NATIONAL INSTITUTIONAL RANKING FRAMEWORK
Engineering Rank - 187
Pharmacy Rank - 97

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Delhi-NCR, Ghaziabad

KIET GROUP OF INSTITUTIONS
Connecting Life with Learning

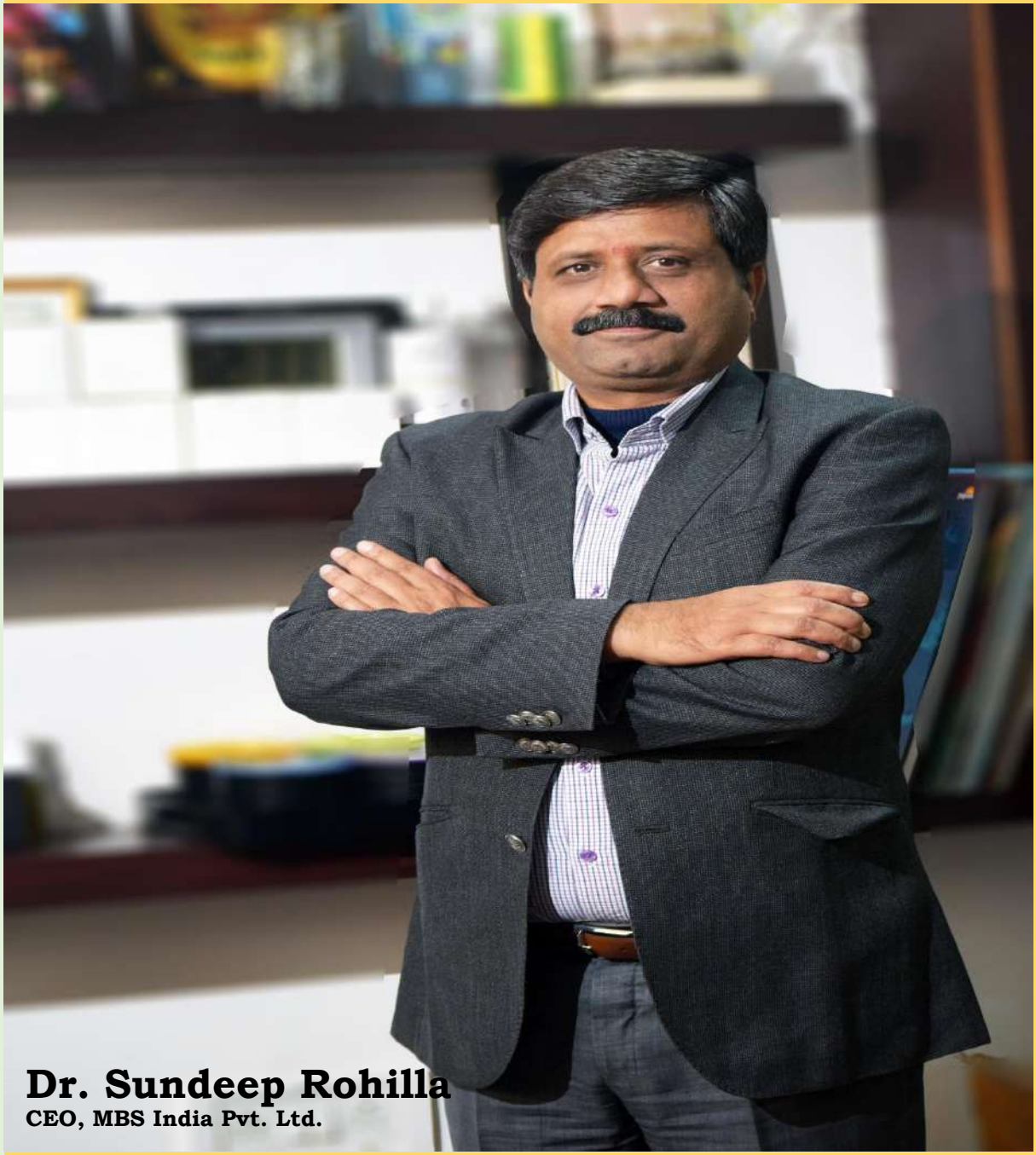
CELEBRATING 25 YEARS OF EXCELLENCE

A+ NAAC
Accredited by NAAC with Grade "A+"

March 2023
Vol No. 3

अनुसंधान

(KIET Research Magazine)



Dr. Sundeep Rohilla
CEO, MBS India Pvt. Ltd.

Research and Development

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

***KIET School of Engineering & Technology * KIET School of Management**
*** KIET School of Computer Application * KIET School of Pharmacy**
DELHI-NCR, MEERUT ROAD, GHAZIABAD-201206 (U.P.)
01232-260257, 01232-227980 | 1800 120 0106 | www.kiet.edu
All disputes are subject to Ghaziabad Jurisdiction only

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.

Assistant Dean, Industrial & Academia Research Collaboration & Promotion
Dr. Brijesh Singh
Associate Prof. (EN)

Member Secretary (Intellectual Property Right Committee, Research Data Management)
Dr. Shivani
Assistant Prof. (ECE)

Member Secretary (Intellectual Property Right Committee, Research Data Management)
Dr. Richa Goel
Associate Prof. (KSOP)

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Prof. & Addl. HoD (AS)

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Dr. Parvin Kr Kaushik, Associate Prof., Electronics and Communication Engineering
Ms. Garima Singh, Assistant Prof., Computer Science, and Information Technology
Ms. Richa Singh, Assistant Prof., Computer Science Engineering (AI and AIML)

CONTENTS

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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 CEO of MBS India, 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.

MBS India was established in the year 2010 with its vision to be the best manufacturing organization in the country and abroad and started its operations on small-scale industry engaged in the manufacturing of Thermal Graph papers. MBS India the was first of its kind manufacturing unit set up in NCR, to manufacture four colour thermal recording graph paper. Further in 2015 MBS India, broadened its vision by opening new medical equipment's Manufacturing and Marketing division by shaking hands with a few new and emerging companies that were focused on technology and quality products. Taking a step ahead, in 2018 MBS India started assembling Medical Equipment like Patient monitors, Defibrillators, Ventilators and Anaesthesia Workstations, Humidifiers, Hospital Furniture and OT lights under technical collaboration with a few of its principal companies like Northern and Superstar Medical. Today MBS India has become one point solution for all Technology Products and Services. MBS India is having MOU with the Centre of Excellence Bio-Medical Instrumentation Research at KIET Group of Institutions since January 2021. This centre of excellence is dedicated to enhancing the research and development efforts of the Institute with the objective to produce end products, research publications and patents. India has been witnessing remarkable growth in recent years, and the country has emerged as a significant player in the global economy. The Indian government has been implementing various initiatives to promote entrepreneurship, innovation, and research and development. These initiatives have resulted in the creation of a vibrant ecosystem that fosters innovation and promotes the growth of the Indian economy.

Innovation is not just about developing new products or technologies. However, it's about creating new business models, processes, and the execution process. In today's fast-paced world, innovation is critical to remain competitive and stay ahead of the curve. The Indian economy has enormous potential, and there are many opportunities for businesses to grow and expand. However, to realize this potential, we need to focus on research and development and invest in building a culture of innovation. As a country, we need to encourage entrepreneurship and support the growth of startups and small and medium enterprises.

The KIET research magazine is a platform that showcases the innovative work of researchers and scholars across a wide range of fields, from engineering to humanities, and beyond. The articles and insights featured in this magazine are a testament to the passion, creativity, and dedication of the researchers who are working tirelessly to solve some of the most pressing challenges of our time.

As you delve into the pages of this magazine, I encourage you to embrace curiosity and an open mind. Allow yourself to be inspired by the ground-breaking work of the researchers and consider how their findings might apply to your own life and the world around you.

Finally, I would like to express my sincere gratitude to the KIET research magazine team for their tireless efforts in curating this incredible collection of research. I am confident that this magazine will continue to serve as a source of inspiration and knowledge for years to come.

Dr. Sundeep Rohila
CEO, MBS India Pvt. Ltd.

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

KIET Group of Institutions has signed an MOU with D-Town Robotics PVT LTD. for establishing the KIET Drone Testing & Trial Centre (Under Innovation Centre).
The MOU signing ceremony took place on March 23, 2023. The collaboration aims to provide a framework for research and development of drone technology and related fields through joint efforts between KIET and D-Town Robotics.

An Interaction Session on R&D Project Proposal Writing and Funding Opportunities on March 15, 2023. The session featured Dr. Shyam Lal, Assistant Professor (Senior Scale) at the National Institute of Technology Karnataka, Surathkal, Mangalore, (Karnataka), India, as the Resource Person. The Dean of R&D, Dr. Vibhav Kumar Sachan, led the session, which was attended by a group of enthusiastic research faculty members and research scholars from the institute.

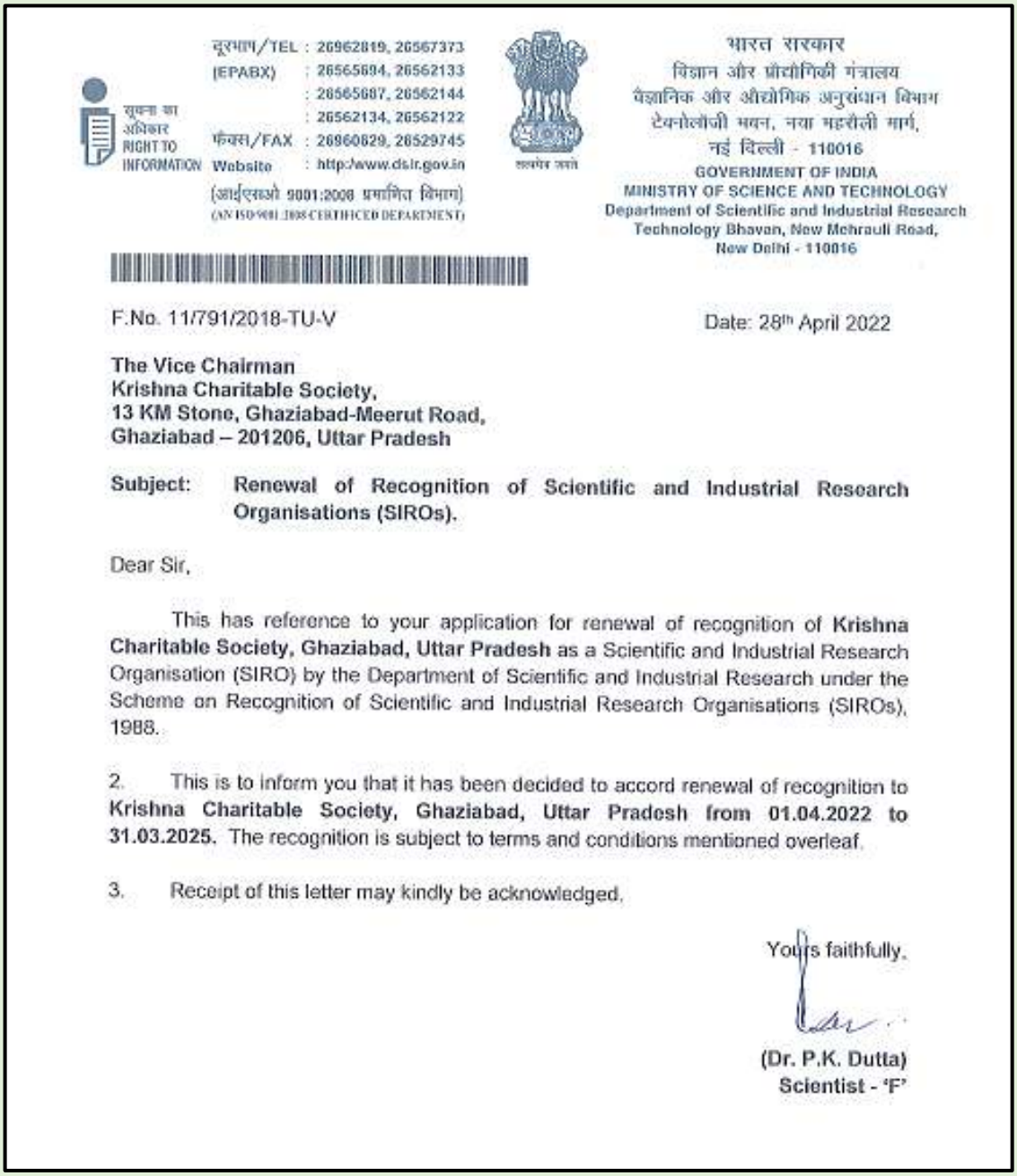
KIET Group of Institutions has organized an online session on "**Intellectual Property Rights (IPR) and Patents, Designs Filing**", especially for the faculty members and students of KSOP, CS, CSE, CSIT, and CS (AI&ML) departments.
The program commenced with the welcoming address by Prof. (Dr). K. Nagarajan-Principal, KSOP, and Associate Dean R&D (Patents), Shri. R.P. Yadav ji- Founder and Managing Partner Sr4ipr Partners-Patent and Trade Mark Attorneys. The entire session went extremely successful and enlightening through the gracious speech by the eminent speaker and the presence of distinguished guests, faculty members, and student participants. The event was well coordinated by Dr. Richa Goel.

