integrated into every semester under the Polaris framework, students are applying their knowledge from basic sciences and technical courses to solve real-world problems.

This hands-on approach has led to remarkable achievements – students are filing patents 🧠, publishing research papers 📄, and showcasing a strong foundation in innovation and critical thinking.

By giving greater weightage to projects, we’re nurturing future-ready engineers who don’t just learn concepts but create meaningful impact.”



# FACULTY ACHIEVEMENTS



**Article**  
**Performance of a Battery-Powered Self-Propelled Coriander Harvester**

Kalluri Praveen <sup>1,✉</sup>, Srinu Banothu <sup>2</sup>, Nagaraju Dharavat <sup>3,\*</sup>, Madineni Lokesh <sup>4</sup> and M. Vinayak <sup>5,✉</sup>

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<sup>5</sup> Correspondence: kallupraveen87@gmail.com (<sup>K.P.</sup>); nagaraju.alur@woxsen.edu.in (<sup>N.D.</sup>)

**Abstract**  
Coriander is a significant crop, playing an essential role in daily life for various purposes, including flavouring curries and medicinal uses, among others. Despite its importance, coriander is still harvested manually. To address this, developed a self-propelled battery-operated coriander harvester, designed with ergonomics, environmental sustainability and affordability for small and marginal farmers in mind. The harvester is equipped with a main frame, a lead-acid battery, a BLDC motor, a reciprocating cutter bar, a PU conveyor belt, a

## Dr. Nagaraju Dharavat

Associate Professor - School of Technology, published an article on Performance of a Battery-Powered Self-Propelled Coriander Harvester in AgriEngineering Journal MDPI.

## Dr. Segun E.Ibitoye and Dr. Monday J. Abdullahi

Assistant professors - School of Technology, published a paper titled Optimization of Rice Straw properties via Torrefaction for solid fuel applications in BioEnergy Research.



**BioEnergy Research** (2023) 18:95  
<https://doi.org/10.1007/s12155-023-16898-w>

**Check for updates**

**Optimization of Rice Straw Properties via Torrefaction for Solid Fuel Applications**

Segun E. Ibitoye<sup>1,2,3,✉</sup>, Chanchal Loha<sup>4</sup>, Rasheedat M. Mahamood<sup>1,5</sup>, Olalekan A. Olayemi<sup>6</sup>, Meraj Alam<sup>7</sup>, Tien-Chien Jen<sup>2</sup>, Monday J. Abdullahi<sup>1</sup>, Esther T. Akinlabi<sup>1</sup>

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**Abstract**  
This study investigated the potential of biochar produced via torrefaction of rice straw as a sustainable alternative to coal and coke in fire and steel production. The effects of process parameters, temperature (200–290 °C), residence time (20–60 min), and heating rate (10–30 °C/min) on torrefaction yield were evaluated. Following optimization, the biochar was characterized through ultimate proximate, SEM, BET, EDS, and TG analyses, and its properties were compared to those of coal. The results indicated that the solid, liquid, and syngas yields ranged from 44.67–96.43, 1.59–22.39, and 2.07–36.79%, respectively. The optimized process parameters achieved a solid yield of approximately 64% at an optimal temperature of 270 °C. The moisture, ash, volatile, and fixed contents of the biochar ranged from 7.43–8.80, 5.76–6.87, 21.75–29.26, and 56.83–63.82%, respectively. Among the optimized samples, O3 exhibited superior combustion performance, with a fixed carbon content of 63.82% and morphological properties comparable to bituminous coal. The HHV (19.88 MJ/kg) of the optimized biochar falls within the upper range of lignite and approaches the lower range of bituminous coal. The optimized biochar showed a significantly higher BET surface area (58.845–59.572 m<sup>2</sup>/g) than lignite and anthracite (0.187–1.498 m<sup>2</sup>/g). Its BJH-specific surface area (47.423–48.194 m<sup>2</sup>/g) also far exceeds that of coal (0.178–1.985 m<sup>2</sup>/g), indicating superior adsorption capacity.

