



**K.R. MANGALAM UNIVERSITY**  
THE COMPLETE WORLD OF EDUCATION

## SCHOOL OF BASIC AND APPLIED SCIENCES

**QUARTERLY NEWSLETTER**

**APRIL – JUNE 2024**

**FRONTIERS IN APPLIED SCIENCES**



[www.krmangalam.edu.in](http://www.krmangalam.edu.in)

S. NO.	Table of Content
01	From the Editor's Desk
02	Word from the Leadership
03	Words from Dean, School of Basic and Applied Sciences
04	About School: Vision & Mission
05	Our Achievers- Faculties, Students
06	Collaborations
07	Scientific Creative Articles
08	Research Updates
09	Events Corner
10	SBAS in News
11	Community Connect
12	Internships
13	Our Alumni
14	Student's corner
15	Gallery

## From the Editor's Desk

**Dr. Neeraj Kumari**

Assistant Professor (Chemistry)



Dear Readers,

Welcome to the latest edition of Frontiers in Applied Sciences, a quarterly newsletter published by School of Basic and Applied Sciences.

In this edition, we are excited to present a diverse range of groundbreaking research, events, and thoughts of the faculties and students. This quarterly

newsletter highlights the profound impact of research in the fields of chemistry, physics, mathematics and forensic sciences, valuable articles, poems, stories by faculties and students. Firstly, the research articles delve into cutting-edge discoveries and innovative solutions in fields such as chemistry, physics, mathematics and forensic sciences. These contributions highlight our dedication to pushing the boundaries of scientific exploration. Additionally, we are delighted to feature creative expressions through poetry and stories that capture the essence of imagination and storytelling of students. These literary pieces not only entertain but also inspire thought and reflection of students. Furthermore, we proudly feature events that foster academic discourse and collaboration, enriching our community's intellectual fabric. Additionally, we highlight the achievements of our students, including their internships and notable contributions to their fields. I extend my gratitude to all authors and contributors whose valuable insights continue to enrich this newsletter. Your dedication ensures that Frontiers in Applied Sciences remains a cornerstone for researchers and practitioners alike.

Thank you for being part of our journey towards pushing the boundaries of applied sciences. We invite you to explore this issue and embark on a journey of discovery.

Warm regards







## Word from the Leadership



Dear Students, and Faculty Members of the  
K R Mangalam University Community,

I am honored to address you today as we embark on another  
academic year filled with promise, potential, and the pursuit of  
excellence. At K R Mangalam University, we are committed

to nurture the intellectual and personal growth of our students, fostering an environment that encourages innovation, creativity, and critical thinking. Our university stands as a beacon of knowledge and a hub of academic and research excellence. Our dedicated faculty members are not just educators but mentors who guide our students towards achieving their highest aspirations. They are at the forefront of their fields, contributing to groundbreaking research and advancing knowledge across disciplines.

To our students, I urge you to embrace the opportunities that lie ahead. Engage fully in your studies, participate in extracurricular activities, and take advantage of the resources available to you. Remember, your time here is not just about acquiring a degree but about shaping your character and honing the skills that will serve you throughout your life.

We are also deeply committed to community engagement and social responsibility. As a university, we aim to contribute positively to society by addressing pressing issues through research and fostering a spirit of service among our students. We believe that education goes beyond the classroom, and it is our duty to instill a sense of responsibility and empathy in our future leaders. Innovation is at the heart of our mission. We continuously strive to incorporate the latest advancements in technology and pedagogy to enhance the learning experience. Our state-of-the-art facilities and cutting-edge programs are designed to prepare our students for the challenges of the modern world. In conclusion, I would like to express my gratitude to our faculty, staff, students, and their families for their unwavering support and dedication. Together, we will continue to uphold the values of excellence, integrity, and inclusivity that define K R Mangalam University.

Let us look forward to a year of growth, discovery, and success.

Thank you.