Congratulations to the second batch of Two-Wheeler Skill Development Center students on their successful final assessment held on March 23, 2023, with the support of HMCL and ASDC.
22 students participated in the assessment and were evaluated by esteemed professionals, including Mr. Ravi Katiyar from HMCL, Mr. Naveen Bhatnagar, and Mr. Saurabh from ASDC.
The event was graced by the presence of Dr. Ashish Karnwal, HoD (ME), Dr. Ajay Singh Verma, and the trainers of this center, Mr. Ashok Kumar and Mr. Ikhlaq. Dr. Karnwal complimented the students on their achievements and encouraged them to aim higher in their careers by taking this employment-oriented course to new heights. We wish all the students a bright future ahead!

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)**



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: 26562134, 26562122
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सत्यमेव जयते

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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

F.No. 11/791/2018-TU-V

Date: 28th April 2022

The Vice Chairman
Krishna Charitable Society,
13 KM Stone, Ghaziabad-Meerut Road,
Ghaziabad – 201206, Uttar Pradesh

Subject: Renewal of Recognition of Scientific and Industrial Research Organisations (SIROs).

Dear Sir,

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.

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.

3. Receipt of this letter may kindly be acknowledged.

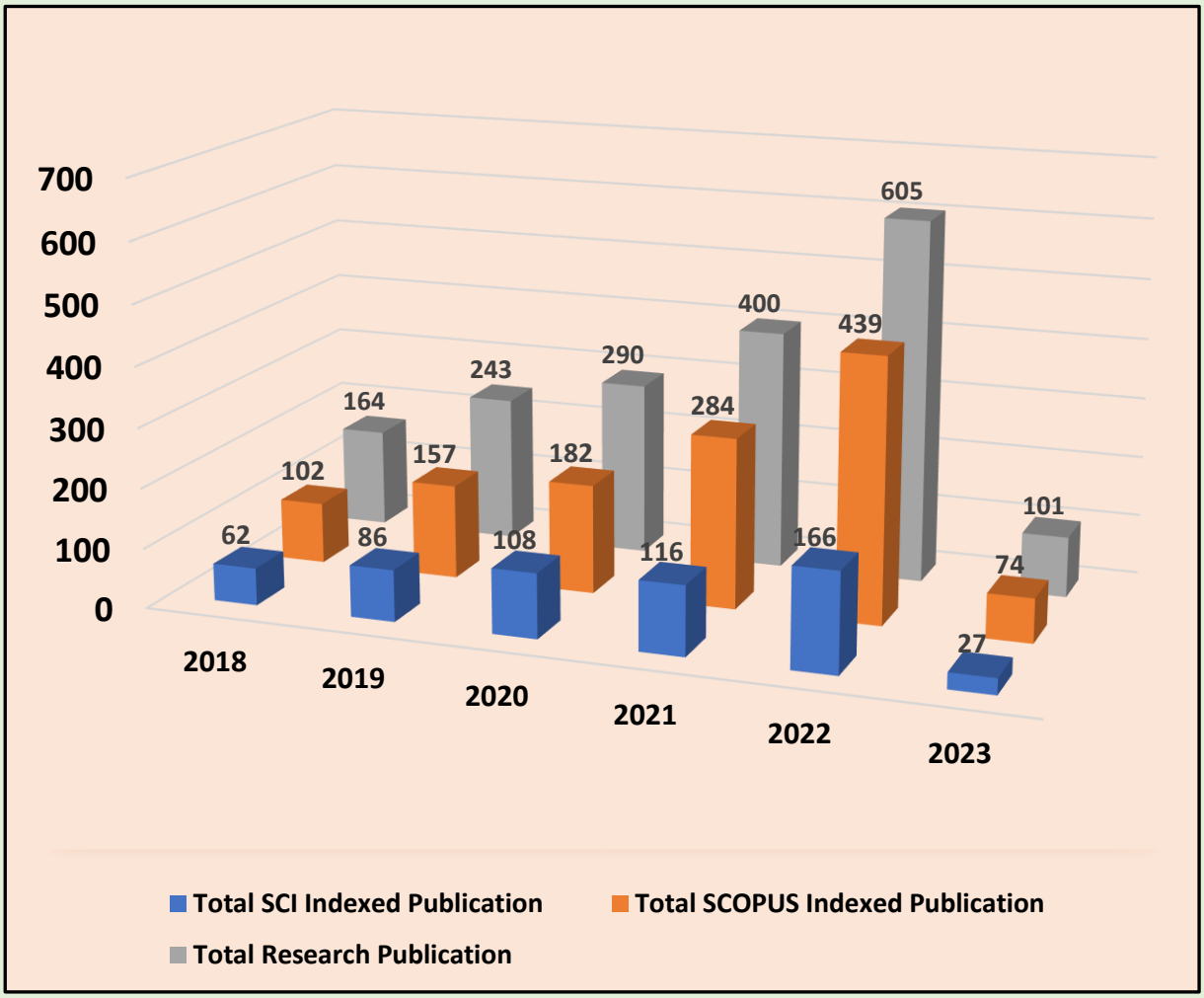
Yours faithfully,

(Dr. P.K. Dutta)
Scientist - 'F'

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	27	74	101
Total	556	1215	1803



Category	Number of Publication for Feb-March 2023
SCOPUS Publications	23
Web of Science Publication	9

Details of Patents Published/Granted

Title of the Invention: **IoT Based Secure System for Monitoring Patients Using Blockchain Technology**
Application Number: 202311010127 A (Indian Patent Office)
Applicant(S): KIET Group of Institutions, Dr. Abhinav Juneja, and team
Date of Filing: 15-2-2023
Date of Publishing: 24-02-2023
Field of the Invention: The present disclosure relates to the field of blockchain technology, and more particularly, to an Internet of Things (IoT) based secure system for monitoring patients using blockchain technology.
Objects of the Invention: The principal object of the embodiments herein is to provide an efficient framework of enhanced blockchain using suitable models of IoT devices. Another object of the embodiments herein is to provide helping the proper management of prices and working of laboratories, druggists & chemists. Another object of the embodiments herein is to provide an ease to the patients as 15 well as to the doctors using blockchain technology with IoT devices. Accordingly, embodiments herein disclose an Internet of Things (IoT) based secure system for monitoring patients using blockchain technology, comprising of a wearable device which is configured to monitor physical conditions of patients. The wearable device includes a user interface for displaying the patient`s physical condition based on patient data received during a registration process. Furthermore, the present system may include a central hub which is consisting of control centre of a complete network. The central hub stores access control data associated with the wearable device. The wearable device is to ensure timely responses which rely on distributed nature of Medicare system and add on the privacy and security to the complete network.
Figure 1. Schematic block diagram of an Internet of Things (IoT) based 25 secure system for monitoring patients using blockchain technology, according to the present invention.
Figure 2. Illustrates schematic diagram of data flow of information within the network for medicine prescription, according to the present invention.

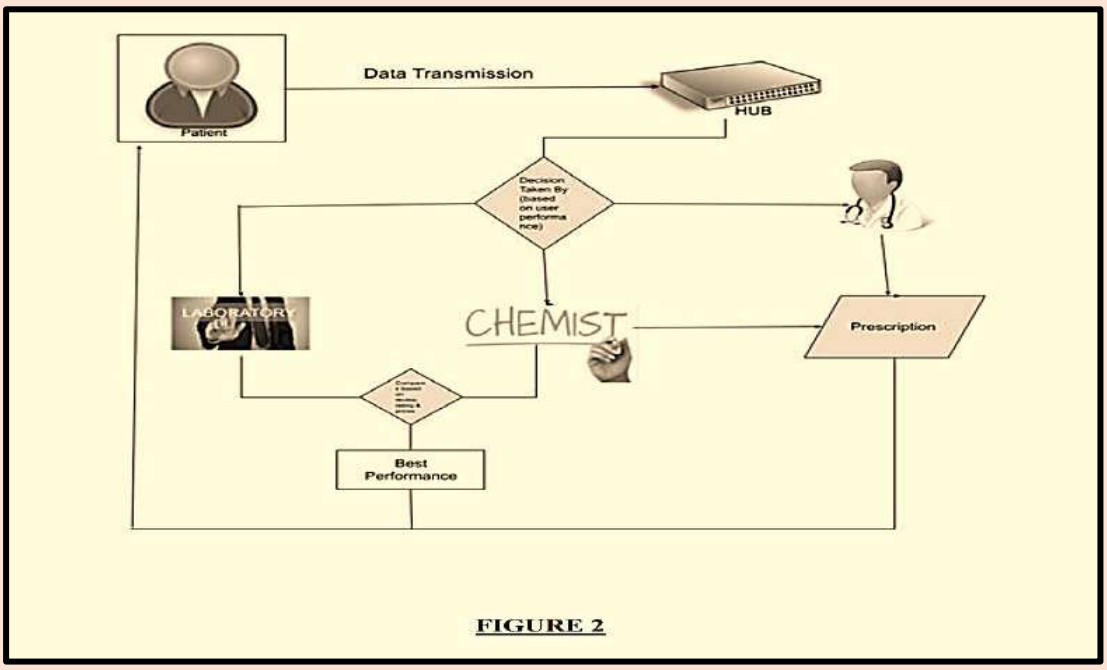


FIGURE 2

Title of the Invention: **S-ANFIS Method for Blood Infection Prediction**
Application Number: 202311004818 A (Indian Patent Office)
Applicant(S): Dr. Amit Kumar Gupta and team (KIET Group of Institutions)
Date of Filing: 25-01-2023
Date of Publishing: 10-02-2023
Field of the Invention: The invention is related to the field of Bio-Medical and Computer Science where Machine Learning and Artificial Intelligence with the algorithms of Neural Networks are used to predict blood infections.

Objects of the Invention: An object of the present disclosure is to predict blood infections based on the Smart Adaptive neuro-fuzzy inference system. In the invention, a novel hybrid approach is used to find out the blood infections based on the blood samples. Currently, reports are generated which highlight the normal range of parameters considered; but the proposed system will also give the name of the infection if exists in the person's report and the most suitable treatment based on the experts' advice. In the system, the Smart adaptive neuro-fuzzy inference system (SANFIS) is used and demonstrated on the 1000 blood samples.

