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अनुसंधान

(KIET Research Magazine)



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Indian Institute of Technology, MANDI, H.P.

**Research and Development
KIET Group of Institution**

Delhi-NCR, Ghaziabad, Uttar Pradesh, India-201206

KIET – A GLANCE



Overview

KIET Group of Institutions is recognized as one of the best engineering colleges in Delhi-NCR, founded by the members of Krishna Charitable Society in 1998 with a modest number of 180 students. The KIET Group of Institutions has now become a pioneer in the technical education domain with a strength of 6500+ students.

With a rich alumni base of 19000+ students spread in all the nooks and corners of the world, the KIET Group of Institutions is moving efficiently towards its vision of shaping young minds with skill-oriented & value-based education as these alumni serve the dual purpose of mentoring the present students, as well as opening new doors for them.

The institute has gained a distinct image as an outstanding educational colossal among the technical institutions of Uttar Pradesh due to its inclination toward innovative and skill-based education. Its consistent belief in 'Achieving High' is aptly reflected in its academics, extracurricular activities, and placements. The success of its belief is brought out in the plethora of Education Excellence Awards bagged by the institute. The institute has been accredited by NAAC with Grade 'A+' and its programs (CSE, ECE, EEE, IT, ME, CE, MCA, MBA and Pharmacy) are NBA accredited.

Honors for
Excellent Performance

Accredited by NAAC with Grade "A+"

SIRO Certification by DSIR, Delhi

ARIIA
3rd Rank
"Private Institutions (Technical)"
In India by ARIIA 2021 Ranking

Creating Benchmarks

Success
Consistency
Passion

nirf NATIONAL INSTITUTIONAL RANKING FRAMEWORK

Engineering Rank - 176
Pharmacy Rank Band (76-100)

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Message from the Face of Cover Page



Dear Readers,

I am delighted to have the opportunity to write for the esteemed readers of KIET research magazine. As the Professor and Registrar In charge of IIT Mandi, I feel honoured to share my thoughts with the readers about the role of research and development in driving innovation and growth in the Indian economy.

As we navigate the intricacies of our world today, it is essential that we continue to push the boundaries of knowledge and uncover new insights that can help us tackle the challenges we face. Whether it's in the realms of science, technology, or social science, there is always more to learn and discover, and I have no doubt that the researchers at this Institute are at the forefront of this quest for knowledge.

Research is the steppingstone, and this magazine certainly helps to inspire and educate the readers on the latest developments and breakthroughs in various areas of research. The articles have been written by experts in their respective fields and are sure to provide you with a mammon of wisdom and insights. I am delighted to see that the magazine also has a student's section which exhibits the works of students in the research and product development activities.

Also, the research statistics of the institute is very inspiring. The statistics presented in the magazine are not just numbers on a page - they are the result of countless hours of meticulous research and analysis. KIET team has gone above and beyond to ensure that the presented data is not only accurate, but also presented in a way that is accessible and

meaningful to our readers. The Purpose is to provide you with an engaging and informative reading experience that inspires you to think critically and encourages you to explore the world around you. I encourage you to continue exploring the latest developments in your field and to remain committed to the pursuit of knowledge. Whether you are a fellow researcher or a student, or simply someone who is interested in learning more about our work, there is always something new to discover and explore, and I look forward to seeing the more incredible research work and discoveries that will emerge from this Institute in the years to come. I would end by stating a fact by *Raewyn Connell*

“Research is something that everyone can do, and everyone ought to do. It is simply collecting information and thinking systematically about it.”

Dr. Satinder Kumar Sharma

Professor

School of Computing and Electrical Engineering

Coordinator of C4DFED (Centre for Design & Fabrication of Electronic Devices)

Indian Institute of Technology, Mandi, H.P.

Message from Chief Patron



Dear Members of the Research Community,

As the Director of the KIET Group of Institutions, I am pleased to introduce our latest research endeavours and their possibilities for shaping the future. Our vision is to push the boundaries of knowledge and innovation, and through the tireless efforts of our dedicated researchers, we can achieve this goal.

In the coming months, we will focus on various cutting-edge research topics, including artificial intelligence, biotechnology, and renewable energy. We aim to use these fields to address the most pressing challenges faced by society today, such as climate change, disease, and poverty.

We believe that by fostering an environment of collaboration and open communication, we can make significant progress in these areas. Our researchers will work closely with industry partners, government agencies, and other academic institutions to share their findings and develop new technologies and solutions.

We are excited about our research's possibilities and look forward to sharing our progress with the community. We expect our work to lead to breakthroughs and technologies that will positively impact society, and we are committed to making our research accessible to all who can benefit from it.

Finally, I would like to extend my warmest wishes to all our researchers and partners. Their hard work and dedication make our institute a leading force in the research community, and we are honoured to have you on board. Together, we can achieve remarkable things.

Dr. (Col) A Garg

Director

KIET Group of Institutions

Delhi-NCR, Ghaziabad

Message from Patron



Dear All,

It gives me great pleasure, in my capacity as Joint Director of the KIET Group of Institutions, to introduce this research Magazine that focuses on the work that is now being done at our Institute and how it may have an impact on the future. Our goal is to expand the horizons of both knowledge and innovation, and we are confident that our researchers will be able to accomplish this task.

By encouraging teamwork and open communication, we will be able to make progress in these areas. Our researchers will collaborate with industrial partners, government organisations, and other academic institutions to develop new technologies and solutions, share their findings, and disseminate their findings.

Our studies will ultimately result in scientific discoveries and technological advancements that are beneficial to society, and we intend to share these with anybody who could make use of them.

In closing, please accept my warmest regards for our researchers and partners. We are grateful for all the hard work and dedication you have shown in making our Institute a pioneer in research. Together, we can accomplish incredible things.

Dr. Manoj Goel

Joint Director KIET

KIET Group of Institutions

Delhi-NCR, Ghaziabad

Message from Editor-In-Chief



Dear Colleagues and Friends,

As Dean of Research and Development KIET, I am honoured to share the latest research and development activities with you. Our dedicated team of researchers, students, and faculties continue to progress significantly in various fields, from basic science to applied technology.

One of our major achievements this year has been the development of a new treatment for a rare genetic disorder. Our team discovered a novel therapeutic approach that has shown promising results in preclinical trials. We are now working to bring this treatment to the clinic and help patients suffering from this debilitating condition. It is a true example of how our research is not just limited to the lab but also can potentially make a real-world impact.

Another area where we have made significant progress is in the field of renewable energy. Our researchers have developed a new type of solar cell that has the potential to increase the efficiency and cost-effectiveness of solar energy significantly. This technology has already attracted the attention of several major companies, and we are currently transferring it to the industry for further development. It not only helps in protecting the environment but also in creating new job opportunities and economic growth. In addition to these specific achievements, KIET has progressed in several other areas. Our researchers have published numerous articles in top-tier journals, presented their work at international conferences, and received numerous grants and awards. It can showcase the quality of our research and our team's dedication and hard work. In addition to our ongoing research activities, we have also launched several new initiatives to support and promote research at our institute. We have also created a new seed funding program to support innovative and high-risk research projects that have the potential to make a significant impact. These initiatives help our researchers not just conduct research but also in developing their skills and knowledge.

I would also like to take this opportunity to express my gratitude to our researchers, scientists, engineers, and staff, who have worked tirelessly to make our institute a leader in research and development. Their dedication, passion, and hard work have been instrumental in our achievements, progress, and initiatives. I also want to thank our funding partners, collaborators, and supporters for their ongoing support and contribution.

Lastly, I would like to extend my best wishes and blessings to all of you, your families, and your friends. May the upcoming year be prosperous, happy, and in good health. With our collective efforts, we will be able to continue making a positive impact on the world through our research and development activities.

Dr. Vibhav Kumar Sachan

Dean (Research and Development)

KIET Group of Institutions

Delhi-NCR, Ghaziabad

Foreword



Academic research and development related to the scientific inquiry and experimentation undertaken by colleges, universities, and other higher education institutions. This research and development aim to further knowledge in a certain subject. Natural sciences, social sciences, and humanities are subjects in which academic academics can engage in research. Academic research and development aim to add to the corpus of knowledge and educate the next generation of scholars. Today, academic research collaboration may be done by bringing scholars from many institutions, fields, and nations to collaborate towards a single aim. Collaboration can take numerous forms, including co-authoring research articles, submitting joint funding applications, and conducting interdisciplinary research initiatives. Collaboration may give researchers access to new resources, such as specialized equipment or data sets, and the opportunity to share knowledge and get fresh views on a research subject. Collaboration also boosts the impact and exposure of research by enabling academics to reach new audiences and get acknowledgement for their work. In this sequence, research magazines play a significant role in academic research and development by providing a forum for scholars to disseminate their results to a larger audience. These periodicals focus on specialized disciplines of study, such as fundamental engineering, computer science, mathematics, and physics, and publish articles authored by subject matter experts. Technical journals may be an essential source of knowledge for researchers, presenting them with the most recent advancements and trends in their area. These publications can also act as a method for researchers to gain feedback from their peers. These periodicals are also excellent resources for students and scholars interested in recent advancements in their respective fields of study.

According to the above-mentioned factors, the publication "KIET Research Magazine" is being produced. It is envisaged that after reading this Magazine, a student or researcher will be aware of current research in his/her relevant subject and be able to identify a suitable partner if necessary. Most of the Magazine's material is drawn from KIET's research and development efforts.

The publication has endeavoured to provide as many study results as feasible while prioritizing reporting clarity. This publication is to report on KIET's research and endeavours, therefore increasing the global exposure of KIET's work. We are grateful to our colleagues for allowing us to present the mentioned research activity and their results in this publication. As appropriate, the names of each of these fellows are included in various sections of the Magazine.

We are deeply grateful to the Institute's Management, Director, Joint Director, Dean R&D, Heads, and all the associates for their support, blessings, and cooperation in publishing this multidisciplinary research magazine "अनुसंधान".

Dr. Brijesh Singh

Editor

KIET Group of Institutions

Delhi-NCR, Ghaziabad

Foreword



“Sharing knowledge is a charity of knowledge that constitutes the ways of a beautiful life” – Ehsan Sehgal

To enhance the beauty of the research domain, the KIET research magazine plays a vital role through the knowledge sharing of different domains, which may enhance the quality of research at inter and intra-departmental scales in the KIET Group of institutions. The awareness and acknowledgment of the outer niche may enhance the collaborative research among the various disciplines like environment, sustainability, energy, chemistry, modelling, mechanical, management, pharmacy, etc. This initiation is also likely to give positive outcomes in collaborative research publications, joint project submissions, joint work on patents, technical bulletins, etc. The holistic growth in the social, economic, and ecological pillars of society may be achieved through sharing of the scientific research and incorporation of the same. It gives us great pleasure to introduce this supplement dedicated to research upgrowth, as filling such gaps may lead to a paradigm shift in research networking and upliftment in the research domain.