Warm regards,

**Vice Chancellor**

K R Mangalam University





## Words from Dean, School of Basic and Applied Sciences



As Dean of the School of Basic and Applied Sciences, I take great pride that since inception in 2013, the school has maintained the tradition of offering real-world, immersive education to students through its undergraduate, post graduate and PhD programs. We offer undergraduate

and post graduate programs in Physics, Chemistry, Mathematics and Forensic Sciences and PhD programs in Physics, Chemistry, Mathematics. The goal of each of these degrees is to prepare our graduates to use their knowledge for the benefit of society as well as for the success of organizations.

We enable students to lead innovation and constructive transformation by providing them with a modern and innovative morally sound education that is targeted at achieving academic excellence, developing professional competence and tackling the challenges of social & environmental issues. We prepare our graduates to use their distinct abilities for the benefit of mankind by fostering an inclusive learning environment and placing a strong emphasis on societal responsibility. We encourage students to participate in several fascinating events on campus, including scientific development programs, industry immersion, global partnerships, community outreach, summer internship as well as exposure to sports and cultural programs for holistic development. Our highly qualified and accomplished faculty use a combination of vast industrial experience and rigorous applied research to drive change and improve society by providing solutions to real world problems.

I extend an invitation to everyone who is eager to learn more and advance their professions to learn more about our institution online or by paying us a visit. I'm hoping you'll become a part of our community of lifelong learners.

Regards

**Dr. Meena Bhandari**

Dean, School of Basic and Applied Sciences





## About School: Vision & Mission

School of Basic & Applied Sciences (SBAS) at K.R. Mangalam University imparts knowledge in the most dynamic field to disseminate industry-relevant knowledge via hands-on learning across various disciplines. The school offers undergraduate, postgraduate & doctoral degrees in Physics, Chemistry, Mathematics, and Forensic Science. SBAS provides a solid foundation in the natural and applied sciences. Our faculty members foster an environment of exploration and critical thinking. Students embark on a journey of scientific discovery and innovation, preparing for careers that shape the world.

Unlike traditional methods, our graduates are not just theorists but problem solvers ready to address real-world challenges. SBAS fosters innovation, critical thinking, and a practical understanding of science and beyond.

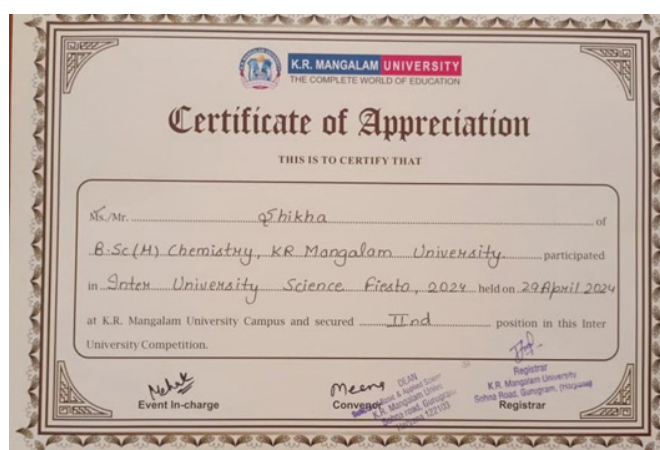


# OUR ACHIEVERS

## Faculty's Achievement:

1. Dr. Rishi Ranjan and Dr. Ritika Khattri received seed grant of Rs. 6,20,000/- from KRMU for Research Project entitled 'Synthesis of Metal Oxide Nanostructures for Gas Sensing Applications'.
2. Dr. Rajni Gautam and Dr. Neeraj Kumari received seed grant of Rs. 1,68,509/- from KRMU for Research Project entitled 'Investigation of the Properties of rare Earth Metal Doped Metal Oxide Nanoparticles & Clay Supported Metal Oxide Nanoparticles'.

In the Science - Fiesta 2024, Aryan scored first position in model making competition followed by Shikha Yadav, Vivek and Ritu who scored second position. The event was conducted by the School of Basic and Applied Sciences at K.R. Mangalam University, Gurugram-122103.



Mr. Sahil from Forensic Science scored 3rd position in Forensic Photography conducted during BHRAM: 1st National Workshop on Cyber Forensic and Lie Detection organized by department of Forensic Science, School of Basic and Applied Sciences at K. R. Mangalam University Gurugram on 26th April 2024.