Advantages of The Invention: The present invention has the following advantages:
Ease of user interface.
Comparatively less in expense.
Inspired by trained AI ML model for better result

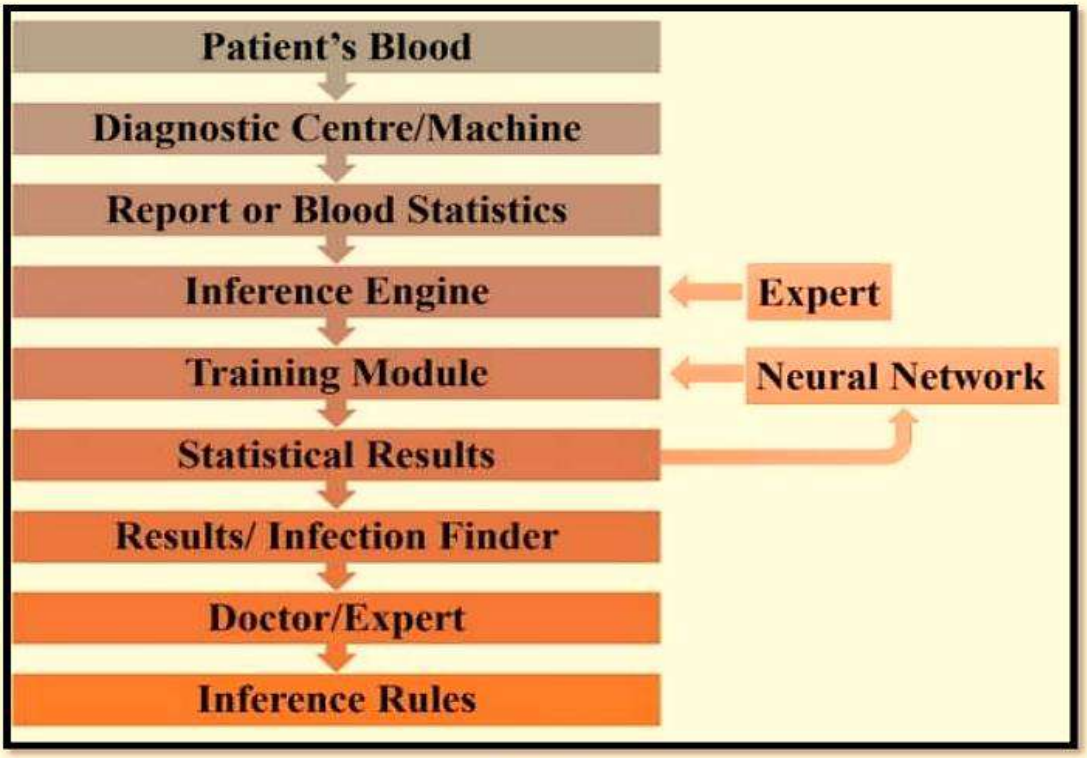


Fig 1

Fig. 1 Illustrates working modules of the system, in accordance with embodiments of the present disclosure

Title of the Invention: **IoT Based Railway-Line Breakage Detection System**
Application Number: 202211060844 A (Indian Patent Office)
Applicant(S): Mr. Saurabh and team (KIET Group of Institutions)
Date Of Filing: 26-10-2022
Date of Publishing: 04-11-2022
Field of the Invention: The present invention is related to the IOT based cloud computing system of Computer science and communication field.
Objects of the Invention: The objective of the present invention is to help the Indian railway system to do the maintenance of the railway tracks. The objective of the present invention is to identify the location of the railway track where the breakage is there, or the railway track is weaker. The objective of the present invention is to notify the railway linemen and office to the remedial action in such cases.
Advantages of the Invention: The advantage of the present system is the low-cost mechanism in comparison to existing systems. The advantage of the present system is the prevention system to notify the breakage in the railway tracks which prevents various incidents. The advantage of the present system is the use of data and information for future

practices as the data is stored on the server. The present system is the centralized low-cost solution that informs various departments to know about the railway track conditions. The figure below represents available in the present invention with its prototype.

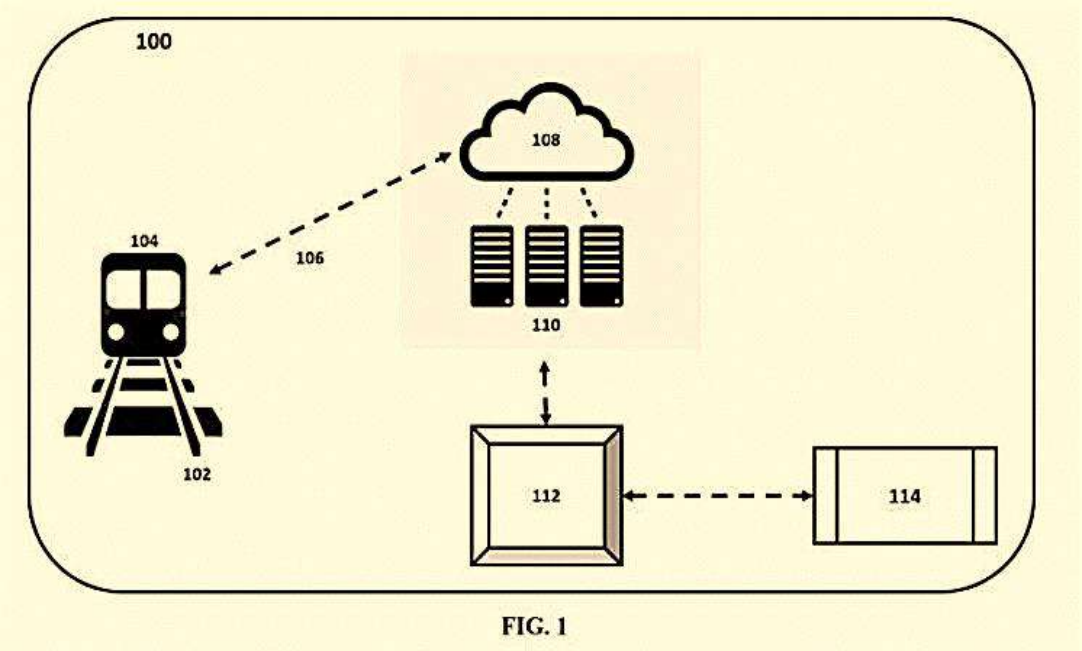


Figure 1. Re-presents available in the present invention with its prototype.

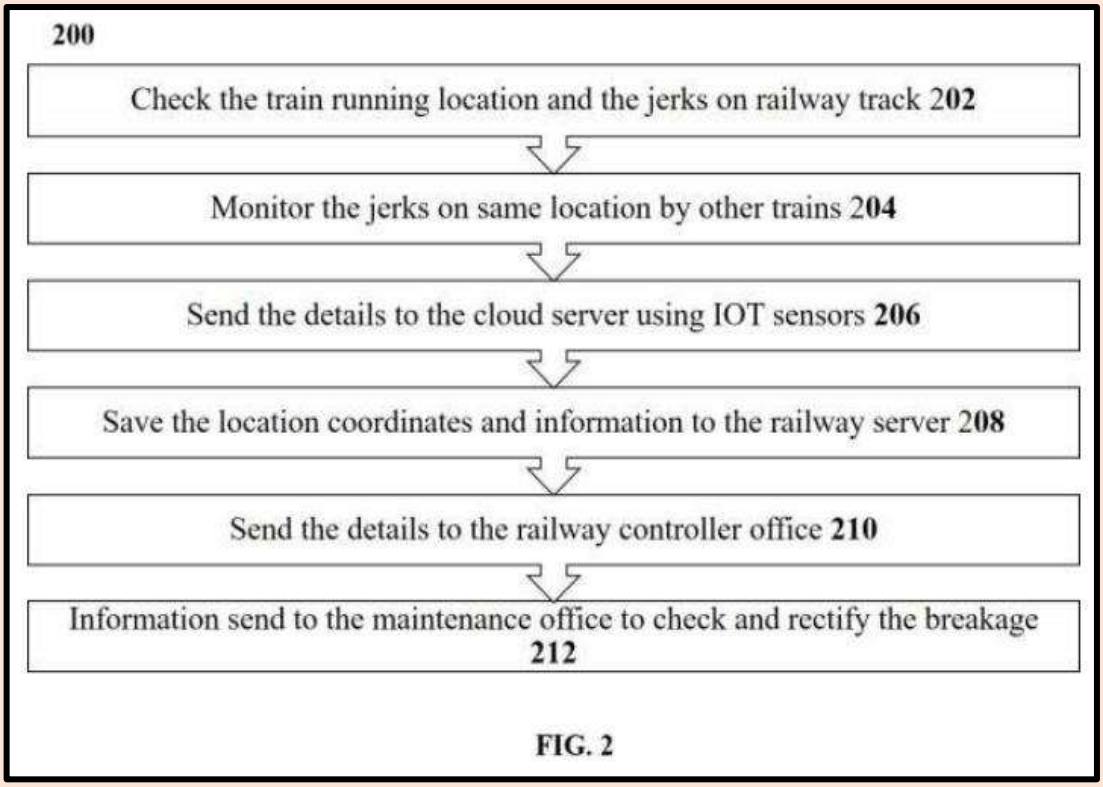


Figure 2. Step by step process of the present invention with respect to the prototype

Title of the Invention: **Smart System for Women's Awareness & Prediction of Disease**
Application Number: 202311006002 A (Indian Patent Office)
Applicant(S): Dr. Vidushi and team (KIET Group of Institutions)
Date of Filing: 30-01-2023
Date of Publishing: 17-02-2023

Field of the Invention: The invention is related to the field of Computer Science where, Machine Learning algorithms are applied to make predictions about women's problems.
Objects of the Invention: An object of the present disclosure is to develop an intelligent system to overcome the problems faced by women worldwide due to the mensuration cycle. In the invention, a novel hybrid approach is used to aware the community help in predicting the upcoming possible diseases.
Advantages of the Invention: The advantages of the present invention are:
• It will provide an awareness among people about the problems and ways to overcome them.
• It will provide a path for women to stand for their own health despite neglecting them.
• It reduces the death rate of the world in women.
• It also shows the way to prevent yourself from these types of problems.
• It is also beneficial for women's development.
• It may be a great initiative for the health cure of women.

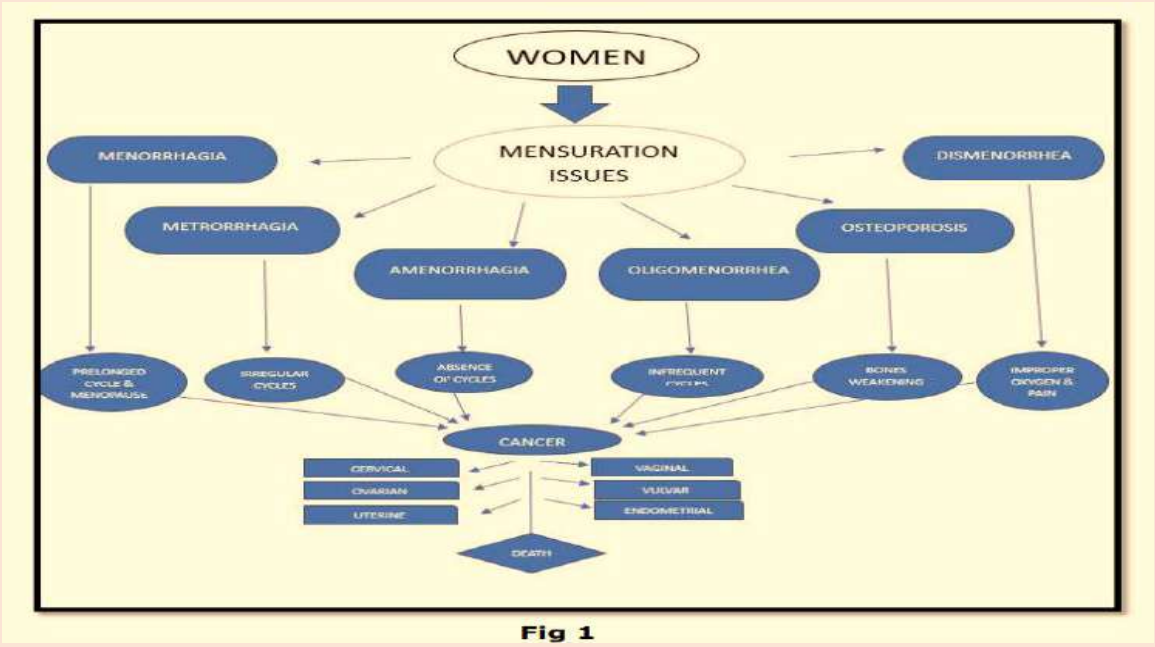


Fig 1

Figure 1. Problem statement, in accordance with embodiments of the present disclosure

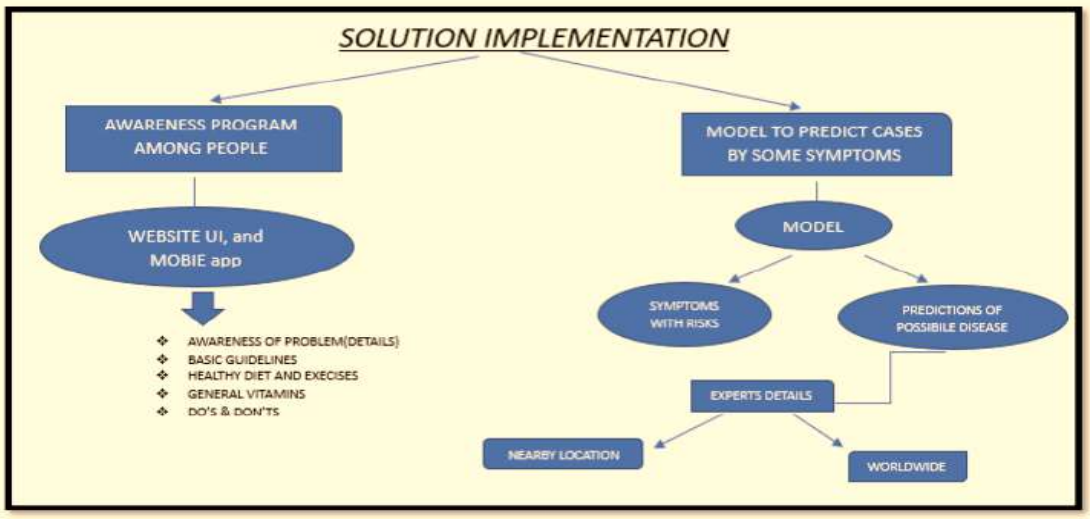


Fig 2.