We heartily thank our management, the Director, the Joint Director, the Dean of R&D, and the entire KIET family for their unconditional guidance and support.

Dr. Minakshi Karwal

Associate Editor

KIET Group of Institutions

Delhi-NCR, Ghaziabad



“Research is something that everyone can do, and everyone ought to do. It is simply collecting information and thinking systematically about it” - Raewyn Connell

The KIET research magazine contributes significantly to inspiring young researchers to augment knowledge and innovation. The magazine also disseminates awareness about technical innovation in the field of science, technology, and management to faculty and students.

The highlights of the notable research activities conducted by our institute over the past month are included in this magazine issue. This would help the research activities to get a better reach and new dimensions in terms of collaborative publications, research articles, project proposal submissions, patent filing, etc.

To achieve the goal of the KIET Institute to observe the year 2023 as an innovation and start-up year, we are confident that KIET Research Magazine will continue to contribute significantly to the inner and outer specialization for greater scientific research and innovation.

We would like to extend our deepest gratitude to the Research and Development Team of the KIET Group of Institutions for their tireless work in ensuring the success of all research initiatives.

We are extremely grateful to the leadership of the KIET Group of Institutions, the Director, the Joint Director, the Dean of R&D, and the entire KIET family for their generous support and leadership over the years.

Dr. Himanshu Chaudhary

Associate Editor

KIET Group of Institutions

Delhi-NCR, Ghaziabad

Overview of the Research and Development

Rapid growth in scientific knowledge is an indication of the quest for discovery and has a substantial impact on economic and societal development. Science, technology, and innovation are often initiated in an Institution's research environment. Research and developmental activities create and disseminate new knowledge in different fields, promote innovation, and motivate better learning and teaching among faculty members and students at our Institute, as these are often incorporated into the courses. Research is the foundation of knowledge that brings new energy builds state-of-the-art facilities, promotes research publications, develops collaborations, and becomes part of an active community that shares common objectives. Moreover, there is good evidence that research supports and improves teaching and helps to build excellence in this dimension as well. Research can have salutary effects on faculty members, on the nature of their teaching, and the undergraduate and postgraduate students.

Evidence is accumulating that students do benefit in significant ways from having researchers as instructors if, the institution balances resources spent, and rewards assigned between research and teaching. This positive view, which has been consistently detected in recent studies, sees the benefits of 'research-led teaching.' In this approach, the experience of the researcher is integrated into teaching.

Vision

To achieve excellence in research and create an outstanding climate of support for researchers, broadly enabling research advances to meet National and International needs.

Mission

- ❖ To motivate faculty members to concentrate on research-related activities, in addition to teaching, to publish research articles in reputed journals.
- ❖ To pursue efforts to write books and monographs for publication by – International and National publishers of repute.
- ❖ To evince interest among the faculty members so that they take efforts to establish collaborative research projects with their counterparts in reputed National and International Universities.
- ❖ To encourage faculty members to submit proposals and secure funded research projects from various funding agencies in India and Abroad.
- ❖ To undertake consultancy projects sponsored by the Government as well as Private, Industrial, and other organizations.

Contact

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Department of Electronics & Communication Engineering

KIET Group of Institutions, Delhi-NCR, Ghaziabad, Uttar Pradesh, India-201206

e-mail: dean_rnd_office@kiet.edu, Contact No. +919718907912 (O)

Glimpses of Month



The Department of Computer Applications (MCA) wants to thank everyone who attended our expert session on "Current Trends in AR/VR" on April 29, 2023.

It was an amazing experience to have Dr. Sushil Chandra, Scientist G, INMAS, DRDO, as our esteemed speaker, sharing his insights on the latest trends and developments in AR/VR technology.

Dr. Sushil Chandra highlighted the exciting applications of AR/VR in various industries, including healthcare, education, and gaming, and the advancements in the hardware and software of AR/VR technology. The attendees had a chance to interact with Dr. Chandra and discuss their thoughts and queries.



On April 28th, 2023, the inaugural ceremony of the Book Exhibition organized by KIET-Knowledge Resource Centre was held. The event was inaugurated by Mr. Alexander Hogevee Rutter as the chief guest, along with other dignitaries, including Dr. (Col) A Garg, Director, and Dr. Manoj Goel, Joint Director of KIET Group of Institutions, Ghaziabad.

During the Book Exhibition, more than 20 reputed publishers/vendors such as Pearson, Wiley, McGraw Hill, New Age, BPB, S Chand, CBS, Nirali, BSP, MadeEasy, Khanna, etc., displayed a large number of titles in the fields of Computers, Engineering, Emerging Technologies, Application-based subjects, Management, Pharmacy, Applied Sciences, Humanities, Competitive exam books (such as GATE, PSUs, CAT, SAT, GRE, GMAT, UPSC, SSC, ESE, etc.), Motivational books, Novels, etc.



KIET Group of Institutions in association with the Institute Innovation Council has organized a One-day workshop on “GRANT & COMMERCIALIZATION OF PATENTS”, to celebrate the occasion of World Intellectual Property Day on 29-04-2023. The eminent Speaker for the workshop was Dr. Vinay Mehta (CEO and Co-founder PoleVault Technologies Pvt. Ltd).

Department of Electrical and Electronics Engineering
Distinguished Lecturer Series 2023

Mr. Imaed Abedin Ingelmo
 Founder DXMID (Pvt) Ltd., Spain
 (30th March 2023)

Congratulations! You have been selected for Project Buddy

Ritika Yadav (2000294210113)	Gautam Pegwel (2000294210059)	Gritica Pandey (2000294210056)	Mahesh Kumar Gauram (2000294210049)	Priyanshu (2000294210048)

Department of Electrical and Electronics Engineering
Distinguished Lecturer Series 2023

Mr. Marco Maréchal
 Programmanager Mobility Vision 2040
 North Holland, Netherland
 (30th March 2023)

Congratulations! You have been selected for Project Buddy

Harish Chandra Patel (2000294210087)	Pankaj Varma (2000294210082)	Anukriti Anuja (2000294210081)	Akshay Aggarwal (2000294210080)	Abhinav Srivastava (2000294210085)

Department of Electrical and Electronics Engineering
Distinguished Lecturer Series 2023

Dr. Hemant Misra
 Vice President,
 Swiggy India, Bengaluru
 (30th March 2023)

Congratulations! You have been selected for Project Buddy

Priya Gaur (2000290210102)
 Mayank Sharma (2000290210086)
 Malvika Sharma (2000290210086)
 Prince Nehra (2000290210101)
 Ishita Singh (2000290210089)

Distinguished Lecture Series 2022-23 Session: Department of Electrical and Electronics Engineering

On March 30th, 2023, the Department of Electrical and Electronics Engineering organized an informative and interactive session featuring world-renowned personalities: Dr. Hemant Misra (Vice President, Swiggy India, Bengaluru), Mr. Marco Maréchal (Program Manager, Mobility Vision 2040, North Holland, Netherlands), and Mr. Ismael Abedin Ingelmo (Founder, DXMID (Pvt) Ltd., Spain).

The thought-provoking sessions delivered by these vibrant speakers were a great source of long-term motivation and guidance for our budding engineers.







Dean R&D office organized an Interaction session on “R&D Project Proposal writing and Funding Opportunities”. The esteemed guest for the session is Dr. V K Jain-Formerly Director, of Amity University, Noida. Dr. V K Jain is presently working as a Distinguished Scientist & Professor at Amity Institute of Advanced Research and Studies (Materials & Devices) & Amity Institute of Renewable and Alternative Energy, Amity University, Noida.

Statistics of KIET Research and Development Activities

Rankings & Accreditations

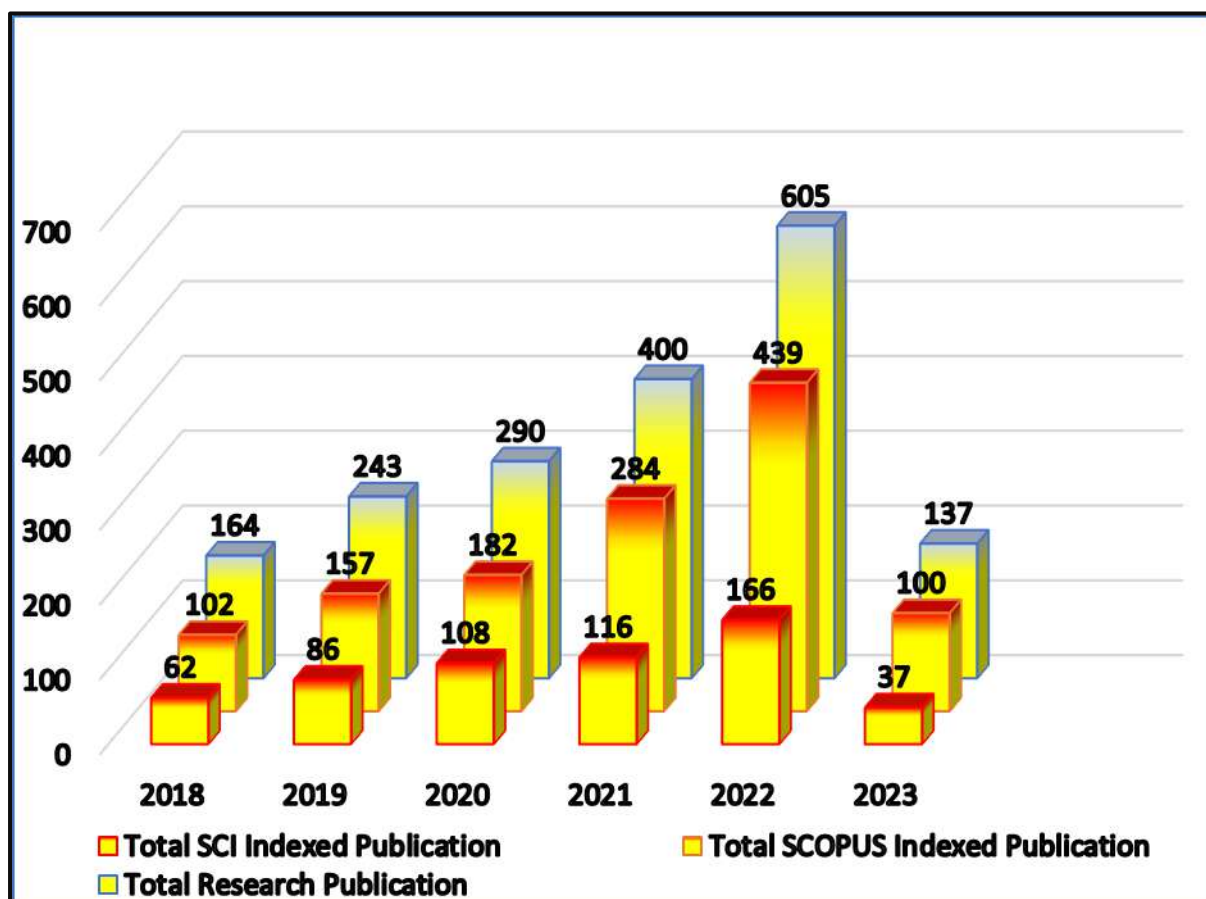
- NAAC - Grade 'A+' (Cycle 2 Assessment) - Accredited for 5 years till 03 Jan 2027.
- NIRF 2022 (Pharmacy – Rank 97 & Engineering - Rank 187).
- ARIIA 2021 – 3rd Rank in the category “Private Institutions (Technical)”.
- QS-IGAUGE - ‘Diamond’ College Rating (till Feb 2024) & ‘Institution of Happiness’ Award.
- Innovation Hub, AKTU – Hon’ble VC AKTU Appointed KIET as Nodal Regional Centre
- NBA Accreditation - All eligible programs are NBA accredited.
- KIET Group of Institutions, Delhi-NCR, Ghaziabad (UP) recognized by the Scientific and Industrial Research Organization (SIROs) under Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Government of India. (Till 31 Mar 2025)