## COLLABORATIONS



MoU was signed between School of Basic and Applied Sciences, K. R. Mangalam University and RJ Forsec Solution Pvt Ltd on 26th April 2024. This MoU aims to enhance collaboration in the field of digital forensics and cybersecurity. RJ Forsec Solution Pvt Ltd specializes in digital forensics and fraud investigations. The partnership is expected to facilitate joint research projects, knowledge exchange, and internship opportunities for students in these specialized fields.

MoU was signed between School of Basic and Applied Sciences, K. R. Mangalam University and Shivaji college, University of Delhi on 2nd May 2024. This MoU signifies a commitment to collaborate in academic and research activities between KRMU's School of Basic and Applied Sciences and Shivaji College. The partnership aims to enhance educational opportunities, facilitate joint research projects, and promote knowledge exchange in various disciplines offered by both institutions. specialized fields.



## SCIENTIFIC & CREATIVE ARTICLES

### **Chemistry: The Heart of All Industries**

Chemistry is the study of the properties of matter and their behaviour. It is also known as central science or core science as it lies between physics and biology and serves as a fundamental framework for comprehending various basic and applied scientific fields. From the moment of wake up to go to bed, chemistry plays an important role as it affects various phases of the daily routine of our life.

Food preservation and production on a large scale is done with the help of chemistry. Preservatives including sodium benzoate, sulfur dioxide, sodium sorbate and propionic acid may be used to inhibit bacterial and yeast growth. These preservatives are also beneficial for the prolongation of shelf-life food. Different formations such as spices, goods and processing

aids that are used to enhance the flavour of nutrition along with this it also works out the food products. Saponification reaction of sodium and potassium salts with fatty acid viz. stearic acid are used in preparing these soaps but when we talk about hand sanitizers; alkyl long chain Sodium benzenesulfonate or bisulphates are being utilized for its manufacture.

Chemicals known as pharmaceuticals are used to treat illnesses and provide pain relief. The pharmaceutical business has benefited greatly from chemistry. The ingredients present in drug are the chemicals. These chemical compounds bind to the receptors in our body and block the transmitters causing pain.

The textile industry makes use of diverse uncooked substances consisting of nylon, cotton, silk, jute, polyester, and more to create fabric,

luggage, towels, nets, and carpets. these materials undergo numerous chemical strategies, together with bleaching, dyeing, printing, and completing, to beautify their cleanliness, smoothness, and ordinary exceptional. throughout those chemical operations, cleansing and polishing dealers are applied to purify and refine the raw materials.

Nowadays, environmental pollution is a big concern for all of us and chemistry has a significant role in environmental protection. Chemistry is the main focus and centre whenever we discuss environmental pollution. Chemistry plays a significant role in understanding, examining and protecting the environment. We may also investigate and analyze environmental pollutants, consisting of pollutants of the

air, water, and soil, and the usage of the essential thoughts of chemistry. Although it's a commonplace misperception that the chemical industry and chemistry are more often than not accountable for environmental pollution, advances in chemical research and era have also been used to eliminate pollutants from the air, water, and soil. green chemistry, whose primary purpose is to create chemical merchandise and strategies that decrease the use and production of unsafe substances, is an excellent illustration of environmentally friendly chemistry.

**Dr. Neeraj Kumari**

Assistant Professor (Chemistry)

School of Basic and Applied Sciences

## Sensor Technology Offers Hope for Combating Air Pollution and Protecting Public Health

Air pollution is one of the leading problems in environmental protection and human health. Among various air pollutants, nitrogen dioxide (NO<sub>2</sub>) is a toxic gas pollutant generated by combusting fossil fuels in various industrial sectors. According to the world health organization (WHO) report, NO<sub>2</sub> exposure down to a few parts per billion (ppb) level increases the incidence rate of respiratory diseases such as asthma. In New Delhi, the annual average concentration of NO<sub>2</sub> in the air is regulated to be 20 ppb or lower. There is an increasing need for NO<sub>2</sub> sensors that can precisely monitor NO<sub>2</sub> at room temperature with low power consumption and ultra-high sensitivity.