Figure 2. Working module as the solution, in accordance with embodiments of the present disclosure

PATENTS Published - March 2023

S. No.	Title of Patent	Dept.	Name of Applicant	Date of Publication	Status
1.	Walking Stick for Physically Challenged Person	CE	Mr. Siddharth Jain	03.02.2023	Registration of Design
2.	Traffic Management System-Easy Traffic	CS	Abhishek Goyal, Aakriti Singh, Aditi Dubey, Anurag Shukla, Dr. Ajay Kumar Shrivastava, Dr. Harsh Khatter, Anurag Mishra	03.02.2023	Published
3.	S-Anfis Method for Blood Infection Prediction	CS	Dr. Amit Kumar Gupta, Ankit Verma, Dr. Rabi Narayan Panda, Dr. Shashank Bhardwaj, Dr. Vipin Kumar, Dr. Sanjeev Sharma, Dr. Manish Bhardwaj, Dr. Harsh Khatter	10.02.2023	Published
4.	System And Method for Detection Of Blood Infections	CS	Dr. Amit kumar Gupta, Ankit Verma, Rabi Narayan Panda, Dr. Shashank Bhardwaj, Dr. Vipin Kumar, Dr. Harsh Khatter	10.02.2023	Published
5.	Smart System for Women Awareness & Prediction Of Disease	MCA/CS	Dr. Vidushi, Dr. Amit Kumar Gupta, Dr. Arun Kumar Tripathi, Shivani Sharma, Mansi Panwar, Tripti Shrivastava, Ankur Sharma, Dr. Harsh Khatter	17.02.2023	Published

6.	System And Method for Fake News Detection	CS	Kumar Kaushik, Dharmendra Kumar, Dr. Dilkeshwar Pandey, Dr. Anil Kumar Ahlawat, Dr. Harsh Khatter	17.02.2023	Published
7.	Iot Based Hospital Management System	CSIT/CS	Swasti Singhal, Dr. Gaurav Dubey	17.02.2023	Published
8.	Iot Based Secure System for Monitoring Patients Using Blockchain Technology	CSIT	KIET Group of Institutions, Dr. Abhinav Juneja	24.02.2023	Published
9.	Predict Accurate Sales for Walmart Stores Considering The Impact Of Promotional Markdown Events Using Deep Learning Programming	CS	Dr Anand Prakash Shukla	10.03.2023	Published

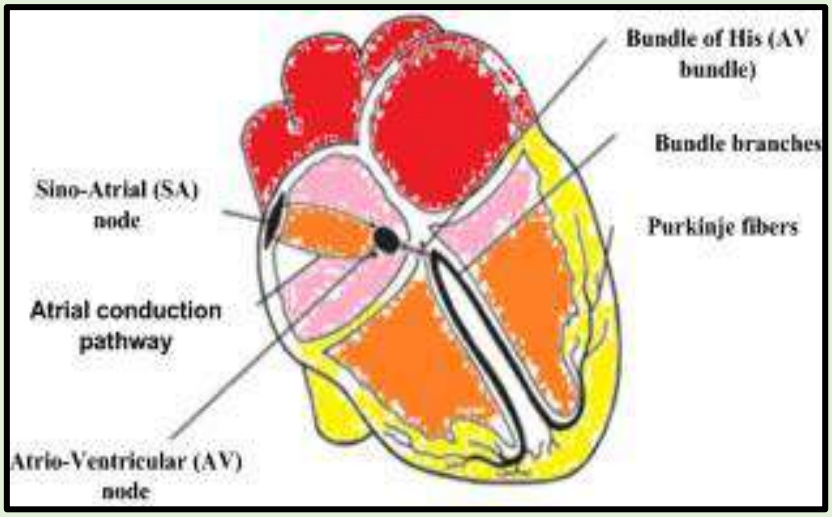
Details of Research Incentives for Journals

S. No.	Name of Faculty	Designation	Deptt.	Title of Paper and Name of Journal	Impact Factor/Cite Score	Benefits/ Incentives	Index in Journal
1.	Dr. Varun Gupta	Assoc. Prof.	EN	ECG Signal Analysis based on the Spectrogram and Spider Monkey Optimization Technique	1.33	3000	SCOPUS
2.	Dr. Abhas Kanungo	Asst. Prof.	ECE	Critical Analysis of Optimization Techniques for a MRPID Thermal System Controller	1.87	11000	SCIE
3.	Dr. Parul Grover	Assoc. Prof.	KSOP	Exploring the Multitarget Potential of Iridoids: Advances and Application	3.57	11000	SCIE
4.	Mr. Ajay Kumar	Asst. Prof.	IT	BW-Topsis : A Hybrid Method to Evalute Software and Systems	2.1	4000	SCOPUS

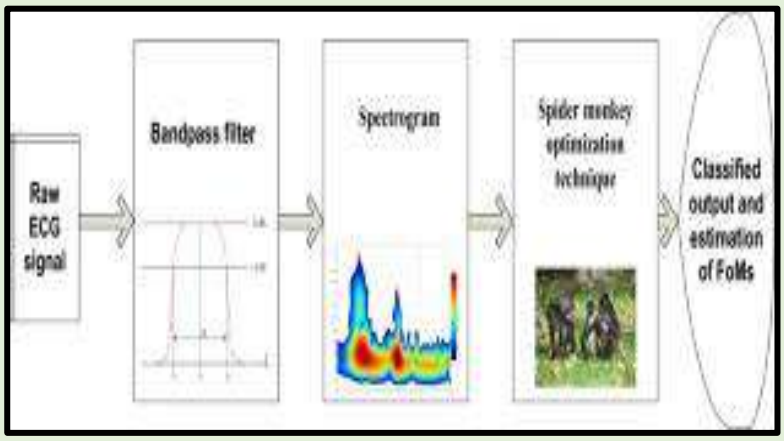
5.	Dr. Deepti Katiyar	Assoc. Prof.	KSOP	Appraising the Phytochemical and Therapeutic Prespectives of Bryonia Laciniosa: A Literature Metasynthesis	1.71	11000	SCIE
6.	Rohit Vashisth	Asst. Prof	CS/IT	Addressing Noise & Class Imbalance Problems in Heterogeneous Gross Project Defect Prediction - An Empirical Study	-	2000	ESCI
7.	Rohit Vashisth	Asst. Prof	CS/IT	Feature Engineering to Heterogeneous Cross Software Projects Defect Prediction: A Novel Framework	2.807	11000	SCI / Springer
8.	Manish Kumar Singh	Asst. Prof	ECE	Multi-objective NSGA-II optimization framework for UAV path planning in an UAV-assisted WSN	2.557	11000	SCIE
9.	Balram Tamrakar	Asst. Prof	ECE	Analysis and Modelling of DD-DPMZM to Investigate Fundamental to Intermodulation Distortion Ratio (FIMDR) against different Fiber Impairments for the Next Generation Networks	-	2000	ESCI
10.	Deepti Katiyar	Assoc. Prof	KSOP	Nutraceuticals and phytotherapeutics for holistic management of amyotrophic lateral sclerosi	3.446	2000	SCIE

Highlights of the Published Journal Articles

1. **Gupta, V., Mittal, M., Mittal, V. *et al.* ECG Signal Analysis based on the Spectrogram and Spider Monkey Optimisation Technique. *J. Inst. Eng. India Ser. B* 104, 153–164 (2023). DOI:** 10.1007/s40031-022-00831-6



The heart is responsible for the circulation of the blood throughout the human body. The conduction of the heart is nonlinear in nature and hence needs the appropriate utilization of technological advancements. The activity of the heart is assessed through an electrocardiogram (ECG) signal that consists of three different types of waves viz. P-wave, QRS-wave (also called QRS complex), and T-wave. But these waves are non-stationary, and hence, investigation of effective tools is essential for their accurate analysis. In this paper, the spectrogram technique is proposed to be used for feature extraction to analyse different segments of heartbeats (energy change) through colour contrasts of various frequency components with respect to time, unlike the existing techniques where it was not possible. The features are extracted after the pre-processing is accomplished using a digital bandpass filter (DBPF). The extracted features are further proposed to be optimized using the spider monkey optimization technique due to its acclaimed effectiveness in solving real-world optimisation problems. The robustness of the proposed methodology is established in fulfilling the ever-increasing demand of modern health care.

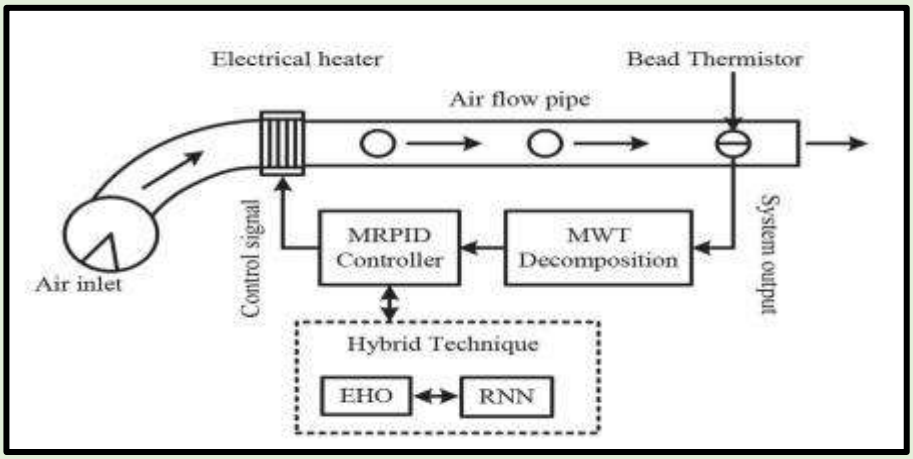


2. **Abhas Kanungo, Monika Mittal, Lillie Dewan, "Critical Analysis of Optimization Techniques for a MRPID Thermal System Controller" IETE Journal of Research, pp. 149-164, vol. 69, 2023. DOI:** 10.1080/03772063.2020.1808092

In this paper, a critical analysis of performance comparison of various optimization techniques for an MRPID (Multi-Resolution Proportional Integral Derivative) thermal system controller is presented. This controller controls the uncertainty or mismatch between real and reference temperatures.

Wavelet coefficients of error between the two temperatures and their corresponding gains are added to produce a control signal for the thermal system. The main purpose of the proposed method is to optimize the tuning parameters of a wavelet based MRPID controller to regulate the switching pulse of the thermal system. Modelling and simulations are carried out using MATLAB/Simulink@2015.

Figures-of-merit such as disturbance rejection, system stability and transient response are also compared using various techniques like Particle swarm optimization (PSO)-MRPID, Genetic Algorithm (GA)-MRPID (existing techniques), Firefly-MRPID controllers and Elephant herding optimization (EHO) based Recurrent neural network (RNN)-MRPID algorithm.



Firefly-MRPID and EHO with RNN-based MRPID are proposed for determining the unique (best) operating conditions of the thermal system in this paper.