## Enhancing Solar Photovoltaic Cell Parameter Estimation by a Linear Regression-based Optimization Technique

### Author Names and email ID for correspondence

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### Author Contribution Statement

**Bharathi Gamgula:** Conceptualization, Investigation, Methodology, Writing – Original draft, Software, Formal Analysis. **Bhanu Prakash Saripalli:** Conceptualization, Data Curation, Resources, Writing – Review and editing. **Prashant Kumar:** Formal Analysis, Validation, Writing – Review and editing.

## Dr. Bhanu Prakash and Scholar Bharathi Gamgula

Assistant Professor - School of Technology published an article on Enhancing solar photovoltaic cell parameter estimation by a linear regression-based optimization technique in Oxford University Press .

# FACULTY ACHIEVEMENTS

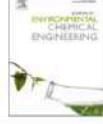
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**Palladium-catalyzed thermo, photo, and electrocatalytic CO<sub>2</sub> conversion to methanol and formaldehyde: A review of mechanistic pathways using synthetic, biogas, and fossil-derived CO<sub>2</sub>**

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## Dr. Daya Shankar Tiwari and Anand Dr. Amlan Halder

Dean School of Sciences and Assistant Professor - School of Science published an article “Cosmological interactions with phantom scalar field: Revisiting background phase-space analysis with compactified variables.” in Chaos, Solitons and Fractals.

Chaos, Solitons and Fractals 200 (2025) 117170

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Chaos, Solitons and Fractals

journal homepage: [www.elsevier.com/locate/chaos](http://www.elsevier.com/locate/chaos)





**Cosmological interactions with phantom scalar field: Revisiting background phase-space analysis with compactified variables**

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### ARTICLE INFO

**Keywords:**  
 Cosmological interactions  
 Phantom scalar field  
 Dynamical analysis

### ABSTRACT

Energy transfer in the dark sector of the universe gives rise to new phenomena of special interest in modern cosmology. When dark energy is modeled as a phantom scalar field, interactions become crucial to avoid Big Rip singularities. In this work, we revisit the phase-space analysis of the field equations by introducing a new set of dimensionless variables distinct from the traditional Hubble normalization approach. These new variables define a compactified phase space for the evolution of physical parameters. We demonstrate that these compactified variables offer fresh insights into the phase-space analysis in gravitational theories, particularly when the dark energy fluid is allowed to possess a negative energy density.



# STUDENTS' ACHIEVEMENTS

The month of September 2025 has been marked by commendable student achievements across diverse domains ranging from cutting-edge technologies to impactful social contributions.

## **G Shivamani – B. Tech 2026 (CSE), K Saranya – B. Tech 2027 (AIML)**

has received a Certificate of Appreciation for attending the 2025 NeuroTech in Action Workshop organized by Woxsen University from 24<sup>th</sup> – 25<sup>th</sup> September 2025.



**Veenela Linga – B. Tech 2028 (AIML), 1. Thrinani Aroori – B. Tech 2027 (AIML)**

has received a Certificate of Participation in recognition of her initiative and contribution to the Google Cloud Agentic AI Day powered by Hack2skill.



**K Kaavya Hemanth – B. Tech 2026  
(AIML), B Bhanu Mahesh – B. Tech  
2026 (AIML)**

has received a Certificate of Participation for participating in the Round 1 Online MCQ Assessment + Coding of Adobe India Hackathon organised by Adobe.



**Aayushmaan Pandab - BTech-2029  
(AIML)**

has received a Certificate of Appreciation for completing the Generative AI Mastery Workshop.



**Arnav Jain - BTech-2029 (CSE)**

has received a certificate of appreciation for completing the online course on Introduction to Generative AI.