In recent times, the use of toxic gases which are potentially fatal to humans has been increasing due to the development of high-tech industries, including semiconductor manufacturing. India's semiconductor industry is growing rapidly, with the market expected to reach \$11 billion by 2027. The government's efforts to strengthen the semiconductor ecosystem include increased capital outlays, supportive policies, and international partnerships. In

this regard, there is a growing need to utilize semiconductors in the gas sensors market as well. In recent years, semiconductor gas sensors (or metal oxide sensors, MOX) have become smaller and more powerful. At the same time, they also continue to consume less energy. Thanks to innovative manufacturing methods, miniaturized gas sensors can currently be produced in large volumes and with a low-cost factor.

In the past few years, a new material approach of fusing a two-dimensional (2D) material into a MOX has emerged. This approach can create abundant adsorption sites and fast charge carrier migration across the heterojunction interfaces. One such 2D material that gained substantial attention is molybdenum disulfide (MoS<sub>2</sub>) as it possesses air stability, fast charge transfer, and active sites for functionalization. Under UV-activation, the nanocomposite sensor exhibits remarkable responses of 91% and 2310% at 5 and 500 ppb NO<sub>2</sub>, respectively. This work has been published in Applied Surface Science, Elsevier by Dr. Rishi Ranjan Kumar (Assistant Professor, K. R. Mangalam University). His team demonstrated that this composite could detect

the NO<sub>2</sub> gas at concentrations as low as 5 ppb. While their demonstration was specifically aimed at NO<sub>2</sub>, Dr. Rishi says, “we can definitely tailor the chemistry of the nanocomposite to target other volatile molecules, as long as they form a network structure”.

Because the films are so thin, there is less consumption of raw materials and production material costs could be low; the processing methods could be typical of those used for

industrial coating processes. “The next steps will be to evaluate and integrate these materials in real-life settings by building a prototype,” he says. “Let’s put the sensors out in real-world scenarios and see how well they perform,” he further added.

**Dr. Rishi Ranjan Kumar**

Assistant Professor (Physics)

School of Basic and Applied Sciences

## Glorious Vedic Mathematics

In the past, our country had achieved the peaks of success for thousands of years. Modern-day research, inventions, theories; concepts are broadly based on Vedic knowledge/literature. Vedic mathematics was a gift from India's ancient sages that was delivered to our world. Compared to the analogous algorithms used in modern mathematics, it is a simpler and more fun system for limited arithmetic and polynomial calculation. We as Indians suffered a lot economically and spiritually due to ignorance of our great Vedic knowledge. It is time to put our focus back on Vedic period knowledge so that our learners grow on all fields especially in research and development, building their skills and knowledge to make India great again.

Vedic mathematics obsoletes the long processes and gives the solution within no time. In ancient times six auxiliary disciplines of Hinduism namely “Vedanganas” were developed. One of the six is the Jyotish Shastra. A component of this Jyotish Shastra is Vedic Mathematics. Vedic math is divided into three sections, or “skandas”(branches). Vedic math is beautiful because it is so straightforward; all calculations may be made with a pencil and paper. The method used to answer problems stimulates and improves mental processing, memory, and concentration. It fosters innovation and enhances creativity. It can be used by ordinary learners as well as by differently abled children of all ages and is adaptable. As a gift from Krishna

Tirtha ji, Vedic mathematics is a collection of priceless methods that can significantly increase our capacity for speed, comprehension, and performance in mathematics and other sciences. Vedic mathematics is a brilliant system that is rarely given the credit it deserves. Vedic math is an excellent method for mastering calculations because it is more accurate and effective. For anyone wishing to improve their skills, spending 30 to 45 minutes a day practicing Vedic math will be quite beneficial. Vedic mathematics places more emphasis on meaningful learning than on memorization. Finding solutions with Vedic mathematics could make the student feel less anxious. Due to the encouragement of mental calculations, it improves focus. With this approach, teachers and students can communicate more effectively. Vedic mathematics fosters creativity in brilliant students while assisting slow learners in understanding the fundamentals of mathematics. If the Vedic system of mathematics is incorporated into our curriculum, students will be inspired to learn mathematics in an engaging way. With the aid of Vedic mathematics, mathematics may be quickly and easily learned and understood.