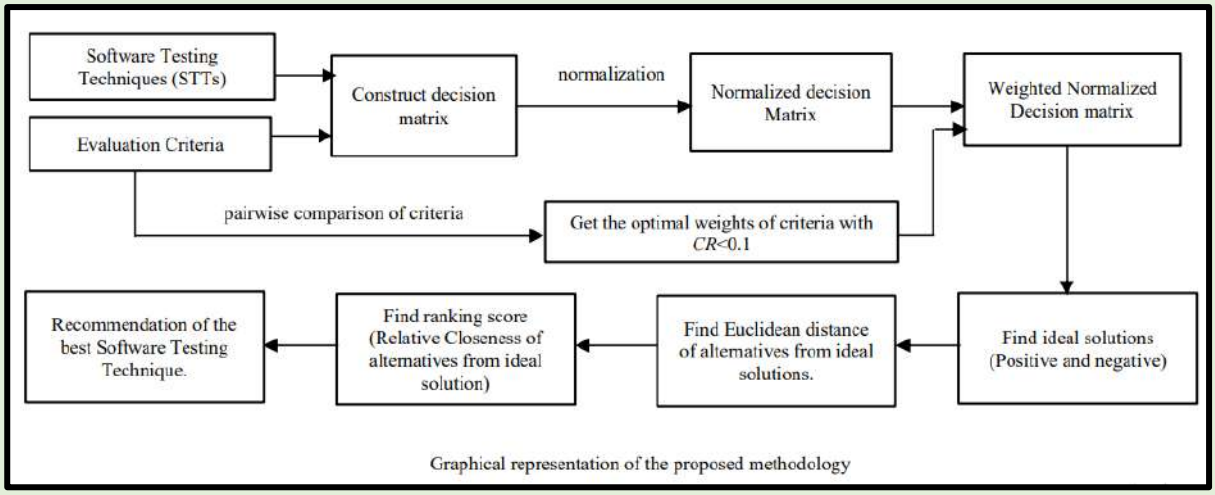
3. Grover P, Mehta L, Malhotra A, Kapoor G, Nagarajan K, Kumar P, Chawla V, Chawla PA. Exploring the Multitarget Potential of Iridoids: Advances and Applications. Curr Top Med Chem. 2023;23(5):371-388. DOI: 10.2174/1568026623666221222142217**. PMID: 36567288.**

Iridoids are secondary plant metabolites that are multitarget compounds active against various diseases. Iridoids are structurally classified into iridoid glycosides and non-glycosidic iridoids according to the presence or absence of intramolecular glycosidic bonds; additionally, iridoid glycosides can be further subdivided into carbocyclic iridoids and secoiridoids. These monoterpenoids belong to the cyclopentan[c]-pyran system, which has a wide range of biological activities, including antiviral, anticancer, anti-plasmodial, neuroprotective, anti-thrombolytic, anti-trypanosomal, antidiabetic, hepatoprotective, antioxidant, antihyperlipidemic and anti-inflammatory properties. The basic chemical structure of iridoids in plants (the iridoid ring scaffold) is biosynthesized in plants by the enzyme iridoid synthase using 8-oxogeranial as a substrate. With advances in phytochemical research, many iridoid compounds with novel structure and outstanding activity have been identified in recent years. Biologically active iridoid derivatives have been found in a variety of plant families, including Plantaginaceae, Rubiaceous, Verbenaceae, and Scrophulariaceae. Iridoids have the potential of modulating many biological events in various diseases. This review highlights the multitarget potential of iridoids and includes a compilation of recent publications on the pharmacology of iridoids. Several in vitro and in vivo models used, along with the results, are also included in the paper. This paper's systematic summary was created by searching for relevant iridoid material on websites such as Google Scholar, PubMed, SciFinder Scholar, Science Direct, and others. The compilation will provide the researchers with a thorough understanding of iridoid and its congeners, which will further help in designing a large number of potential compounds with a strong impact on curing various diseases.

4. A. Kumar and K. Kaur, "BW-TOPSIS: A Hybrid Method to Evaluate Software Testing Techniques," in *Journal of Communications Software and Systems*, vol. 18, no. 4, pp. 336-342, December 2022, DOI:10.24138/jcomss-2022-0138

Software testing plays a significant role in various software development phases. There are so many software testing techniques available. Selecting the most suitable software testing technique based on multiple factors is challenging for software practitioners. This paper proposes an MCDM-based hybrid approach for selecting the most appropriate software testing technique among various available software testing techniques, considering multiple factors such as cost, schedule, resources, etc. Because of the involvement of multiple factors, the problem of selecting the most appropriate software testing technique can be modelled as an MCDM problem. This study proposes a hybrid approach by integrating two MCDM methods BWM (Best-Worst Method) and TOPSIS (Technique for Order Preference by Similarity to Ideal Solution), for evaluating various software testing techniques considering multiple factors altogether. For the applicability of the proposed approach, an experimental study was conducted using seven software testing techniques and six evaluation criteria. Results show

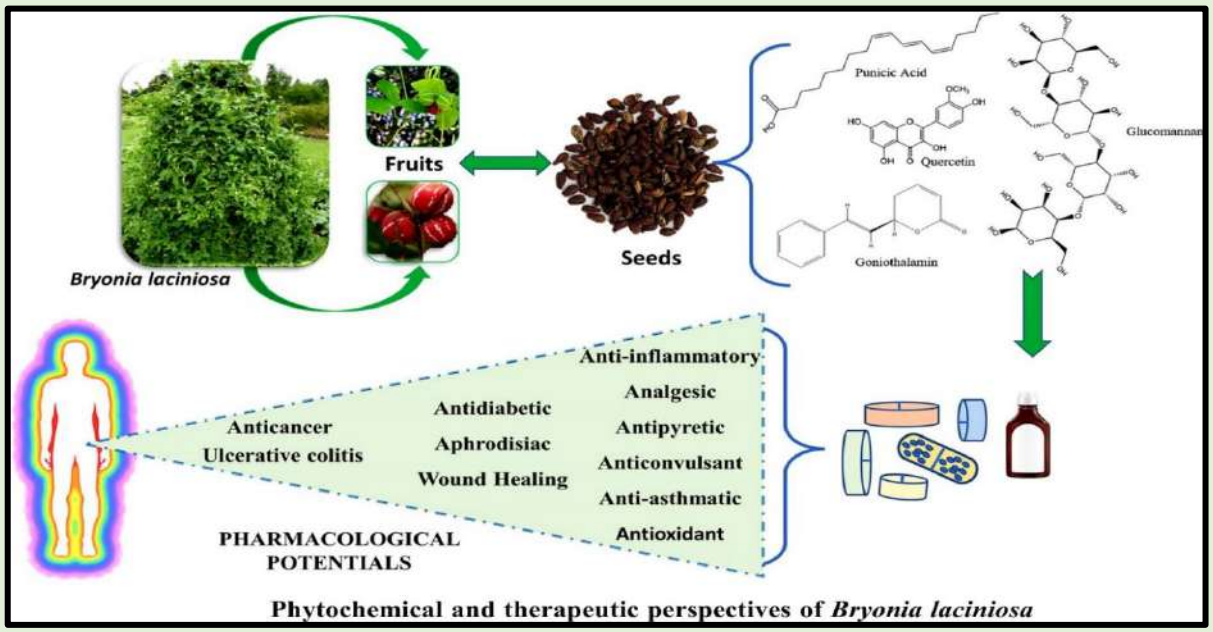
the proposed approach can be used as an efficient tool for selecting the most suitable software testing technique among various available testing techniques in the presence of multiple factors.



Graphical representation of the proposed methodology

5. Katiyar D, Saxena R, Kumar A, Prakash S, Bhardwaj A, Bansal P. Appraising the Phytochemical and Therapeutic Perspectives of *Bryonia laciniosa*: A Literature Metasynthesis. Comb Chem High Throughput Screen. 2023;26(7):1385-1399. doi: 10.2174/1386207325666220804113744**. PMID: 35927817.**

Nature has bestowed Mother Earth with an array of herbals utilized as therapeutics for various human ailments since the origin of life. Bryonia laciniosa (family: Cucurbitaceae) is



Phytochemical and therapeutic perspectives of *Bryonia laciniosa*

one such herb, which finds its mention in various traditional systems of medicine and has attracted current researchers due to its significant therapeutic value. The current article aims to present a literature metasynthesis on Bryonia laciniosa.

Methods: The authors performed scholarly searches for peer-reviewed findings on Bryonia laciniosa and incorporated all the data related to the phytochemical and therapeutic profile of the drug.

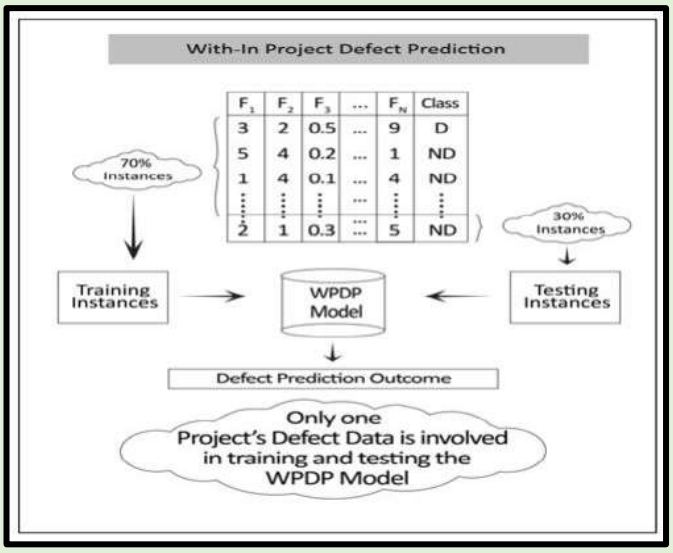
Results: This compilation comprises of Phytochemical and Pharmacological profile of Bryonia laciniosa elaborating its traditional significance and recent research related to its biological activities. The plant exhibits its potential as an antimicrobial, anti-inflammatory, analgesic, antipyretic, anticonvulsant, anti-asthmatic, anticancer, antioxidant, antidiabetic, and aphrodisiac agent. It also displays its benefits in wound healing and ulcerative colitis.

Conclusion: The presence of flavonoids, saponins, terpenoids, anthocyanins, coumarins, alkaloids, polyphenols, tannins, and emodins in this plant is responsible for its various

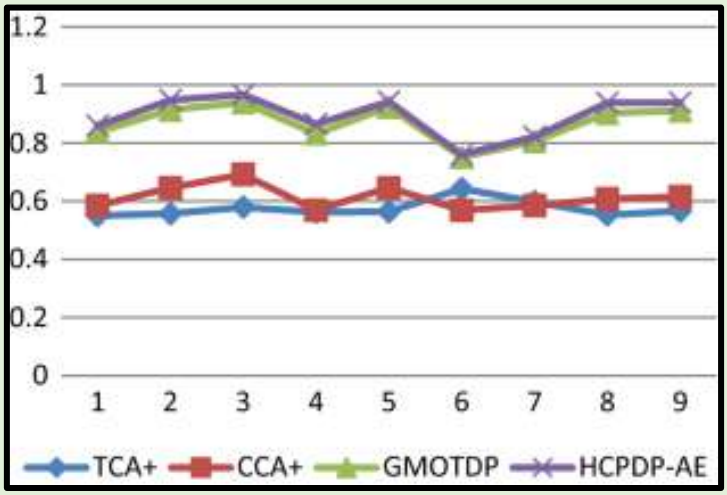
pharmacological activities. The retrospective study provides direction for existing research as well as future studies to support the domain of pharmaceutical and medical sciences.

6. Rohit Vashisht, Syed Afzal Murtaza Rizvi, "Addressing Noise and Class Imbalance Problems in Heterogeneous CrossProject Defect Prediction: An Empirical Study", International Journal of e-Collaboration, Volume 19, Issue 1, 2023. DOI: 10.4018/IJeC.315777

When a software project either lacks adequate historical data to build a defect prediction (DP) model or is in the initial phases of development, the DP model based on related source project's defect data might be used. This kind of SDP is categorized as heterogeneous cross-project defect prediction (HCPDP). According to a comprehensive literature review, no research has been done in the field of CPDP to deal with noise and class imbalance problems (CIP) at the same time. In this paper, the impact of noise and imbalanced data on the efficiency of the HCPDP and with-in-project defect prediction (WPDP) model is examined empirically and conceptually using four different classification algorithms. In addition, CIP is handled using a novel technique known as the chunk balancing algorithm (CBA). Ten prediction combinations from three open-source projects are used in the experimental investigation. The findings show that noise in an imbalanced dataset has a significant impact on defect prediction accuracy.