 <p>सूचना का अधिकार RIGHT TO INFORMATION</p>	<p>दूरभाष/TEL : 26962819, 26567373 (EPABX) : 26565894, 26562133 : 26565887, 26562144 : 26562134, 26562122 फैक्स/FAX : 26960629, 26529745 Website : http://www.dsir.gov.in (आयुर्विज्ञान 9001:2008 प्रमाणित विभाग) (AN ISO 9001:2008 CERTIFIED DEPARTMENT)</p>	 <p>सत्यमेव जयते</p>	<p>भारत सरकार विज्ञान और प्रौद्योगिकी मंत्रालय वैज्ञानिक और औद्योगिक अनुसंधान विभाग टेक्नोलॉजी भवन, नया महरौली मार्ग, नई दिल्ली - 110016 GOVERNMENT OF INDIA MINISTRY OF SCIENCE AND TECHNOLOGY Department of Scientific and Industrial Research Technology Bhavan, New Mehrauli Road, New Delhi - 110016</p>
			
F.No. 11/791/2018-TU-V		Date: 28 th April 2022	
<p>The Vice Chairman Krishna Charitable Society, 13 KM Stone, Ghaziabad-Meerut Road, Ghaziabad – 201206, Uttar Pradesh</p>			
<p>Subject: Renewal of Recognition of Scientific and Industrial Research Organisations (SIROs).</p>			
<p>Dear Sir,</p>			
<p>This has reference to your application for renewal of recognition of Krishna Charitable Society, Ghaziabad, Uttar Pradesh as a Scientific and Industrial Research Organisation (SIRO) by the Department of Scientific and Industrial Research under the Scheme on Recognition of Scientific and Industrial Research Organisations (SIROs), 1988.</p>			
<p>2. This is to inform you that it has been decided to accord renewal of recognition to Krishna Charitable Society, Ghaziabad, Uttar Pradesh from 01.04.2022 to 31.03.2025. The recognition is subject to terms and conditions mentioned overleaf.</p>			
<p>3. Receipt of this letter may kindly be acknowledged.</p>			
<p>Yours faithfully,  (Dr. P.K. Dutta) Scientist - 'F'</p>			

KIET Research Credentials

Total 556 SCI Research Publications and 1215 Scopus Indexed Research Publications with affiliation of KIET Group of Institutions, Delhi-NCR, Ghaziabad are listed in Web of Science and in Scopus Database till March 2023.

Year	Total Number of SCI Indexed Publications	Total Number of SCOPUS Indexed Publications	Total Number of Research Publications
2018	62	102	164
2019	86	157	243
2020	108	182	290
2021	116	284	400
2022	166	439	605
2023	37	100	137
Total	566	1241	1839



Category	Number of Publication for April 2023
SCOPUS Publications	26
Web of Science Publication	10

Details of Patents Published/Granted

Title of the Invention: IoT Based Gadgets Empowered with Novel System and Methods for Health Monitoring

Application Number: 202311016325 A (Indian Patent Office)

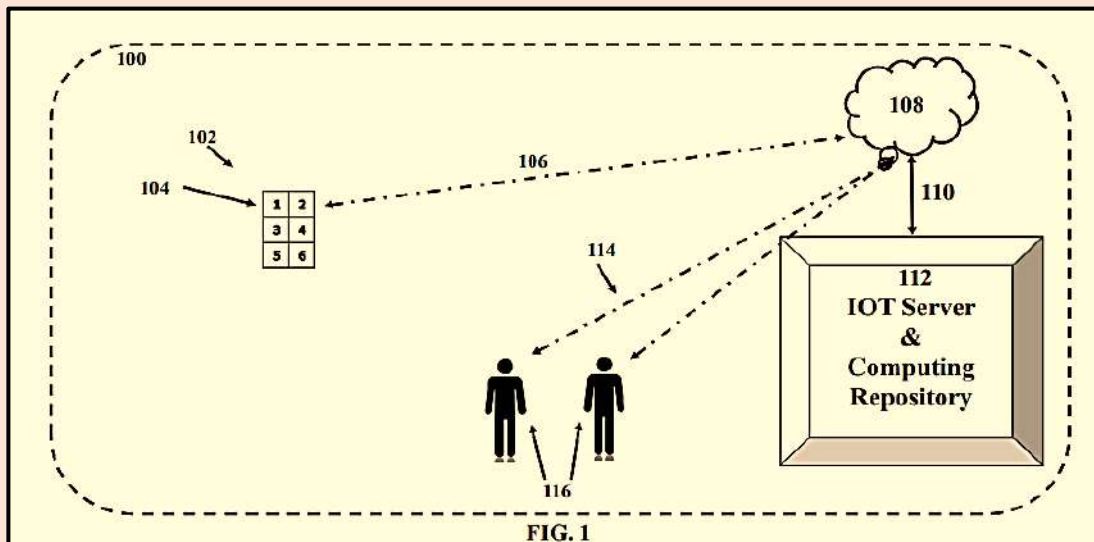
Applicant(S): Mr. Aditya Dev Mishra and team

Date of Filing: 11-03-2023

Date of Publishing: 07-04-2023

Field of the Invention: The current invention has something to do with wearable sensors and electronic integrated circuits. The method and system collect the data values, and the server-side IOT calculation is carried out.

Objects of the Invention: One goal of the disclosure is to utilise wearables to become aware of one's body's activity. The purpose of the present disclosure is to get awareness of the body's actions through wearables. A goal of the current disclosure is to assist in notifying the patient's relatives and doctors about his or her health status at regular intervals. The current invention proposes and discusses a system and method for health monitoring through wearables utilizing IoT. The proposed system additionally employs machine learning methods to detect anomalous sensor-based activity. The algorithm generates the outcome, which will be regularly communicated to family members and physicians.



The example architecture of a user health monitoring system is seen in FIG. 1 in accordance with an embodiment of the present disclosure.

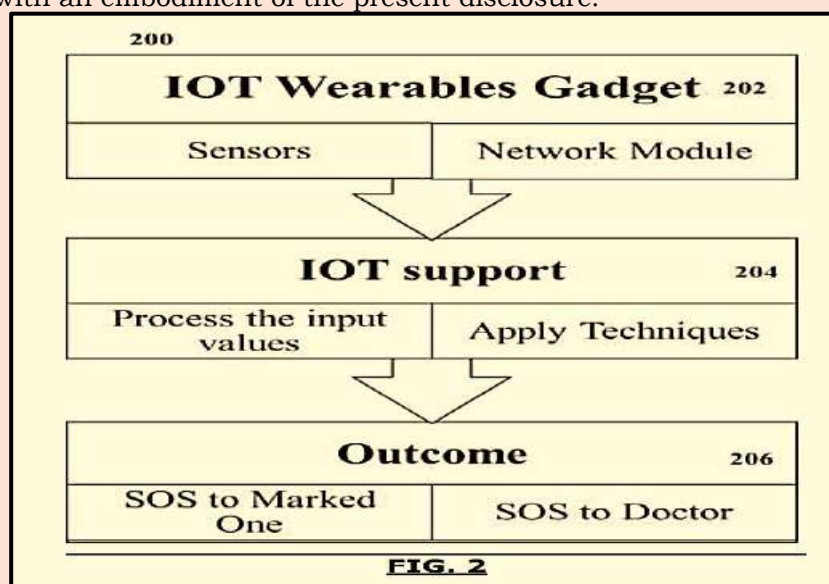


FIG. 2 depicts illustrative procedures to get the input data from the sensors and determine the user's health state. In addition, the notification settings and processed output are shown in accordance with implementations of the present disclosure.

Title of the Invention: HITS (Hall Infra Turbine System) for Measuring Fuel

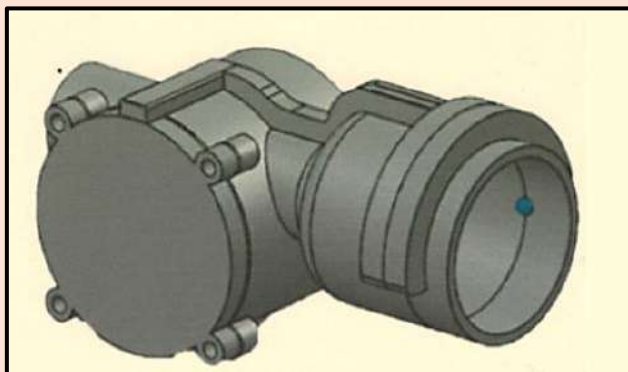
Design Application Number: 362656-001 (Indian Patent Office)

Applicant(S): Dr. Parvin Kumar Kaushik and team (KIET Group of Institutions)

Date of Filing: 17-04-2022

Date of Publishing: 14-04-2023

Class: 10-04-OTHER MEASURING INSTRUMENTS, APPARATUS AND DEVICES



Title of the Invention: Sheet and Tube-based Hybrid Photovoltaic Thermal System

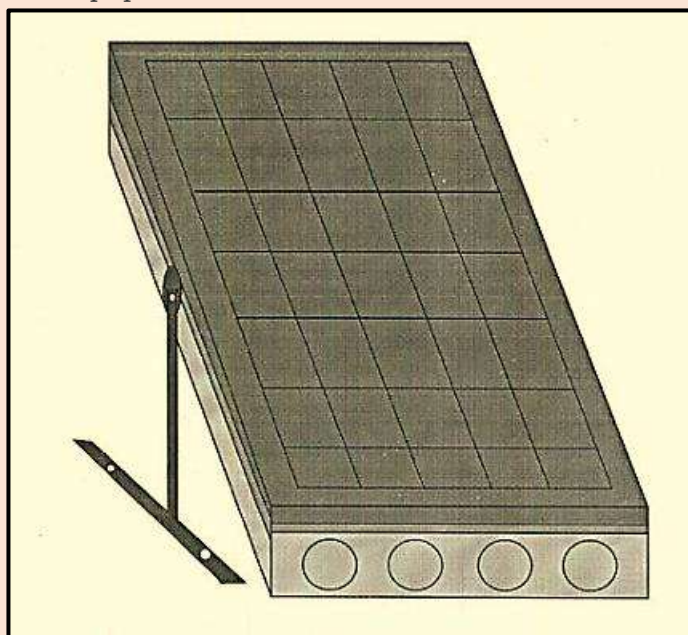
Design Application Number: 367354-001 (Indian Patent Office)