**C Mohith Reddy – B.Tech 2027 (AIML),  
Koushik K – B. Tech 2027 (AIML), K  
Saranya – B. Tech 2027 (AIML), M  
Deepak Chowdary - B.Tech 2027  
(AIML), Sai Teja - B.Tech 2027 (AIML)**

has received a Certificate of Participation for attending the Environmental Sustainability Exhibition (ESE-3.0) held on 19th September 2025 at SRM University – A.P.



# PUZZLE TIME !!

## The Missing Quantum Module

### Scenario (story):

The Quantum Systems Lab prepared four prototype modules for testing: Alpha (A), Beta (B), Gamma (C), and Delta (D). On Monday morning the lead engineer discovered one prototype missing from the secure rack. Four lab assistants had access that day and each was on the lab roster:

- Rao – senior assistant
- Meera – hardware specialist
- Sameer – test engineer
- Tanya – facilities coordinator

Each assistant entered the lab at a different time and used a different access point (Main door, Window, Service hatch, Maintenance corridor). After interviewing staff and checking partial logs, the security officer gathered the following clues.

### Clue:

1. Exactly one prototype is missing: Gamma (C). (So the missing item is known.)
2. The person who used the Main door came in at 11:00.
3. Meera did not handle Alpha (A) or Beta (B).
4. Whoever came at 2:00 entered through the Window.
5. Sameer used the Service hatch.
6. The assistant who took Delta (D) arrived later than the assistant who handled Alpha (A).
7. Rao did not use the Corridor or the Main door.
8. Tanya did not arrive at 9:00.
9. The person who used the Corridor handled Beta (B).
10. The assistant who arrived at 9:00 did not handle Gamma (C).
11. The person who used the Main door did not handle Gamma (C).

# ANSWERS FOR THE PREVIOUS PUZZLE

## Option A

Change the digit-sum from  $20 \rightarrow 18$  (18 is a multiple of 9).

Keep the other clues the same:

- 4 digits, no repeats
- digit sum = 18
- $|first - second|$  is prime
- last two digits form a number divisible by 4
- whole number divisible by 9 (now consistent because sum = 18)

If you then take the smallest 4-digit number satisfying all these, you get:

Answer: 1368

Checks:

- digits distinct: 1,3,6,8
- sum =  $1+3+6+8 = 18$
- $|1 - 3| = 2$  which is prime
- last two digits 68 divisible by 4 ( $68 \div 4 = 17$ )
- whole number 1368 divisible by 9 ( $1368 \div 9 = 152$ )

## Option B

If you want a single unique code without adding “smallest/largest” meta-rules, add one more constraint such as:

“Digits are strictly increasing” or

“The code is the smallest possible” (then 1368), or

“No digit is 0 and digits are in ascending order” – that will typically reduce to a single answer.

# Editor's Note

## October 2025 Edition

October has been a month of vibrance and momentum at the School of Technology. In the midst of a packed academic calendar, our students and faculty infused energy into an array of workshops, seminars, and activities that brought classrooms to life with hands-on learning.

What stood out this month was the enthusiasm of our students, who participated in multiple workshops with remarkable zeal whether it was exploring cutting-edge technologies, engaging in collaborative problem-solving, or contributing to campus events that blended learning with innovation. Their active involvement reflects the spirit of Woxsen: learning beyond books, driven by curiosity and community.

As we look ahead, let this edition be a reminder that true growth lies not only in academic rigor but also in the opportunities we seize outside the lecture hall.

# Editor's Note

We warmly invite Junior Scholars, faculty, and staff to contribute your stories, achievements, and reflections to upcoming editions of SciTech Chronicles. Together, let's make this magazine the voice. Whether it's a breakthrough project, a global experience, or a classroom innovation your journey can inspire others. Let's make this platform a true voice of our School.

Big or small, every step you take shapes our story. Let's tell it together in SciTech Chronicles. Here's to a month of inspiration, collaboration, and fresh perspectives!

Editor-in-Chief  
SciTech Chronicles  
Woxsen University



**Prof. Meher Gayatri**  
Assistant Professor  
Editor-in-Chief



**Dr. Anusree B**  
Assistant Professor  
Senior Editor