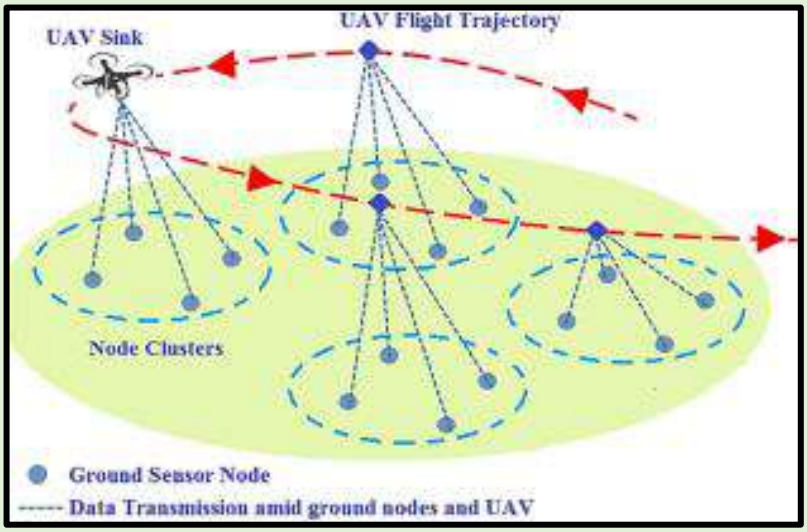
7. Vashisht, R., Rizvi, S.A.M. Feature Engineering to Heterogeneous Cross Software Projects Defect Prediction: A Novel Framework. *Arab J Sci Eng* 48, 2539–2560 (2023). https://doi.org/10.1007/s13369-022-07337-9



Heterogeneous cross-project defect prediction (HCPDP) aims to predict defects in a target project with limited historical defect data via a defect prediction (DP) model trained with defect data of another source project. The accuracy of a DP model is highly dependent on the set of features selected in the feature engineering (FE) phase. The study evaluates the effectiveness of the proposed four-phase HCPDP framework with more focus on the FE phase using the stacking-based ensemble learning method. Auto-encoder (AE), a deep learning-based FE technique is used for the proposed analysis. In addition, two novel techniques to deal with imbalanced datasets and to determine the correlation between features are also proposed in this paper. For comparative analysis, accuracy, recall, F-score, and area under curve (AUC) are used as the output parameters. To compare DP model's output with or without the FE phase, ten prediction pairs from four open-source projects have been considered. The experimental results show that the AE technique is able to reduce the number of features by an average of 50% as compared to data-driven approaches. Also, the proposed model gave better performance in comparison with traditional heterogeneous models with highest AUC of 0.8901.

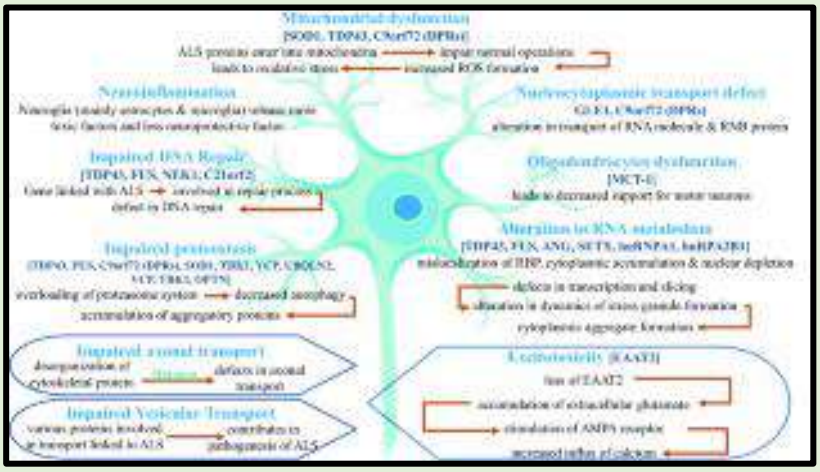
8. Singh, M.K., Choudhary, A., Gulia, S. et al. Multi-objective NSGA-II optimization framework for UAV path planning in an UAV-assisted WSN. J Supercomput 79, 832–866 (2023). https://doi.org/10.1007/s11227-022-04701-2

Recent technological advancements such as IoT-enabled sensor nodes, Global Positioning Systems, Wi-Fi transceivers, and lightweight lithium-ion batteries enable the use of Unmanned Aerial Vehicles (UAV) for data collection in wireless sensor networks. In a UAV-assisted wireless sensor network (UAV-WSN), the sensor nodes are installed at the ground and a UAV works as the sink node. The UAV-based sink flies over the sensed region and receives the data packets of surrounding ground nodes. A UAV-WSN offers improved data collection efficiency as the UAV-based sink avoids the ground obstacles and establishes line-of-sight communication with the ground sensor nodes. However, the UAV's flight trajectory needs to be optimized to achieve minimized UAV energy consumption during flight operation and minimized node energy consumption in data transmission. This paper presents a hybrid data routing protocol for UAV-WSN that considers optimized planning of the UAV's flight trajectory in parallel with energy-efficient data communication amid ground sensor nodes and the UAV. The presented scheme utilizes multi-objective NSGA-II optimization heuristics to optimize UAV's flight trajectory. The developed NSGA-II model evolves into an optimal UAV flight trajectory that simultaneously achieves the objectives of minimized UAV energy consumption, minimized node energy consumption, and maximized average RSSI. A maximized RSSI further brings about a significant increase in network throughput rate. Simulation results depict that the proposed UAV-WSN scheme achieves improved network lifetime and network throughput rate compared to other state-of-the-art protocols.



9. Katiyar D, Singhal S, Bansal P, Nagarajan K, Grover P. Nutraceuticals and phytotherapeutics for holistic management of amyotrophic lateral sclerosis. 3 Biotech. 2023 Feb;13(2):62. DOI: 10.1007/s13205-023-03475-5. Epub 2023 Jan 26. PMID: 36714551; PMCID: PMC9880136.

Amyotrophic lateral sclerosis" (ALS) is a progressive neuronal disorder that affects sensory neurons in the brain and spinal cord, causing loss of muscle control. Moreover, additional neuronal subgroups as well as glial cells such as microglia, astrocytes, and oligodendrocytes are also thought to play a role in the aetiology. The disease affects upper motor neurons and lowers motor neurons and leads to that either lead to muscle weakness and wasting in the arms, legs, trunk, and periventricular area. Oxidative stress, excitotoxicity, programmed cell death, altered neurofilament activity, anomalies in neurotransmission, abnormal protein processing and deterioration, increased inflammation, and mitochondrial dysfunction may all play a role in the progression of ALS. There are presently hardly FDA-approved drugs used to treat ALS, and they are only beneficial in slowing the progression of the disease and enhancing functions in certain individuals with ALS, not really in curing or preventing the illness. These



days, researchers focus on understanding the pathogenesis of the disease by targeting several mechanisms aiming to develop successful treatments for ALS. This review discusses the epidemiology, risk factors, diagnosis, clinical features, pathophysiology, and disease management. The compilation focuses on alternative methods for the management of symptoms of ALS with nutraceuticals and phytotherapeutics.

Reimbursement of Conference Registration Fee

S. No.	Name of Faculty	Designation	Dept.	Name of Conference	Title of Paper	Benefits/ Incentives	Published By
1	Ms. Arti Sharma	Asst. Prof.	CS	International Conference	An exploration of Fog procedures in companson with loT, design, and assessment issues	4720	IEEE
2	Ms. Neha Shukla	Asst. Prof.	CS	International Conference	Classification of Patients heartbeat obtained by ECG using Active Learning	4000	Springer
3	Dr. Varun Gupta	Associate Professor	EN	International Conference	Adaptive autoregressive modelling-based ECG Signals analysis for health monitoring	6000	Scopus

Book Chapter Publication Incentives

S. No.	Name of Faculty	Designation	Dept.	Title of Book/ Chapter/ Monograph	Incentive Amount	Name of Publishing House
1	Dr. Subodh Kumar Sharma	Prof.	ME	Addictive Manufacturing in Industry 4.0	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.	Dr. Binkey Srivastava	Prof.	MBA	Management Development Workshop was organized by Institute of Management Technology (IMT), Ghaziabad in association with GMA	1200/-	Workshop

Collaborative Research and Development Presentations

S. No.	Name of Department / School	Name of Presenter	Topic of Presenter	Dated of Presentation
1.	CS	Mr. Aditya Dev Mishra	Motivation for SLR	11-Mar-23
		Mr. Amit Kumar Singh Sanger	Cloud computing security	25-Mar-23
2.	CSE	Nishu Gupta	Human activity recognition	11-Mar-23
		Dr. Gaurav Agarwal	Emotion Recognition using ML	
		Ankur Bhardwaj	Despeckling of Ultrasound Images using filters Designed from Image based Parameters	25-Mar-23
		Mani Dwivedi	Machine Learning Based Intrusion Detection Model	
3.	CSIT	Ms. Ashima Arya	A cognitive model of navigation and path finding using cellular automata agent	11-Mar-23
		Youddha Beer Singh	Speech Emotion Recognition using CNN	25-Mar-23
4.	EN	Prof. Sheetal	Chaos control in power system	11-Mar-23
5.	IT	Prof. Shashank Yadav	Image Pre-processing and segmentation	11-Mar-23
		Prof. Sanjeev kumar Diwedi	Authentication Protocols	
		Prof. Mukul Aggarwal	BraTS Dataset Analysis on Different Deep learning models	25-Mar-23
		Prof. Analp Pathak	Opinion Mining using collaborative filtering approach	
6.	KSOP	Ms Sakshi Garg	Formulation and Evaluation of Orodispersible Tablets of Trimethobenzamide HCl	11-Mar-23
		Vidhu Saxena	Neuroprotective role of noscapine in focal cerebral ischaemia reperfusion injury	
		Kapil Sachan	Arundo donax L: A systemic update.	

7.	**MCA**	Ms. Komal Salgotra	Diabetic disease prediction using learning methods.	11-Mar-23
		Ms. Shweta Singh	Smart City Model	
		Mr. Prashant Agrawal	ML applications	25-Mar-23
		Ms. Neelam Rawat	Survey on Software Defect Prediction Using Machine Learning Techniques	
		Mr. Amit Kr. Goyal	Blockchain	
8.	**ME**	Dr. Pratibha Kumari	Optimisation of GMAW parameters	11-Mar-23
		Dr. Subodh Sharma	Performance analysis of Biodiesel with nanoparticles in CI engine	25-Mar-23
9.	**KSOM**	Dr. Prateek Gupta	Emerging Technologies for business	25-Mar-23

CRDC Presentation Series

Activity Report November 2022

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

The topic of Presentation: **Formulation and Evaluation of Orodispersible Tablets of Trimethobenzamide Hydrochloride**

Name of Presenter: Ms. Sakshi Garg

Designation: Assistant Professor (Department of Pharmaceutics)

Name of the Department: KIET School of Pharmacy

Date: 11.03.2023

Venue: Pharmacology lecture hall, F block second floor, KSOP

Relevance of the topic: The topic was related to the development of Anti emetics dosage form and characterization was done to optimize the formulation.

Outcome: The research work is communicated in Current Drug Design.

No. of Participants: 29

Head of Dpt.: Prof. (Dr.) K. Nagarajan

Session Coordinator: Prof. (Dr.) Ashu Mittal (Professor)

About Presenter (Maximum 100-150 words)
Ms. Sakshi Garg is working as an Assistant Professor in the Department of Pharmaceutics at KIET School of Pharmacy and holds about 5 years of teaching experience. She is pursuing PhD from Banasthali Vidyapith, Rajasthan. She has about 6 publications in various international and national journals. Her key areas of research are pharmaceutics and formulation development.

Topic of Presentation: Ethnopharmacological exploration of the plant Arundo donax

Name of Presenter: Kapil Sachan

Designation: Assistant Professor (Department of Pharmacology)

Name of the Dept.: KIET School of Pharmacy

Date: 11.03.2023

Venue: Pharmacology lecture hall, F block second floor, KSOP

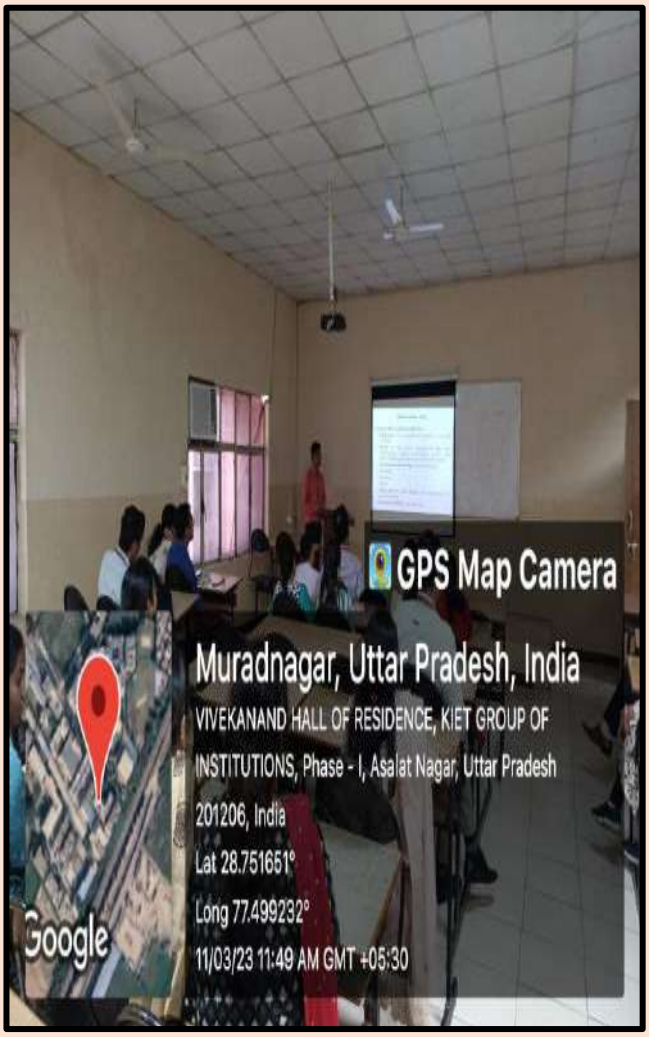
Relevance of the topic: The topic was related to updated information on the ethnopharmacological exploration of the plant *Arundo donax* L. The plant has been reported to have promising pharmacological activities against different models.