Applicant(S): Dr. Sourav Diwania and team (KIET Group of Institutions)

Date of Filing: 06-07-2022

Date of Publishing: 21-04-2023

Class: 13-04-Solar Equipment



Title of the Invention: Mobile agitator vessel for pharmaceutical and chemical industries

Design Application Number: 377758-001 (Indian Patent Office)

Applicant(S): Prof. Dr. N.G. Raghavendra Rao and team (KIET Group of Institutions)

Date of Filing: 21-01-2023

Date of Publishing: 17-03-2023

Class: 15-99-MISCELLANEOUS



PATENTS Published - April 2023

S. No.	Title Of Patent	Dept.	Name Of Applicant	Date Of Publication	Status
1.	Iot Based Gadgets Empowered With Novel System And Methods for Health Monitoring	CS	Aditya Dev Mishra ,Dharmendra Kumar, Anurag Mishra, Harsh Khatter, Sherish Johri	07.04.2023	Registration of Design
2.	Hits (Hall Infra Turbine System) for Measuring Fuel	ECE	Dr. Parvin Kumar, Priyank Garg, Dr.Parul Grover, Sachin Tyagi	14.04.2023	Registration of Design
3.	Sheet And Tube-Based Hybrid Photovoltaic Thermal System	EE	Dr. Sourav Diwania,	21.04.2023	Registration of Design
4.	A Handheld Medical Test Device	IT	Charu Awasthi	28.04.2023	Registration of Design
5.	Iot-Based Smart Traffic Light Time Optimization System	CS	Gaurav Dubey, Mr. Abhishek Goyal	05.05.2023	Published
6.	Distribution Transformer Fuse Failure Detection And Information Passing System	EE	Dr. Rahat Ullah Khan	05.05.2023	Published

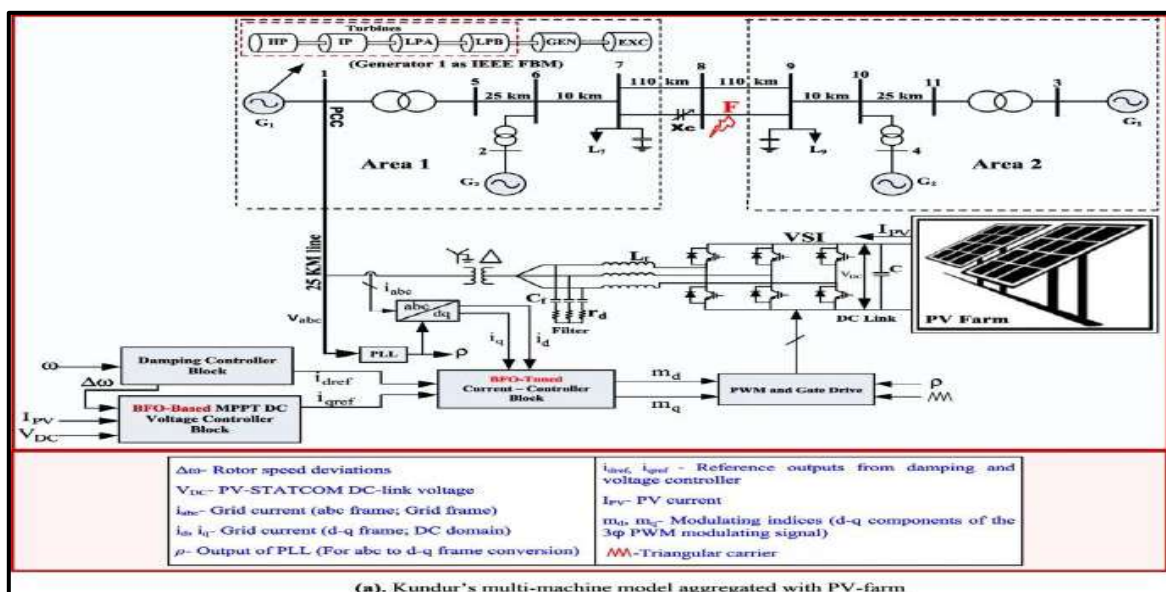
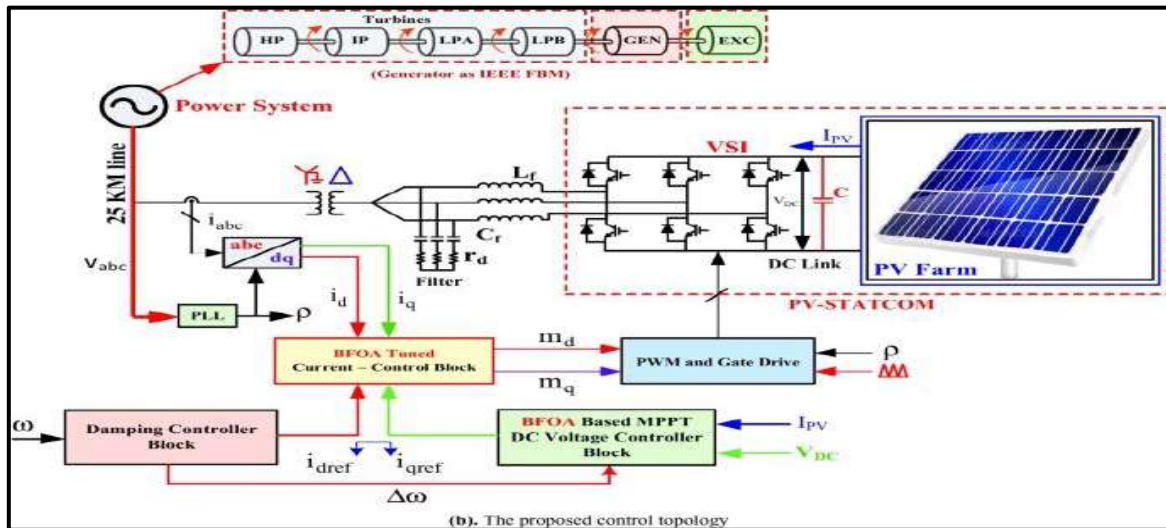
Details of the Outstanding Journal Articles

S. No.	Name of Faculty	Designation	Deptt.	Title of Paper	Name of Journal	Impact Factor/Cite Score	Index in Journal
1.	Dr. Sheetal and Dr. Rajeev Kumar	Assistant Professor	EE	Solar-PV inverter for the overall stability of power systems with intelligent MPPT control of DC-link capacitor voltage	Protection and Control of Modern Power System, Springer	10.50	SCI
2.	Dr. Kunal Bisht	Assistant Professor	CE	Valorization of lead and zinc slags for the production of construction materials - A review for future research direction	Construction and Building Materials, Elsevier	7.693	SCI
3.	Dr. Kunal Bisht	Assistant Professor	CE	Study on the utilization of red mud (bauxite waste) as a supplementary cementitious material: Pathway to attaining sustainable development goals	Construction and Building Materials, Elsevier	7.693	SCI

Highlights of the Outstanding Journal Articles

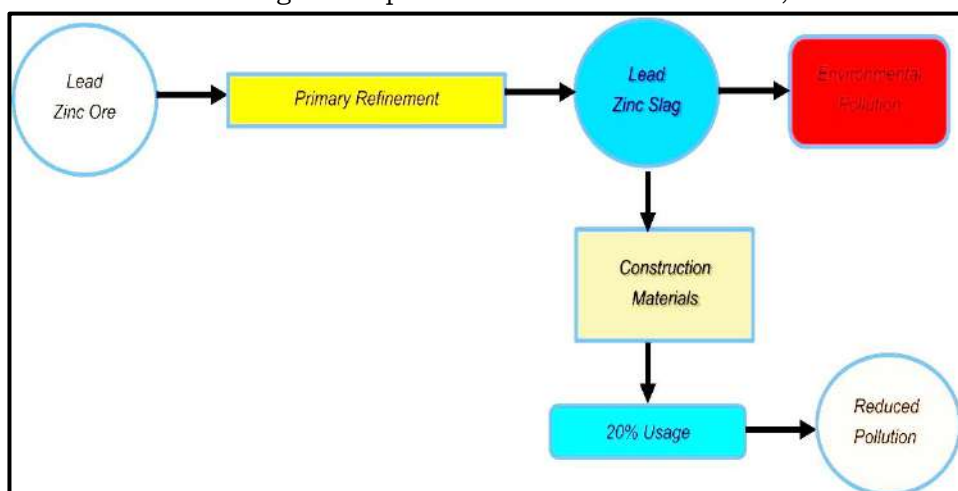
1. Singh, S., Saini, S., Gupta, S.K. et al. Solar-PV inverter for the overall stability of power systems with intelligent MPPT control of DC-link capacitor voltage. *Prot Control Mod Power System* 8, 15 (2023). <https://doi.org/10.1186/s41601-023-00285-y>

This paper demonstrates the controlling abilities of a large PV farm as a Solar-PV inverter for mitigating the chaotic electrical, electromechanical, and torsional oscillations including Sub synchronous resonance in a turbogenerator-based power system. The oscillations include deviations in the machine speed, rotor angle, voltage fluctuations (leading to voltage collapse), and torsional modes. During the night with no solar power generation, the PV-plant switches to PV-STATCOM mode and works as a Solar-PV inverter at its full capacity to attenuate the oscillations. During full sun in the daytime, on any fault detection, the PV-plant responds instantly and stops generating power to work as a Solar-PV inverter. The PV-farm operates in the same mode until the oscillations are fully alleviated. This paper manifests the control of the DC-link capacitor voltage of the Solar-PV inverter with a bacterial foraging optimization-based intelligent maximum power point tracking controller for the optimal control of active and reactive power. Kundur's multi-machine model aggregated with PV-plant is modeled in the Matlab/Simulink environment to examine the rotor swing deviations with associated shaft segments. The results for different test cases of interest demonstrate the positive outcomes of deploying large PV-farms as a smart PV-STATCOM for controlling power system oscillations.