**Dr. Pooja Vats**

Assistant Professor (Mathematics)

School of Basic and Applied Sciences



# RESEARCH UPDATES

## Journal Articles

AUTHOR NAME	NAME OF THE RESEARCH ARTICLE	NAME OF JOURNAL	SCOPUS/ WOS/ SCIE	IMPACT FACTOR AND CITE SCORE	DATE OF PUBLICATION
Dr Neeraj Kumari and Dr. Chandra Mohan	Augmenting Barrier Efficiency in Clay-based Starch Composite Films for Enhanced Packaging Sustainability	Polymers Advanced Technologies'	Scopus/WoS/ SCIE	IF: 3.4 CS: 6.2	30 <sup>th</sup> May 2024
Dr Yogendra Kumar Rajoria	A Supply Chain Coordination Optimization Model with Revenue Sharing and Carbon Awareness	Sustainability	Scopus/WoS/ SCIE	IF: 3.9 CS: 5.8	28 <sup>th</sup> April 2024
	Mathematics Interest, Phobia, Self-Efficacy And Performance: Investigate Reciprocal Relations	African Journal of Biological Sciences	Scopus	IF: 1.08 CS: 0.8	May 2024
Dr. Meena Bhandari	Synthetic and Therapeutic Review of Triazoles and Hybrids	Heterocyclic Communications	Scopus/ WoS	IF: 1.3 CS: 3.8	22 <sup>nd</sup> May 2024
Dr. Mina Kumari	Boros integral involving the class of polynomials and incomplete Alpha function	Proceedings of the Indian National Science Academy	Scopus	IF: 1.2 CS: 1.0	26 <sup>th</sup> April 2024
Dr. Sujata Kumari	A systematic study on synthesis and characterization of a novel tri-component ferrite system with cost effective n- and p-doping and their photocatalytic performance	Material Science and Engineering: B	Scopus/WoS/ SCIE	IF: 3.6 CS: 5.6	8 <sup>th</sup> June 2024
Dr. Vicky Kapoor	Advanced nanomaterial: Fabrication, Characterization and applications	E3S Web of Conferences	Scopus	IF: 0.8 CS: 1.0	13 <sup>th</sup> April 2024
Dr. Chandra Mohan	Sustainable Energy Solutions for Environmental Pollution Control	E3S Web of Conferences	Scopus	IF: 0.8 CS: 1.0	13 <sup>th</sup> April 2024
Dr. Pardeep Kumar	The significant role of Darcy–Forchheimer with integrated hybrid nanoparticles (Graphene andTiO2) on dusty nanofluid flow subjected to heat conduction	Numerical Heat Transfer Part B: Fundamental	Scopus	IF: 1.0 CS: 1.0	6 <sup>th</sup> May 2024
Dr. Dilraj Preet Kaur and Dr. Seema Raj	Repurposing plastic waste: Experimental study and predictive analysis using machine learning in bricks	Journal of Molecular Structure	Scopus/WoS/ SCIE	IF: 3.84 CS: 7.1	28 <sup>th</sup> June 2024