Outcome: A review article has been communicated in the journal "INDIAN DRUGS". It has been accepted and publication is awaited.

No. of Participants: 29

Head of Department: Prof. (Dr.) K. Nagarajan

Session Coordinator: Prof. (Dr.) Ashu Mittal (Professor)



About Presenter (Maximum 100-150 words)
Kapil Sachan is working as an Assistant Professor in the Department of Pharmacology at KIET School of Pharmacy and holds about 11 years and 5 months of industrial and teaching experience. He is an author and editor of three books published in different book titles for D. Pharm. His key areas of research are Ethnopharmacology, standardization of drugs, and drug analysis.

Topic of Presentation: Neuroprotective role of noscapine in focal cerebral ischaemia reperfusion injury

Name of Presenter: Prof. Vidhu Saxena

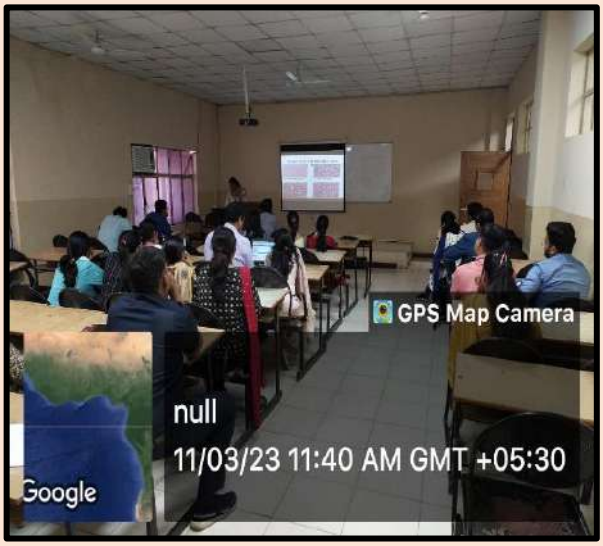
Designation: Assistant Professor (Department of Pharmacology)

Name of the Department: KIET School of Pharmacy

Date: 11.03.2023

Venue: Pharmacology lecture hall,

F block second floor, KSOP



Relevance of the topic: The topic was related to cerebral ischaemia, a common brain disorder, and reperfusion injury wherein a rat animal model was examined for assessing the therapeutic role of the drug noscapine in this disease.

Outcome: The research work got published in the Journal "Naunyn-Schmiedeberg's Archives of Pharmacology" with Impact Factor 3.19

No. of Participants: 29

Head of Department: Prof. (Dr.) K. Nagarajan

Session Coordinator: Prof. (Dr.) Ashu Mittal (Professor)

About the Presenter (Maximum 100-150 words):
Vidhu Saxena is working as an Assistant Professor in the KIET School of Pharmacy at the KIET Group of institutions, Delhi-NCR, Ghaziabad. She is also the Assistant Head of Placements to looks after the placement requirements of pharmacy students. Prior to joining academics, she has industry work experience with reputed pharmaceutical organizations Cipla and United Biotech wherein she showcased her skills in various domains and capacities. Currently, she is pursuing her PhD from the Indian Institute of Health Management and Research (IIHMR) in Pharmaceutical Management and has a keen interest in Public Health and allied field.

Efforts in Industry-Academia Relationship

Memorandum of Understanding (MoU) between Tata Power Delhi Distribution Limited, Delhi, and KIET Group of Institutions, Delhi-NCR, Ghaziabad

On February 13, 2023, Tata Power Delhi Distribution Limited, Delhi, and KIET Group of Institutions, Delhi-NCR, Ghaziabad, signed a Memorandum of Understanding (MoU) for enhancing learning, training, industrial skills, and career-building opportunities and organizing industrial. Mr. Pravin Agarwal, Chief Human Resource Officer of Tata Power DDL, and Dr. (Col.) Amik Garg, Director of KIET Ghaziabad, signed and exchanged the MOU. The MoU was witnessed by Mr Anoop Nandy, Mr Anoop Dhawan, Mr John Edwin, and Mr Rajiv Chugh from Tata Power DDL, as well as Dr Neeraj Kumar Gupta (Professor and Head, EN) and Dr Brijesh Singh (Associate Professor) from the Department of Electrical and Electronics Engineering, KIET. Dr Brijesh Singh and Mr John Edwin coordinated the exchange program jointly.

The objectives of the MOU include cooperation in the production of cutting-edge equipment and research projects, as well as the establishment of technical facilities and advanced laboratories. Additionally, the MOU stipulates certificate courses, expert discussions, mentoring, specialized certification programs in innovative power distribution technology and human resource practices, and a "Special Digital Utility Professional Certification Programme" for KIET students and faculty.

The Memorandum of Understanding (MoU) between Tata Power Delhi Distribution Limited (TPDDL) and KIET Group of Institutions is a significant step towards strengthening industry-academia relations for collaborative research. The MoU aims to provide a platform for both organizations to work together toward achieving common goals in the field of power distribution. The MoU outlines various areas of collaboration, including joint research, development projects, sharing of knowledge and expertise, and conducting training programs for the employees and students of both organizations. The collaboration is expected to yield innovative solutions that can improve the efficiency, reliability, and sustainability of the power distribution network. One of the primary objectives of the MoU is to leverage the expertise of both organizations to find solutions to the challenges faced by the power distribution sector. With TPDDL's extensive experience in power distribution and KIET's academic resources, the collaboration can result in breakthrough innovations that can benefit the industry and society at large. The MoU also highlights the importance of promoting entrepreneurship and innovation in the power sector. Through collaboration, students and employees of KIET will have the opportunity to work on live projects and gain practical experience in the field of power distribution. This hands-on experience can help them develop innovative solutions that can address the challenges faced by the industry. Furthermore, the MoU also emphasizes the importance of sustainability and renewable energy. The collaboration aims to promote the adoption of renewable energy sources and develop sustainable solutions for power distribution. This is a crucial step towards achieving the goal of a cleaner and greener energy

future. The MoU also provides for the exchange of technical know-how and best practices between the two organizations. This will facilitate the transfer of knowledge and expertise from TPDDL to KIET, and vice versa. The exchange of ideas and practices can result in better decision-making and more efficient operations for both organizations.

Overall, the MoU between TPDDL and KIET is a step towards building a strong industry-academia relationship. By working together, both organizations can leverage their strengths to address the challenges faced by the power distribution sector. The collaboration can result in innovative solutions that can benefit the industry, society, and the environment. It also provides a platform for the students and employees of KIET to gain practical experience and develop skills that can help them excel in the power sector. Thus, the MoU between TPDDL and KIET is a win-win situation for both organizations. The collaboration can lead to mutually beneficial outcomes that can contribute to the development of the power distribution sector. It is a step towards creating a sustainable energy future and promoting innovation and entrepreneurship in the power sector.

Dr. Brijesh Singh
Assistant Dean
Industrial & Academia Research Collaboration & Promotion
KIET, Delhi-NCR, Ghaziabad

Student's Corner

Automatic Waste Collector with Enhanced Security System

The project is focused on making the campus of any institute smart and emphasizes making everything autonomous. Waste management is one of the main concerns these days. The government is spreading awareness to keep the surrounding area clean and for this, some campaigns like "Swachh Bharat Abhiyan" has also been launched to create awareness among the people.

The proposed project includes a smart waste collector which will collect waste material from all the dustbins within the campus automatically. The collector will communicate with all the dustbins with the help of sensors and will move toward them one by one. The campus dustbins are equipped with Zigbee modules so as to bring the entire campus within the range of (Zigbee) wireless communication. All the students basically junior students, blind/disabled persons, and girls will be given a bracelet equipped with a Zigbee module that contains an allotted ID as a contact number and whenever they will require help (for blind/disabled persons) or feel unsafe (for girls), they will press a button which will send warning signals to the control room of the college. This will provide security to the students from ragging and will also keep the girls safe. In this way, the security is enhanced within the campus.

Manish Kumar Verma &
Pranjal Kumar
Students
Electronics and Communication
Engineering Department

The work has been carried out in the Centre of Excellence for NI-LabView under the supervision of Dr. Parvin Kumar Kaushik, Associate Professor, ECE Department.

Quick Talent Search Tool

An AI-powered talent search tool that matches candidates to job requirements based on their skills and experience using machine learning algorithms. AI-powered writing tool that assists you in creating job descriptions that attract qualified candidates. It analyses your writing ability and makes suggestions to improve the appeal of your job descriptions to respective candidates.

We are developing QTST for SARACA Solutions at the EEE Department of the KIET Group of Institutions, with Mr. Devershi Prakash (EEE Dept.), Dr. Neeraj Gupta (HOD EEE Dept.), Mr Salim (Industry Faculty), and Mr. Praveen Tyagi. (Lab In-Charge EEE Dept.). We got consultancy worth Rs 112099/- as tuition fee. For selected candidates, we are currently developing an AI-based interview platform. AI-based Quick Talent Search Tools (QTST) can be very beneficial to the software industry because they help in quickly and efficiently finding the right talent.

Devershi Prakash
Student
EN Department

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

KIET Ethics Policy for Students and Faculty Members

Plagiarism means copying another person's text or ideas and passing the copied material as your own work without acknowledging them. According to University Grant Commission (UGC), plagiarism means 'taking someone else's work or idea and passing them as one's own', and it will apply to the 867 universities and their affiliated institutions that report to the nation's education regulator, the University Grants Commission (UGC). Plagiarism not only is legally wrong but also morally corrosive. Any report/thesis/research paper based upon the writing of others should acknowledge every source used. Plagiarism is a common and serious issue in the academic field and elsewhere. Plagiarism in academia can occur in the text or source code. It eases one's task at the cost of another person. In many cases, plagiarism occurs due to a lack of proper acknowledgment of work done by others.

This policy has been framed as per guidelines proposed by AKTU vide their letter no. AKTU/2019/1997 dated 7 June 19.

1. The scope of plagiarism

(a) Plagiarism may be due to:

- **Copying** (using another person's language and/or ideas as if they are your own).
- **Collusion** (unauthorized collaboration).

(b) Plagiarism includes:

- **Directly quoting** another person's language, data, or illustrations without clear indication that the authorship is not your own and due acknowledgement of the source.

- **Paraphrasing** the critical work of others without due acknowledgement–even if you change some words or the order of the words, this is still plagiarism if you are using someone else's original ideas and are not properly acknowledging it.
- **Using ideas** taken from someone else without reference to the originator.
- **Cutting and pasting** from the Internet to make a 'pastiche' of online sources.
- **Colluding** with another person, including another candidate (other than as might be permitted for joint project work).
- **Submitting** as part of your own report or dissertation someone else's work without identifying clearly who did the work (for example, where research has been contributed by others to a joint project).
- **Borrowing** words or ideas from other person or sources without citation.
- **Using** software or online translator to translate material without citation.
- **Buying** assignments from other sources.
- **Paying** for another to contribute to your work without citation.
- **Reproducing** information that is not common knowledge or self-evident without citation.
- **Forgetting** to cite sources without giving credit where credit is due.
- **Misquoting** to the cited sources without giving credit where credit is due.
- **Passing off** as one's own pre-written papers from the Internet or other sources.

2. How to avoid plagiarism

The following guidelines should be taken to avoid plagiarism, self-plagiarism and other questionable writing practices:

Guideline 1: An ethical writer always acknowledges the contributions of others to his/her work.

Guideline 2: Any verbatim text taken from another source must be enclosed in quotation marks and be accompanied by a citation to indicate its origin.

Guideline 3: When we summarize others' work, we use our own words to condense and convey others' contributions in a shorter version of the original.

Guideline 4: Whether we are paraphrasing or summarizing we must always identify the source of our information.

Guideline 5: When in doubt, as to whether a concept or fact is common knowledge, provide a citation.