2. **Yasaswini Yadav Kanneboina, Jothi Saravanan, K.L. Syed Ahmed Kabeer, Kunal Bisht, "Valorization of lead and zinc slags for the production of construction materials A review for future research direction", Constructions and Building Materials, Elsevier, Vol. 36, 130314, February 2023.**

Expansion of the construction sector is leading to the exploitation of natural resources, and the development of industries is leading to the production of industrial waste, like lead-zinc slag, in large amounts, which is causing disposal problems and contaminating soils, sediments, surface, and groundwater. Lead-zinc slag is a by-product produced during the smelting of Pb and Zn from their ores. This



review study is conducted to evaluate the performance of using different types of lead-zinc slag as a construction material which addresses the problem of leaching and the conservation of natural resources. In this context, fresh, hardened, durability, and radiological properties of various mixes of mortar, concrete, geopolymer, alkali-activated material (AAM), and brick discussed in different review papers were studied to estimate the potential use of the lead-zinc slag as a construction material. The results indicated the satisfactory performance of these mixes as a building material. The results revealed that the lead-zinc slag could be used in mortar and concrete mixes for up to 50% replacements from the mechanical properties perspective. Lead-zinc slag can improve the durability and radiological properties of mortar and concrete mixes even for higher replacements and durability properties of SCC mixes for replacements up to 25%. Leaching, a major problem due to the dumping of lead-zinc slag, is effectively controlled when used to prepare mortar, concrete, geopolymer, and AAM. These observations indicate that using lead-zinc slag as a construction material can reduce the disposal problem and conserve natural resources leading to environmental sustainability.

4. Jeetika Patangia, T. Jothi Saravanan, K.I. Syed Ahmed Kabeer, Kunal Bisht, "Study on the utilization of red mud (bauxite waste) as a supplementary cementitious material: Pathway to attaining sustainable development goals", Construction and Building Materials, Elsevier, Volume 375, 2023, 131005, ISSN 0950-0618, <https://doi.org/10.1016/j.conbuildmat.2023.131005>.

Concrete is the second most consumed material on our planet. However, traditional concrete production releases much CO₂ and is not eco-friendly. Cement, one of the prime concrete-making materials, is manufactured using an energy-intense process and is not eco-friendly. Researchers have been investigating using certain materials to replace cement in concrete, retaining its strength simultaneously. Red Mud (RM) is a waste the alumina industry generates, and its disposal is a huge challenge. It consumes a lot of space, and its high alkali content makes it unsafe for the environment. Several types of research are being carried out to find how RM can effectively alleviate the use of ordinary Portland cement (OPC) in concrete, thus providing a greener construction material. This review highlights the effect of using RM in varying proportions on the fresh, mechanical, thermal, durability, and microstructural properties of cementitious materials. Using RM up to certain levels positively impacts the compressive strength of the mixes. The durability properties, such as the resistance to chloride migration, freezing-thawing action, and alkali-silica reactions, also improve using RM. The microstructural studies reveal the formation of a higher amount of hydration products and densification of the matrix upon RM addition. In terms of the leaching characteristics, RM has a good potential to stabilize and solidify heavy metals, majorly cadmium. The review has calculated and summarized the overall environmental, mechanical, and economic performance. This review shows that RM can effectively replace around 10–20% of cement, where the replacement levels also depend on the RM source.

Details of Research Incentives for Journals

S. No.	Name of Faculty	Designation	Dept.	Title of Paper and Name of Journal	Impact Factor/Cite Score	Benefits/Incentives	Index in Journal
1.	Ms. Anushka Tyagi (Student)	Student of M.Pharm	KSOP	An Investigation of Silver Nanoparticles with Its Toxicological Effects and Applications <i>International Journal of Survey in Fisheries Sciences.</i>	-	2000	Scopus

2.	Dr. Gaurav Dubey	Professor	CS	Drug review sentimental analysis based on modular lexicon generation and a fusion of bidirectional threshold weighted mapping CNN-RNN Concurrency Computation Practice and Experience	-	11000	SCIE
3.	Dr. Monika Kaurav	Assistant Prof.	KSOP	Dendrimer An update on recent developments and future opportunities for the brain tumour diagnosis and treatment Frontiers in Pharmacology	5.98	15000	SCIE
4.	Dr. Varun Gupta	Associate Prof.	EN	Wavelet Transform and vector machines as emerging tools for computational medicine. Ambient Intelligence and Humanized Computing	9.4	5000	Scopus
5.	Dr. Sachin Kumar Tyagi	Assistant Prof.	ECE	Performance Analysis of Dual-Parallel/ Dual-Electrode Mach-Zehender Modulator-Based-Radio-Over-Fiber System Against Third-Order Intermodulation Errors. Internation Journal "Journal Telecommunication & Radio Engineering	1.5	3000	Scopus

Highlights of the Published Journal Articles

1. **Anushka Tyagi, N.G. Raghavendra Rao, Deepak Yadav, Kunal Kanojia, "An Investigation Of Silver Nanoparticles With Its Toxicological Effects And Applications", Vol. 10, No. 4S, Special Issue 4, 2023. DOI: [10.17762/sfs.v10i4S.898](https://doi.org/10.17762/sfs.v10i4S.898)**

Researchers have been studying nano-particles of silver due to their characteristic attributes (e.g., size, shape, bactericidal, and electrical characteristics). Nano-particles of silver are one of the most important and fascinating nanoscale elements among the many nano-particles used for biological purposes. Nanoscience and nanotechnology, especially in biomedicine, rely heavily on nanoparticles of silver. The physical, chemical and biological production of silver nanoparticles is discussed in this paper. Majorly focusing on biological methods, as they are environmentally friendly and less toxic. We have discussed the characteristics of silver nanoparticles and various techniques for determining their qualities, concluding with their

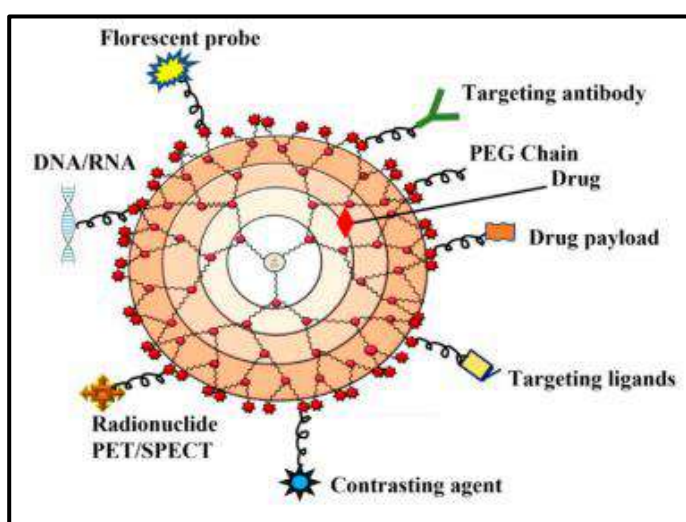
application in various fields. As a result, the main purpose of this review article is to focus on the current condition and potential.

2. Gaurav Dubey, Harivans Pratap Singh, Kavita Sheoran, Geetika Dhand, Pooja Malik, “Drug review sentimental analysis based on modular lexicon generation and a fusion of bidirectional threshold weighted mapping CNN-RNN”, *Concurrency and Computation, Wiley, Vol. 35, Issue 3, December 2022, DOI: [10.1002/cpe.7512](https://doi.org/10.1002/cpe.7512)*

In drug review sentimental analysis (SA), users can share their experiences after consuming the drugs, which provides an accurate decision about the safety of the drug and public health. Patient-written medical and healthcare reviews are among the most valuable and informative textual content on social media, but researchers in the areas of natural language processing (NLP) and data mining have not researched them thoroughly. These reviews provide insight into patients' interactions with doctors, treatment, and satisfaction or dissatisfaction with health services. The existing approaches have some problems like exploding/vanishing gradients and do not have sequential modeling. When learning long reviews, exploding and vanishing gradient problems occurs. This problem makes it hard to tune parameters and learn in the network. The existing methods do not have sequential modeling because they fail to extract long dependencies for long reviews in both backward and forward directions. To overcome these issues, we proposed a Modular Lexicon Generation and a Fusion of Bidirectional threshold weighted mapping CNN-RNN (MLBTWCR) for classifying drug reviews based on users' opinions. The Aspect based Modular Lexicon generation using the Advanced Dragon Fly Algorithm (AMLDA) is used to generate the score values for the lexicon and labels based on the aspect. The Bidirectional Dropout Long and Short-Term Memory (Bi-DLSTM) and Bidirectional Gated Recurrent Unit (Bi-GRU) are used for extracting long dependencies and for performing the sequence of arbitrary length in both backward and forward directions. The experimental results are evaluated using Drugslib.com and Drugs.com datasets. Based on the evaluation result, the proposed MLBTWCR gives an accuracy of 93.02%, recall of 88.72%, error rate of 11.2, false positive rate (FPR) of 11.3, false negative rate (FNR) of 13.6, the running time of 15 s, and convergence speed of 0.2 and F-measure of 92.64%. Hence, our method performs well for the drug review classification based on aspects.

3. Monika Kaurav, Sakina Ruhi et. al., “Dendrimer An update on recent developments and future opportunities for the brain tumour diagnosis and treatment”, *Frontier in Pharmacology, Vol. 14, April 2023.*

A brain tumor is an uncontrolled cell proliferation, a mass of tissue composed of cells that grow and divide abnormally and appear to be uncontrollable by the processes that normally control normal cells. Approximately 25,690 primary malignant brain tumors are discovered each year, 70% of which originate in glial cells. It has been observed that the blood-brain barrier (BBB) limits the distribution of drugs into the tumour environment, which complicates the oncological therapy of malignant brain tumours. Numerous studies have found that

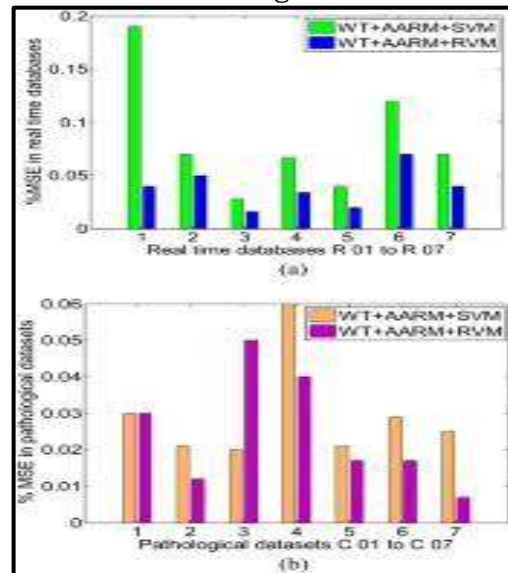


nanocarriers have demonstrated significant therapeutic efficacy in brain diseases. This review, based on a non-systematic search of the existing literature, provides an update on the existing knowledge of the types of dendrimers, synthesis methods, and mechanisms of action in relation to brain tumours. It also discusses the use of dendrimers in the diagnosis and treatment of brain tumours and the future possibilities of dendrimers. Dendrimers are of particular interest in the diagnosis and treatment of brain tumours because they can transport biochemical agents across the BBB to the tumour and into the brain after systemic administration. Dendrimers are being used to develop novel therapeutics such as prolonged release of drugs, immunotherapy, and antineoplastic effects. The use of PAMAM, PPI, PLL

and surface engineered dendrimers has proven revolutionary in the effective diagnosis and treatment of brain tumours.