# Book Chapters

AUTHOR NAME	NAME OF THE BOOK CHAPTER	NAME OF BOOK	PUBLISHER	ISBN/ISSN NO.	DATE
Dr Neeraj Kumari and Dr. Meena Bhandari	Surface Functionalization Reactions of Graphene-based Nanostructure and their Practical Application	Chemistry of Graphene - Synthesis, Reactivity, Applications and Toxicities	Intech Open, London	9781837692835	May 2024
Dr Rajni Gautam, Dr Chandra Mohan and Dr Ruby Jindal	Sustainable Innovation as a Solution to Energy Crisis and Industrial Pollution	Promoting Multi-Sector Sustainability with Policy and Innovation	IGI Global, USA	9798369321133	May 2024
Dr. Rajni Gautam	Biosensors for Environmental Monitoring	Sensors for Environmental Monitoring, Identification, and Assessment	IGI Global, USA	9798369319307	May 2024
Dr. Chandra Mohan	Ionic liquids in pharmaceuticals and bioanalytics	Green Approaches in Medicinal Chemistry for Sustainable Drug Design	Elsevier, Netherlands	9780128175927	June 2024
	Green synthesis of silver nanoparticles for antibacterial properties				
	Exploring Waste Management in Sustainable Development Contexts	Sensors for Environmental Monitoring, Identification, and Assessment	IGI Global, USA	9798369342640	June 2024
	Bioeconomy for Sustainable Environment Management Practices	Bioeconomy for Sustainability	Springer, Singapore	9789819718368	June 2024
Dr. Dilraj Preet Kaur and Dr. Seema Raj	Utilization of Waste Tyre Rubber as a Construction Material	Utilization of Waste Tyre Rubber as a Construction Material	Springer, Singapore	9789819975518	May 2024

# BRIDGING THE GAP: FROM BOOKS TO REAL-WORLD APPLICATIONS



## EVENT CORNER

The one-day seminar titled "Bridging the Gap: From Books to Real-World Applications" was organized by School of Basic and Applied Sciences on April 9, 2024, to address the disparity between theoretical knowledge gained from academic studies and its practical application in real-world scenarios. Mr. Parth Praveen Deokar, a senior software developer from Cognizant, was the keynote speaker for this seminar. The seminar aimed to provide participants with insights, tools, and strategies to effectively bridge this gap and enhance their practical skills by identifying the challenges in translating theoretical knowledge into practical applications. Mr. Parth started the session by introducing the students to the latest technology such as

Data Analytics, Power BI, ServiceNow, DevOps, Generative AI, etc. He shared valuable insights into the challenges faced by individuals when transitioning from academic settings to real-world environments. The speaker emphasized the need for practical experience and problem-solving skills to succeed in various professional fields. Finally, the seminar was concluded with a vote of thanks from the anchor, expressing gratitude for everyone's participation and contributions. By fostering discussions, sharing insights, technological innovations, soft skills development, and offering practical strategies, the seminar contributed to empowering the students to enhance their skill transition and succeed in their respective fields.

## ● INTER-UNIVERSITY SCIENCE FIESTA 2024 ●

School of Basic and Applied Sciences, in collaboration with KEIC and Dr. APJ Abdul Kalam Science Society, successfully organized an Inter-University Science Fiesta on April 29th, 2024. It witnessed enthusiastic participation from more than 40 students hailing from K.R. Mangalam and various other universities. The Fiesta featured four engaging activities: Science Model Exhibition in which students showcased a variety of science models and prototypes centered on themes such as water filtration,





chemical reactions, wastewater management, and biosensors. The exhibits demonstrated innovative solutions and practical applications in the field of science. The participation of students from various universities fostered collaboration and knowledge sharing. Interacting with peers from different institutions likely broadened their perspectives and understanding of scientific

advancements. The Inter-University Science Fiesta 2024 successfully achieved its objectives of promoting scientific inquiry, fostering collaboration among students, and showcasing innovative projects. Overall, the Inter-University Science Fiesta 2024 served as a valuable platform for igniting young minds' interest in science and fostering a spirit of collaboration and innovation.

## A SESSION ON PERSONALITY DEVELOPMENT AND CHARACTER BUILDING

School of Basic and Applied Sciences held a session on 'Personality Development and Character Building' on May 22, 2024. The expert of the session was Dr. B.P. Singh, IEDS (Assistant Director) MSME, New Delhi. Dr. B.P. Singh started the session by introducing himself and discussing the importance of building a good reputation in society. He elaborated on the concept of personality, which involves self-reflection and emotional management. Through various examples, he explained the significance of education, ethics, and discipline. He also introduced the concepts of the 3Cs (Complaint, Condemn, Criticism), the 3Ps (Person, Place, Period), and the 3Ds (Desire, Discipline, Dedication) to the students. Lastly, he explained the purpose behind the



establishment of MSME, its policy and process to apply the project. In conclusion, Dr. Chandra Mohan, the event coordinator, and Dr. Meena Bhandari, Dean of the School of Basic and Applied Sciences, expressed their gratitude to the guest and participants. Dr. Meena Bhandari affirmed that the School of Basic and Applied Sciences looks forward to organizing more such enriching events in the future.