Guideline 6: Follow the basic elements of copyright law, as it has been found that some instances of plagiarism, self-plagiarism, and even some writing practices that might otherwise

be acceptable (e.g., extensive paraphrasing or quoting of key elements of a book) can constitute copyright infringement.

Guideline 7: Only those individuals who have made substantive contributions to a project merit authorship in a paper.

Guideline 8: Faculty-student collaborations should follow the same criteria to establish legal authorship. Mentors must exercise great care to neither award authorship to students whose contributions do not merit it, nor to deny authorship and due credit to the work of students.

Guideline 9: Give oneself self-enough time when writing a report/thesis/research paper. It is easy to miss something when we are rushed.

Guideline 10: Proofreading is required to avoid plagiarism.

Guideline 11: Don't use another student's essay without their consent. Also, don't pass it as your own work.

Guideline 12: Include a reference page at the end of the report/thesis/research paper/PPTs.

Guideline 13: Cite the online sources used.

Guideline 14: Facts or common knowledge need not be cited.

3. Plagiarism Checking Process

The plagiarism-checking process shall contain the following steps:

1. The submitted B.Tech. project reports/M.Tech. thesis/Journal and conference research papers shall be checked for plagiarism through **Turnitin** software available in the KIET by choosing "10 continuous similar words".
2. For B.Tech. and M.Tech. project report/thesis, "**Literature Review**" chapter must be included in plagiarism checking.
3. The maximum similarity index should not be more than 20% for a complete project report/thesis and should not be more than 5% in case of individual references including references from the author's own previous works.

4. Self-plagiarism

If an essay or dissertation builds on an individual's previous work, it is essential that this is clearly identified in the text and is appropriately referenced as if it were written by a different person. The assessors should be in no doubt as to what work the student has completed in his/her current degree course that will be assessed. When submitting a project report/thesis, students will declare that no part of their work has already been submitted, or is being submitted, for any other project work of this or another university for any academic program.

Self-plagiarism occurs when a student submits his or her own previous work, or mixes parts of previous works, without permission from all professors involved. Self-plagiarism also applies

to submit the same piece of work for assignments in different classes without previous permission from the professors.

5. Levels of Plagiarism

Plagiarism would be quantified into the following levels in ascending order of severity for the purpose of its definition:

i. Level 1: Similarities above 20% to 40% (invokes moderate penalty)
ii. Level 2: Similarities above 40% to 60% (invokes substantial penalty)
iii. Level 3: Similarities above 60% (invokes severe penalty)

Note: All references, bibliography, table of content, preface, acknowledgement, generic terms, laws, keywords, standard symbols, and equations **must be excluded** from the plagiarism check.

6. Penalties

Penalties in the cases of plagiarism shall be imposed on students pursuing studies at the level of UG, PG, and faculty and staff only after academic misconduct on the part of the offender has been established without doubt, when all avenues of appeal have been exhausted and individual in question has been provided enough opportunity to defend himself or herself in a fair or transparent manner.

(a) Penalties for Students

(i) **Level 1: Similarities above 20% to 40%-** Such students shall not be given any mark and/or credit for the plagiarized script and shall be asked to submit a revised script within a stipulated time not exceeding 1 month.

(ii) **Level 2: Similarities above 40% to 60%-** Such student shall be asked to submit a revised script within a stipulated time not exceeding 1 month and 10% marks shall be deducted from the scored marks.

(iii) **Level 3: Similarities above 60%-** Such student shall be asked to submit a revised script within a stipulated time not exceeding 1 month and 20% marks shall be deducted from the scored marks.

Note 1: Penalty on repeated plagiarism: Such a student shall be punished for the plagiarism of one level higher than the previous level committed by him/her. In case where plagiarism of the highest level is committed then the punishment for the same shall be operative.

Note 2: Penalty in case where the degree/credit has already been obtained: If plagiarism is proved on a date later than the date of award of degree or credit as the case may be then his/her degree or credit shall be put in abeyance for a period recommended by the DRC and approved by the RDC.

(b) Penalties for Faculty, Staff, Researcher

Level 1: Similarities above 20% to 40%- Shall be asked to withdraw the manuscript submitted for publication and shall not be allowed to publish any work for a minimum period of one year.

Level 2: Similarities above 40% to 60%- Shall be asked to withdraw manuscript submitted for publication and shall not be allowed to publish any work for a minimum period of two years and shall be denied a right to one annual increment and shall not be allowed to be a supervisor to any UG, PG student for a period of two years.

Level 3: Similarities above 60%- Shall be asked to withdraw manuscript submitted for publication and shall not be allowed to publish any work for a minimum period of three years and shall be denied a right to two successive annual increments and shall not be allowed to be a supervisor to any UG, PG student for a period of three years.

Note 1: Penalty on repeated plagiarism: Shall be punished for the plagiarism of one level higher than the previous level committed by him/her. In case where plagiarism of the highest level is committed then the punishment for the same shall be operative. In case the level 3 offence is repeated then the concerned person shall be dismissed.

Note 2: Penalty in case where the degree/credit has already been obtained: If plagiarism is proved on a date later than the date of award of benefit or credit obtained as the case may be then his/her benefit or credit shall be put in abeyance for a period recommended by the DRC and approved by the RDC.

7. Appeal

Penalties in the cases of plagiarism shall be imposed on students pursuing studies at the Bachelor's and Master's level only after academic misconduct on the part of the individual has been established without doubt, when all avenues of appeal have been **exhausted** and the individual in question has been provided enough opportunity to defend himself or herself in a fair or transparent manner.

8. Detection/Reporting/Handling of Plagiarism

If any member of the academic community suspects with appropriate proof that a case of plagiarism has happened in any document related to the submission of a **Bachelor's and master's project report/thesis/dissertation and research papers**, he or she shall report it to the Research and Development Committee.

9. Departmental Research Committee (DRC)

i. All departments shall form a DRC whose composition shall be as given below:
   a. Chairman: Head of the department.

b. Member: Senior Academician who has good credentials in Research (SCI Papers, Funded projects, Patents, etc.) to be nominated by the Head of the department.

c. Member: A person well versed with anti-plagiarism tools, to be nominated by the Head of the department.

ii. The DRC shall motivate the faculty members and students for publishing research papers in Indexed journals- SCI/SCI-E/SSCI/ESCI/SCOPUS and full papers in Conference Proceedings/ presenting papers in Conferences, Seminars, Workshops, Symposia (conferences in association with IEEE/ Springer/ Elsevier/ ACM/ Wiley/ IPC.

iii. DRC shall also motivate the faculty members for writing research proposals for various government agencies and for publishing patents which in turn improve the NIRF Ranking.

iv. All faculty members are required to motivate and involve students in writing Research papers.

v. Faculty members shall inform the members of DRC about the submission of Research papers in reputed Journals/ Conferences.

vi. The DRC shall have the power to give recommendations including penalties with due justification for Bachelor's/ Master's project reports/thesis/dissertations submitted by a student as well as research papers of students submitted for academic credits.

vii. The DRC shall send the report after investigation and the recommendation on penalties to be imposed, to the Research and Development Committee within a period of 30 days from the date of receipt complaint /initiation of the proceedings.

viii. Final course of action should be decided by the Head of the Institution.

ix. Faculty shall submit the reprint of the paper published in the Journal/ Conference along with the Plagiarism report to DRC. The respective HoD shall submit the recommendation to the office of Dean R & D and Associate Dean, Implementation of Research and Development shall verify the credentials submitted by the respective HoD and he shall put up the recommendation to Dean R & D. Faculty member shall upload the published paper in achievement section of KIET ERP only after getting the approval from Dean R & D.

x. Student shall submit the reprint of the paper published in a Journal/ Conference with application to Chairman DRC/HoD along with proofs of registration, TA-DA. The DRC shall check the Plagiarism and recommend it to the Registrar's Office. The Registrar's office shall draft the link page and maintain the data of each student and shall submit the recommendation to the office of Dean R & D and Associate Dean,

Implementation of Research and Development shall verify the credentials and shall put up the recommendation to Dean R & D to further approval from Director Office.

10. Research and Development Committee

i. A panel of the following member:
   a. Dean R & D
   b. Associate Dean, Implementation of Research and Development
ii. The R&D Committee shall follow the principles of natural justice while deciding about any allegation of plagiarism against a student or faculty.
iii. The R&D Committee shall have the power to assess the level of plagiarism and recommend penalties accordingly within a period of 30 days.
iv. Dean R & D shall put up the recommendation for further approval of necessary action for violating the Ethics policy to the Director.

11. Some points to curb plagiarism

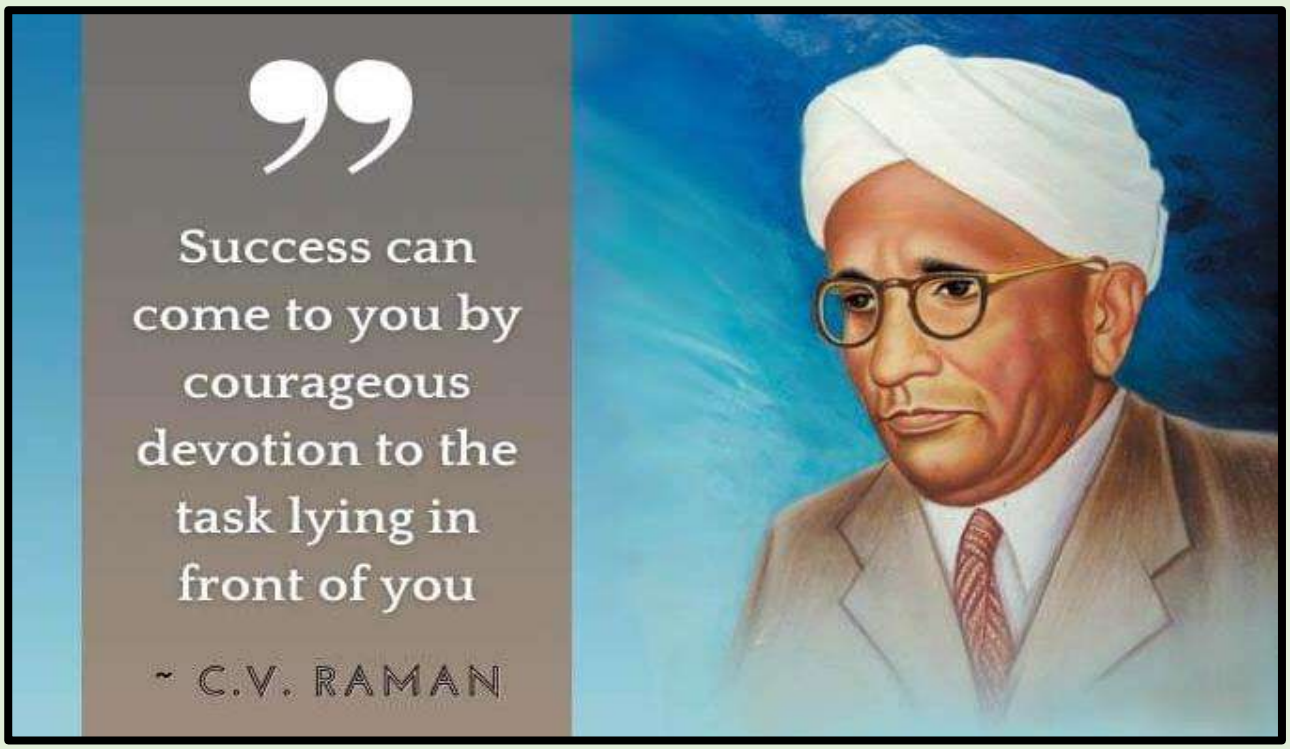
i. Undertaking should be taken from students indicating original and plagiarized free work. Plagiarism report should be made available in the form of a certificate that must be generated from the tool used to check the thesis/report, which subsequently will be attached to the thesis/document during submission.
ii. Each supervisor shall submit a bonafide certificate indicating the original and plagiarism-free work of a student.
iii. Department must maintain the softcopies of submitted documents/reports in their databases for any kind of future reference.
iv. Undertaking shall be taken from all the faculty members of the Institute.
v. If a faculty member is mentioning KIET name or taking advantage of any document/ paper etc., then he/she is bound by the ethics policy.

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


Centres of Excellence
KIET-MBS Research & Development
Centre for Bio-Medical Instruments
Centre for Advanced Woodworking
Automotive Mechatronics Centre
in Collaboration With Mercedes-Benz India Pvt. Ltd.


Research and Development Efforts in KIET
A Glimpse of Various Research Labs in KIET
www.kiet.edu



KIET Group of Institutions

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