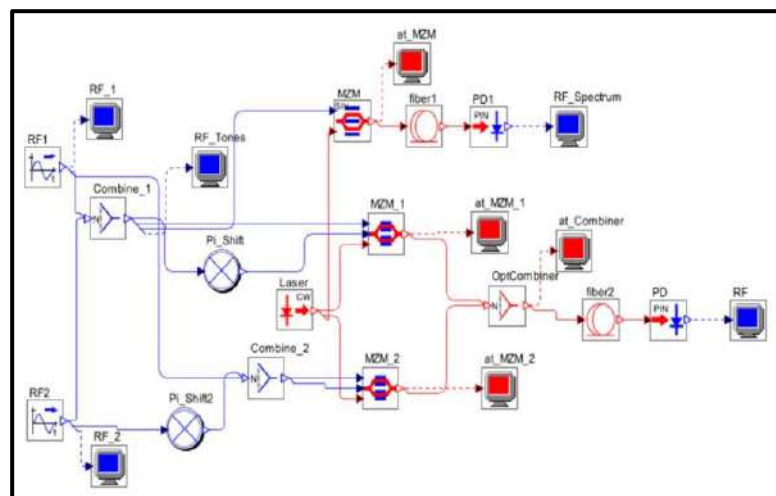
4. Gupta, V. Wavelet transform and vector machines as emerging tools for computational medicine. J Ambient Intelligence Human Computing 14, 4595–4605 (2023). <https://doi.org/10.1007/s12652-023-04582-0>

Electrocardiogram (ECG) is a most primitive and important test to analyze the status of the heart functioning. During this test, different types of noises and artefacts get involved in the captured electrical signal which affects the performance of the overall diagnosis. In general, computer-aided decision system (CADS) performs three operations viz. pre-processing, feature extraction and classification to reach a decision for analyzing an ECG signal. Among three waves of an ECG signal, QRS-complex is to be examined most critically to diagnose the existence of a possible cardiovascular disease. But detection of exact locations of QRS complexes is still a challenging task as they are hidden by various noises and artefacts. Therefore, in this paper emerging tools such as wavelet transform (WT), adaptive autoregressive modelling (AARM) and vector machines (VMs) like support vector machine (SVM) and relevance vector machine (RVM) are proposed to be used for pre-processing, feature extraction and classification, respectively for utilizing distinct advantages of each. For instance, WT provides better time–frequency resolution, AARM possesses parameters that vary with time leading to the measurement of time-varying spectra and VMs models the non-linear data stably. The highlight of the proposed methodology is that it yields consistently high values of all the widely used and critical performance parameters i.e. Se of 99.95%, Pp of 99.95%, Dr of 99.95%, and Acc of 99.93%. These results are highest amongst other techniques existing in the literature, indicating its usefulness for handling real-time heart-related emergent cases.



5. Sachin Kumar Tygai, Praveen Kumar, Poornima Mittal, “Performance Analysis of Dual-Parallel/Dual-Electrode Mach-Zehnder Modulator-Based Radio-Over-Fiber System against Third-Order Intermodulation Errors”, Volume 82, Issue 1, Pp. 65-71, 2023. Doi: 10.1615/Telecomradeng.2022038002

The rapid development in wireless networks required by mobile and broadband users in terms of capacity, data rate, bandwidth, cost effectivity, green communications, proper quality of service, and so on create the need of a robust system against nonlinear errors. In view of this, the performance of a dual-parallel/dual-electrode Mach-Zehnder modulator-based targeted radio-over-fiber (RoF) system for multitone transmission against severe nonlinear errors (i.e., third-order intermodulation) is analyzed. Two-tone radio frequency signals, operating at 9 GHz and 8 GHz, are used in the proposed system. The analytical analysis is confirmed and validated by simulation results using OptSim software. Further, comparative findings are found by considering a conventional Mach-Zehnder modulator-based RoF system. The reduction in the third-order intermodulation errors of 21 dB over a fiber distance of 10 km by the proposed method over a conventional system and the obtained results find the implementation of the proposed method to be a robust wireless network.



Reimbursement of Conference Registration Fee

S. No.	Name of Faculty	Designation	Dept.	Name of Conference	Title of Paper	Benefits/ Incentives	Published By
1	Ms. Sonali Gupta (Student)	Student	CS	Doctoral Symposium on Computational Intelligence (DOSCI 2023) IIT Lucknow	Brain tumor Detection using deep learning techniques based on MRI Images	3525	National Conf.
2	Dr. Surendra Kr Keshari	Asst. Prof.	CS	International Conference	A review of Deterministic and Non-Deterministic Load Balancing Mechanisms in Software Defined Networks	8496	Scopus
3	Dr. Varun Gupta	Assoc. Prof.	EN	International Conference	Adaptive autoregressive modelling-based ECG Signal Analysis for Health Monitoring	6000	Scopus
	Dr. Harsh Vardhan Working	Assistant Prof.		International Conference	AR Museum: A Virtual Museum using Marker less Augmented Reality system for mobile devices	8500	Scopus
	Mr. Umang Rastogi	Assistant Prof.		Jaypee University of Information Tech. Wakhnaghat Solan HP.	Feature Extraction in Arabic Sign Language Using A hand and wrist Localization Techniques	4500	National Conf.

Book Chapter Publication Incentives

S. No.	Name of Faculty	Designation	Dept.	Title of Book/ Chapter/ Monograph	Incentive Amount	Name of Publishing House
1	Dr. Parul Grover	Associate Prof.	KSOP	Plants with Antidengue Properties	2000	International Publisher
	Dr. Richa Goel	Associate Prof.	KSOP	Current Anti-Malarial Treatments: Focus on Artemisia annua Dry Leaf	2000	International Publisher

Reimbursement of FDP/WKSP/QIP/STC Fee

S. No.	Name of Faculty	Designation	Dept.	Title of Book/ Chapter/ Monograph	Incentive Amount	Name of Publishing House
1.	Ms. Ankita Sharma	Asst. Prof	KSOM	Management Development Workshop was organized by Birla Institute of Management Technology, Gr. Noida	5900	Workshop
2.	Dr. Arunima Mishra	Asst. Prof	KSOM	Management Development Workshop was organized by Birla Institute of Management Technology, Gr. Noida	5900	Workshop
3.	Dr. Punjika Rathi	Asst. Prof	KSOM	Management Development Workshop was organized by Birla Institute of Management Technology, Gr. Noida	5900	Workshop

Reimbursement of Ph.D. Registration Fee

Sr. No.	Name of Faculty	Designation	Deptt.	Ph.D. University	Title of Paper (Topic)	Ph.D. Reimbursement Amount
1.	Dr. Surendra Kumar Keshari	Assistant Prof.	IT	AKTU, Lucknow (Part Time)	Enhancing Quality of Services (QOS) in software defined networks through efficient controller placement	75000


Collaborative Research and Development Presentations

Name of Department / School	Name of Presenter	Topic of Presenter	Dated of Presentation
CS	Mr. Rahul Kumar	Deep Learning	29-Apr-23
CSE(AI)/ CSE(AI&ML)	Ms. Veena Parihar	ChatGPT	08-Apr-23
CSE	Swati Sharma	Artificial intelligence in Next Generation Computing	08-Apr-23
CSIT	Ms Kakakshi Gupta	Securing network using light weight cryptography.	08-Apr-23
IT	Prof. Kamal Kant Sharma	Various Security aspects in clouds	29-Apr-23
	Prof. Deepika Kamboj	Graphics Recognition in Documents	
	Prof. Analp Pathak	Opinion Mining using collaborative filtering approach	
	Prof. Mukul Aggarwal	BraTS Dataset Analysis on DiModelst Deep Learning models	
KSOP	Mr Sanjeev Chauhan	Pharmaceutics	08-Apr-23
	Prof Pragati Gupta	Quantitative Structure-Activity Relationship (QSAR) Analysis of 2-Carboxytetrahydroquinolines derived from Kynurenic acid as a Potent Anti-Alzheimer Agents	29-Apr-23
MCA	Dr. Akash Rajak	"PEO-PO Attainment Process" with "Applying and comparing machine learning classification algorithms for predicting the results of students	08-Apr-23
	Ms. Shalika Arora	Outcome based Education	29-Apr-23
	Dr. Amit Kumar	Alzheimer Disease Prediction Using Learning Algorithms	
ME	Dr. Rupesh Chalisgaonkar	3D Printing	08-Apr-23
KSOM	Dr. Mrinal Verma	How to write cases	08-Apr-23
CE	Mr Shubham Kumar	Investigation of the impact of eco-friendly building materials on carbon footprints of affordable housing in the hilly region	08-Apr-23

CRDC Presentation Series

Activity Report April 2023

Collaborative Research and Development (CRD) Presentations 2022-23 (Even)

<p>Presentation Topic</p> <p>Investigation of the impact of eco-friendly building materials on carbon footprints of affordable housing in the hilly region</p>	
<p>Details of Presenter</p> <p>Mr Shubham Kumar, Assistant Professor Department of Civil Engineering Date of Presentation Session: 08-04-2023 Time of Presentation Session: 12:30:00 PM</p>	<p>Scope for Future Research Outcome</p> <p>Research Paper (Journals/ Conferences/ Book Chapters etc.)</p>
<p>About Presentation</p> <p>This case study-based research focuses on identifying and quantifying the carbon emissions of the most used materials for construction in India. A physical model of low-energy affordable houses for hilly regions has been constructed at CBRI Roorkee by replacing the traditionally used building materials with eco-friendly greener materials. The carbon footprints of these eco-friendly materials were calculated using the Process Analysis-LCA technique and then compared with the traditionally used building materials. The initial carbon footprint was estimated to be 4.17 tonnes of CO₂, reduced to 3.95 tonnes, reducing the carbon footprint by 5.3%. Therefore, eco-friendly greener materials can effectively help reduce the carbon footprint of traditionally used building materials in construction.</p>	
<p>About Presenter</p> <p>5+ years of working experience in Industrial Consultancy, Academics & Research work in Civil & Structural Engineering, including design, detailing & health monitoring of RCC & Steel Structures. I always strive to enhance my capabilities by upgrading in software technologies like Tekla Structures, STAAD Pro, Revit, and AutoCAD. I have practical exposure to relevant engineering standards & codes like Structural Eurocodes, EFNARC, American Standards, ASTM and IS codes.</p>	

Presentation Topic: ChatGPT- A revolution in AI

Details of Presenter

Ms Veena Parihar
 Department of CSE (AI) & CSE (AI&ML)
 Date of Presentation Session: 08-04-2023
 Time of Presentation Session: 10:00:00 AM


Scope for Future Research Outcome

Research Paper (Journals/ Conferences/
 Book Chapters etc.)

About Presentation

ChatGPT is a newly launched conversational AI technology launched by OpenAI in 2022. This GPT stands for Generative Pre-trained Transformer. It is a text-based platform where you can give your query as input, and it will provide you with an answer accordingly. To generate responses, ChatGPT uses a multi-layer transformer network, which is a type of deep learning architecture that has proven to be effective at processing natural language. OpenAI emphasized on understanding the context of given text input and generate the responses accordingly. Human speech is variable by nature. So to make the response more human, ChatGPT samples from the high-probability words from its dataset when generating the output. As a result, the model will not always predict the same word each time, adding more diversity and unpredictability to its responses. It has multiple applications such as text generation, text summarization, code generation, error finding, question-answering, data analysis, writing SEO friendly content and many more. This technology can be utilized in different ways for the people of different fields and many use cases of it are still not discovered.



<p>Presentation Topic How to write cases</p>	
<p>Details of Presenter Dr. Mrinal Verma, Associate Professor KSOM Date of Presentation Session: 08-04-2023 Time of Presentation Session: 02:45:00 PM</p>	<p>Scope for Future Research Outcome Research Paper (Journals/ Conferences/ Book Chapters etc.)</p>
<p>About Presentation Case Study/Case Analysis is need of key essential element for Management education. Now a days at KSOM, each faculty is following case approach in their classroom teaching approach. We consult HBR cases of different authors, now this is time when we can also write business cases for such books and present our cases in classes for better teaching-learning environment. In my today's presentation, I discussed about the basics of cases, what are the key elements while writing cases, difference between a case study and case analysis, what should be followed by us and can create a conducive environment for better teaching learning for students. I have discussed the eight essential stages we should follow for case writing, so that the chance to get published in reputed journal gets increased. We may also think of writing our own book on case study as per our specialization/subjects.</p>	
<p>About Presenter Dr. Mrinal Verma is an Associate Professor in the field of Marketing. He is having industry-a academia experience and tries to inculcate experiential learning in the classroom. Before joining KIET in 2009, he has trained more than 5000 employees of different companies including MNCs (at different verticals) on soft skills and behavioural skills. He has published 6 papers Scopus indexed journal, 1 in ABDC, 1 for WHO repository and many in UGC care and peer reviewed journals. His book on Marketing Case study is being acknowledged by students and is available on Amazon. He has 3 Patents in his credential and has worked on 2 funded research projects.</p>	

Efforts in Industry-Academia Relationship

Memorandum of Understanding (MoU) between Space Applications Centre (SAC), Indian Space Research Organization, India, and KIET Group of Institutions, Delhi-NCR, Ghaziabad

KIET Group of Institutions in Ghaziabad has signed a memorandum of understanding (MOU) with the Space Applications Centre (SAC) of the Indian Space Research Organisation (ISRO). The objective of the MOU is to strengthen academic and research interaction between the two organizations. The agreement was signed on April 5, 2023, at SAC, ISRO, Ahmedabad, between Mr. Nilesh M. Desai (Director SAC, ISRO) & Dr. A Garg (Director KIET Group of Institutions, Ghaziabad). Dr. S S Sarkar (Deputy Director SAC, ISRO), Dr. Arti Sarkar (Group Director SAC, ISRO), and Dr. Parvin Kumar (Assistant Dean R&D, KIET Group of Institutions, Ghaziabad) witnessed the ceremony.



SAC is responsible for designing and developing space-borne instruments for ISRO missions, as well as developing and operationalizing applications of space technology for national development, including communication, broadcasting, navigation, disaster monitoring, meteorology, oceanography, environment monitoring, and natural resources survey.

The partnership aims to advance the development and application of technology, build deep tech capabilities, and promote collaborative conferences and workshops. SAC and KIET Group of Institutions will develop programs to enhance capabilities in selected areas, engage in doctoral programs, and bring the expertise of scientists into the classrooms at KIET. KIET Group of Institutions will also work on identified academic and research problems of SAC or assigned projects independently or jointly.

The partnership between the two organizations, “SAC and KIET” will provide a unique opportunity for faculty members to collaborate and work together towards common goals. With their collective expertise and resources, they can create a research environment that fosters innovation and creativity, allowing for the exploration of new ideas and the advancement of knowledge in various fields. This partnership will undoubtedly benefit faculty members, allowing them to expand their research areas and contribute to the overall growth of their respective fields.

According to Dr. (Col.) A Garg, Director of KIET Group of Institutions, the institute is excited to collaborate with SAC for project-based learning and research. “Our faculty and students will benefit from joint research projects, internships, and courses with the SAC scientists,” he added.



Mr. Nilesh Desai, Director of SAC, appreciated the institute's commitment to applied research. He said that the KIET team would work on various novel aspects of satellite payloads with the mentorship of the SAC scientist team. This partnership will go a long way in advancing technology and space research in India.



According to Dr. Vibhav Sachan, who serves as the Dean of Research and Development as well as the Head of the Department, ECE at KIET Group of Institutions, the institute will gain substantial support from SAC for various academic events, including conferences, workshops, and research proposals, in addition to fostering interactions among faculty and scientists. With the signing of the MOU, he believes that faculty members will be able to take on more focused research challenges, students can engage in internships and projects under the guidance of experts, and scientists will have the opportunity to pursue advanced courses and further study. Joint workshops and conferences in specific areas of impact are also expected to be conducted.

This MOU provides a gateway to the faculties and students of the Centre of Excellence for "Space Technologies" which is working on designing student Nanosatellite. This COE is inaugurated in February 2020 under the guidance of the Late Dr. Sanjay Kumar Sharma (Ex HOD, ECE & Ex Dean R&D), with a vision to launch nanosatellite by filling up the industry-academia gap.

Dr. Abhishek Sharma (Associate Professor, ECE) along with Dr. Parvin Kumar (Associate Professor, ECE) are the people who are looking after this COE and its work. The COE of Space Technologies is continuously working on designing nanosatellites. The 3D structural modeling, Uplink downlink, and onboard computer development of nanosatellites are in

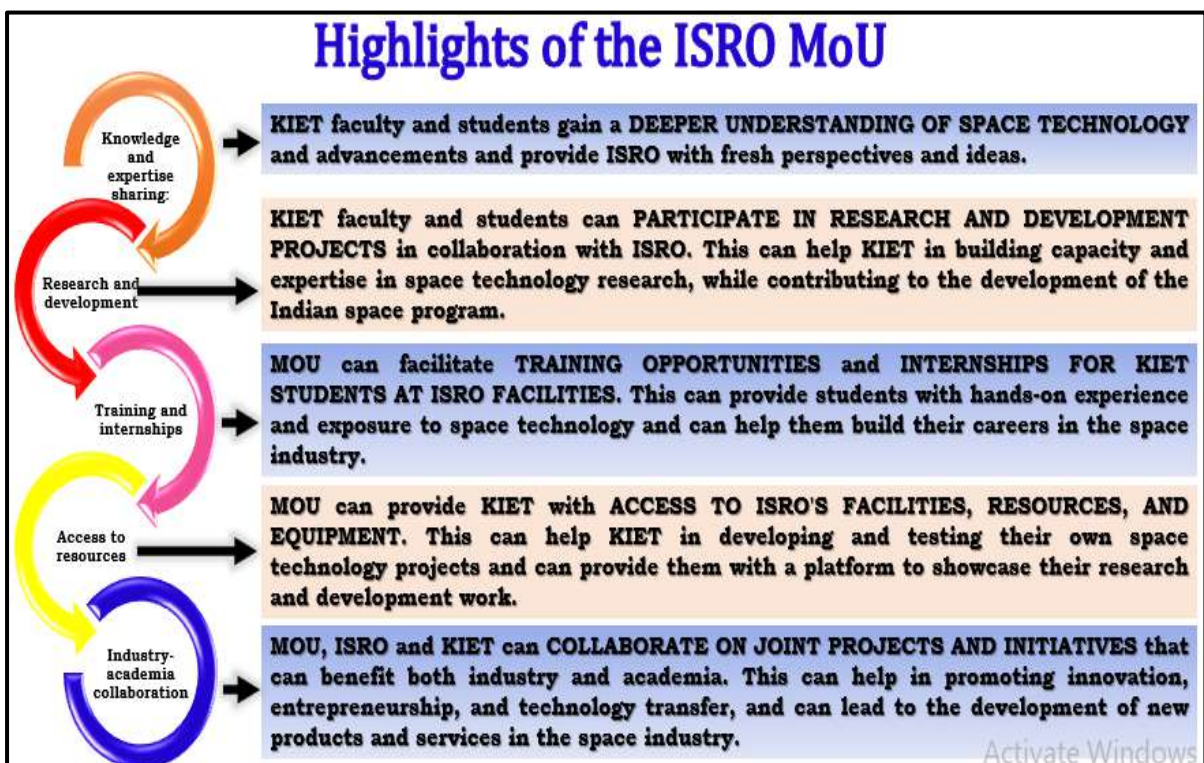
progress. It is important to note that KIET Space Technologies has organized various space-based research activities and dedicated itself to its aim.



Dr. Manoj Goel (Joint director, KIET Group of Institutions, Ghaziabad) said that the MOU between KIET and ISRO will bring benefits in collaborative research projects, joint academic programs, and exchange of faculty and students. Sharing expertise and resources will enable us to develop cutting-edge innovations in space technology, aeronautics, and satellite communication. The partnership offers students opportunities to work on live projects with experienced ISRO scientists, providing practical experience and career prospects. This collaboration will benefit our college in achieving its goal of quality education and research in engineering and technology.

Dr. Ruchita Gautam (Addl. HOD ECE, Associate Dean R&D) said that the MOU provides an elite opportunity not only to Kietians but to all researchers and students of the North Indian region, as KIET is the first affiliated institution under Dr. A. P. J. Abdul Kalam Technical University, Lucknow that grabbed this opportunity to align with the vision of ISRO in North India Region.

The MOU will benefit both organizations in terms of collaborative research projects, joint academic programs, and exchange of faculty and students. Joint workshops and conferences in specific areas of impact are also expected to be conducted.



Faculty Articles

WORLD ENVIRONMENT DAY: BIRTHDATE, HISTORY, SIGNIFICANCE, AND CELEBRATION

-Dr. Minakshi Karwal (Associate Professor and Assistant Dean R&D (Promotion and Implementation of Sustainable Development in Research))



World Environment Day was commemorated on 5th June after the first International Conference on the Human Environment held in Stockholm (5–16 June 1972). This was the first International Conference where the environment as a major concern was highlighted in the history of mankind.

It is the biggest international day for the environment, led by the United Nations Environment Programme (UNEP), the largest global platform for environmental outreach. This day is celebrated by millions of people across the world. The UN Environment Programme (UNEP) annually organizes events for World Environment Day, which encourages worldwide awareness and action for the protection of the environment. Each year a specific theme is decided for D-Day, that focuses on a relevant issue to encourage action and motivates the global participation to follow the theme.

The year 2023 marks the 50th anniversary of World Environment Day which is hosted by Cote Ivoire and supported by the Netherlands and the theme will focus on solutions to plastic pollution under the campaign 'Beat Plastic Pollution', which reminds people to bring human consciousness into action to control plastic pollution, which resulted into action steps by the governments and businesses to tackle plastic pollution as well.

During this global celebration, various activities are being conducted, few are undermentioned.

- **Campaigns and Initiatives:** World Environment Day serves as a platform to mark various campaigns and initiatives aimed at involving individuals and various stakeholders in action-oriented toward the conservation of the environment. These may include tree-planting drives, street plays, clean-up campaigns, poster-making competitions, awareness-raising activities, and educational programs.
- **Awareness and Education:** The day serves as a platform for promoting awareness and understanding of environmental challenges. Educational institutions, NGOs, and governmental organizations often organize seminars, workshops, and exhibitions to educate and sensitize the public to bring an eco-friendly attitude through practicing sustainability and bringing environmental conservation.
- **Policy Advocacy:** World Environment Day provides an opportunity for policymakers, decision-makers, and environmental advocates to raise their voices and promote sustainable policies and practices. Discussions and dialogues may take place at local, national, and global levels to address global as well as local environmental issues like

climate change, pollution, soil degradation, biodiversity loss radiation pollution, and forest conservation.

- **Social Media Engagement:** The present scenario is significantly influenced by social media. The spreading of messages and raising awareness about environmental conservation sees a surge on World Environmental Day involving online activities, with individuals, organizations, and governments sharing information, tips, and stories related to environmental protection using hashtags like #WorldEnvironmentDay or #WED2023.
- **Collaborative Efforts:** The day encourages collaboration between governments, businesses, communities, and individuals to tackle environmental challenges collectively. Partnerships and alliances are formed to implement sustainable practices, promote renewable energy, reduce waste, and protect ecosystems.

In India, the Ministry of Environment, Forest and Climate Change, Government of India has announced that World Environment Day 2023 will be celebrated with a focus on the Mission LIFE, which stands for Lifestyle for Environment. The objective is to encourage people to adopt sustainable lifestyle practices to protect the environment. The concept of LiFE was introduced by the honorable Prime Minister of India at the 2021 United Nations Climate Change Conference (COP26) in Glasgow. India has been mobilizing people to embrace LIFE since the Honourable Prime Minister called for an international effort to adopt sustainable lifestyle practices.

To kick-start the Mass Mobilisation for Mission LiFE, the National Museum of Natural History in collaboration with the National Zoological Park organized an event on Waste Reduction. A PPT on waste management, demonstration, and interactive sessions were delivered by Dr. Minakshi Karwal, Associate Professor, KIET Group of Institution, Ghaziabad. Participants were also encouraged to pledge to adopt LiFE actions.

Several other events were organized by Regional Offices of the National Museum of Natural History across the country.

The Zoological Survey of India also started a Mass Mobilisation for Mission LiFE, focusing on “Save Water” and “Say no to Plastics” to bring awareness among the youth.

<https://indiacsr.in/what-is-the-theme-of-world-environment-day-2023-in-india/>

Some old yet golden memories as pictures of the World Environment Day celebration at KIET Group of institutions are shown below:

The banner is for a live webinar on Environment Restoration. It features the KIET Group of Institutions logo at the top left, the UNEP World Environment Day logo at the top right, and a photo of Dr. K. Abdul Ghani, identified as the 'Green Man of India'. The webinar is scheduled for 5th June 2021 from 11:30 AM to 1:00 PM. The banner also includes the website www.kiet.edu and the phone number 1800 313 0056.



Student's Corner



We are delighted to announce that a team from the Centre of Robotics and Mechatronics, ECE Department, participated in the Technical Project Expo event (Technophilia-2023) organized by Dewan Vs Group of Institutions, Meerut, on April 28, 2023. The theme for the event included innovative projects related to communication systems, embedded systems, the Internet of Things (IoT), robotics, automation, PLC & SCADA, AI, machine learning, IOV, UAV, data science, 5G, applications of web development, design thinking, NCER, energy conservation, EEFS, and many more. The team, comprising Mr. Devansh Gupta and Mr. Abhinav Saini under the mentorship of Dr. Himanshu Chaudhary, participated in the event with the project title "Smart Helmet." The proposed project caught the attention of all the jury members and the audience, and it obtained 1st rank in the overall category of solving real-world problems with cutting-edge ideas. The team was presented with a cheque for 11,000 Rs, a Certificate of Excellence, and an Excellence in Mentorship trophy.



Congratulations to Ayush Kashyap and Shivangi Raghav, both from B. Pharm 3rd Year, for securing the second position in the Uddhyam (Business Plan) Competition, which was organized by ITS-Mohan Nagar during their cultural fest "Navtarang 2023" on 25th April 2023. They were among 20 teams who participated in the competition and received a cashback of 1000rs. It is worth mentioning that Shubham Kumar and Sweta R. Singh of B. Pharm 3rd year also participated in the same event.

KIET (R&D) Policies

Promotion of research culture with the formulation of policies by the R&D Committee is as follows:

- KIET Research Policy
- KIET Ethics Policy for Students and Faculty Members
- CV Raman Award Policy
- Policy for KIET Research Faculty Members
- Guidelines for Organizing International Conferences in Institute
- Departmental Research Committee
- KIET Policy for Research Proposals/Grants
- KIET Policy for Research Guidance/Ph.D. Guidance for Improving Research Culture

For details, kindly refer -

<https://www.kiet.edu/Research%20and%20Development%20Policy>

Research Incentives for Attending Workshops/ Seminar/ FDPs

The faculty would be allowed OD+ Registration+ T.A. on an actual basis or Rs. 10,000/- whichever is less.

The Workshops/Seminars/FDPs hosting institutions must be institutes of repute (IITs/IISc/NITs/IITs/Universities/Deemed Universities etc.).

Each faculty member can attend workshops/seminars/FDPs of repute twice in an academic year with financial assistance. However, financial assistance is limited to Rs. 10,000/-only. The maximum number of ODs is limited to one week during the lean period. Only one one-day OD is allowed in the academic period.

The clause of "minimum requirement of 6 months of service in KIET" stands discontinued for claiming any research-related incentives or OD for attending workshops, seminars, or FDPs etc.

Faculty who attends FDPs outside the university must disseminate knowledge and information by organizing faculty development program (FDP) and student development programs (SDP)/student workshops/summer/winter schools, among other things, for the benefit of faculty and students in their respective departments.

The OD and registration claim under the Research Incentive Schemes (RIS) of KIET must be made within a month in the prescribed form available as Annexure IV (a) in KIET Research Policy (Edition 2023)

<https://www.kiet.edu/uploads/department/research/2304230930.pdf>

Details of the knowledge sharing session must be submitted while making the claim available as Annexure IV (b) in KIET Research Policy (Edition 2023) (<https://www.kiet.edu/uploads/department/research/2304230930.pdf>).

Research Incentives for Publications of Books

Faculty members who have made efforts to write and publish books or monographs are encouraged and an incentive will be given to the faculty member as per the cap provided:

Details	Published By	Amount
Full Book	Renowned International Publisher	Rs. 10,000/-
Full Book	Renowned National Publisher	Rs. 5,000/-
Edited volume of book with articles or chapters (with ISSN/ISBN number wherever necessary)	Renowned International / National Publisher	Rs. 2,000/-
Monographs	National Level / International Level	Rs. 2,000/-

If the book/chapter/monograph is contributed by more than one author, the incentive amount will be shared by all the authors equally.

A maximum of two books/chapters/monographs may be considered per academic year.

Authors must also be aware of the KIET Ethics Policy for Students and Faculty Members on academic dishonesty and plagiarism available as **Annexure I** in KIET Research Policy (Edition 2023) (<https://www.kiet.edu/uploads/department/research/2304230930.pdf>).

Published chapters or monographs must have "**KIET Group of Institutions, Delhi-NCR, Ghaziabad**" as the affiliation.

Research Incentive Schemes (RIS) of KIET must be made within a month of publication in Book Citation Index-Science (BKCI-S), Book Citation Index Social Sciences & Humanities (BKCI-SSH) and SCOPUS Indexed Book Publication in the prescribed form available as **Annexure V** in KIET Research Policy (Edition 2023) (<https://www.kiet.edu/uploads/department/research/2304230930.pdf>).

Research Incentives for Generation of Research Grants or Grants for Up gradation of Research Infrastructure

- Faculty members are expected to submit proposals for research grants from funding agencies.
- It is quite likely that these projects may involve modernization of laboratories or research infrastructure, acquiring equipment required specific to the research study or conducting surveys, etc.
- The research incentive will be 5% of the allocable amount if the institutional overheads are less than 10% of the project, and 10% if the overheads are 10% or more of the project cost. Research grants with no overheads are eligible for up to a 5% incentive. However, researchers are encouraged to include institutional overheads while proposing the grant budgets. Applicable to DST/DRDO/ISRO/DAE/ICMR/DEIT/DST. The Principal Investigator will receive 60% of the incentive, with the remaining 40% divided equally among the co-investigators.

Various Research Labs in KIET

S. No.	Research Lab/Centre of Excellence	Department
1	Centre of Robotics and Mechatronics	ECE
2	KIET NI LABVIEW Academy	ECE
3	Bio-Medical Instrumentation MBS	ECE
4	Space Technologies	ECE
5	Apple for iOS University Program	IT, CS, MCA
6	D-Link Global Center of Excellence	IT, CS, MCA
7	Centre for Automotive Mechatronics in association Mercedes Benz	ME
8	CAD/CAM Lab	ME
9	Material Science & Testing Lab	ME
10	IC Engine and Automobile Lab	ME
11	Maker's Space Innovation Lab	All Branches
12	Central Instrumentation Lab	Pharmacy
13	Pharmacology research Lab	Pharmacy
14	Center of Excellence for Renewable Energy based Power System for Electrical Power Supply and Transportation	EN
15	Centre of Excellence in latest art of structural analysis and design facilities viz. STAAD PRO, E-TABS, SAP, ANSYS, PLAXIS, Primavera etc.	CE
16	Centre of Excellence in Process Control and Industrial Automation	EN
17	Finance Lab	MBA





We don't have the fantasy of competing with the economically advanced nations. But if we are convinced that if we are to play a meaningful role nationally, we must be second to none in the application of advanced technologies to the real problems of man and society.



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