## PARTICIPATION OF SBAS STUDENTS IN MIRMAN BUSINESS PLAN COMPETITION

Students (Amrit, Disha, Kashish, Gaurav, Sannah, Sumit, Aaryan) from the B.Sc (Hons) Physics program participated in the NIRMAL Business Plan Competition at Sushant University. The event attracted over 70 participants from various universities. Representing our B.Sc. IV Physics program, two teams of seven students presented their project ideas, focusing on "Industrial Water Treatment" and a "Lung Detection Kit."



# EDUCATIONAL VISIT TO STATE FORENSIC SCIENCE LABORATORY, JUNGA, SHIMLA



An educational visit to the State Forensic Science Laboratory in Junga, Shimla, was organized on 27th May 2024 for 23 students from B.Sc. (H) Forensic Science accompanied by Dr. Sakshi Mehta and Ms. Komal Yadav. This visit aimed to provide students with practical insights into the working and functioning of a Forensic Science Laboratory, enriching their theoretical knowledge with real-world applications. The visit was planned and time-designed to ensure maximum learning and engagement for the students. It began with a pre-visit preparation where students were briefed about the laboratory and the visit schedule. Upon our arrival at the State Forensic Science Laboratory, we were warmly welcomed by the Deputy Director of

DNA division, Dr. Aparna. A guided tour of the laboratory followed, covering key divisions and units such as DNA, chemistry and toxicology, ballistics, questioned document, cyber, NDPS, and fingerprint analysis. Experts from each department provided detailed explanations of their processes and technologies, supplemented by demonstrations and discussions of real-case studies. An interactive Q&A session allowed students to clarify doubts and discuss various aspects of forensic science. The educational visit yielded several positive outcomes. Students gained a deeper understanding of forensic science and its applications in criminal investigations, enhancing their knowledge beyond classroom learning.

## FACULTY DEVELOPMENT PROGRAM -NANOMATERIAL FABRICATION AND CHARACTERIZATION FOR DEVICE APPLICATIONS

The School of Basic and Applied Sciences (SBAS), K. R. Mangalam University (KRMU), Gurugram in collaboration with Mahatma Hansraj Malaviya Mission Teacher Training Centre, Hansraj college, University of Delhi conducted an (online) One Week Faculty Development Programme (FDP) in Nanomaterial Fabrication and Characterization for Device Applications from May 27 to June 1,



2024. The programme saw more than 50 registrations. The target audience for this FDP includes faculty members from engineering, physics, chemistry, and materials science departments throughout India, seeking to update their knowledge in nanomaterial applications.

Prof. (Dr.) Raghuvir Singh, vice-chancellor of KRMU, addressed the participants and stressed



on the significance of fostering the need for nanomaterial design and fabrication to fit the modern and dynamic industry requirements. The guest of honor for the event was Dr. Rakesh Sinha, Dean Research, KRMU. The welcome note for the event was given by Dr. Meena Bhandari, Dean, SBAS. The programme convenors were Dr. Kriti (Assistant Professor, Physics, SBAS) and Dr. Chandra Mohan (Associate Professor, Chemistry, SBAS). Dr. Rishi Ranjan Kumar (Assistant Professor, Physics, SBAS) played a pivotal role in the success of the Faculty Development Programme, ensuring that every aspect of the event was meticulously coordinated. The organizing committee, comprising Dr. Vicky Kapoor (Assistant Professor, Physics, SBAS) and Dr. Sujata Kumari (Assistant Professor, Physics, SBAS), worked diligently to create a seamless experience for the participants.

The event witnessed the participation of distinguished resource persons from various fields which includes Prof. Tokeer Ahmed (Professor, Jamia Millia Islamia), Dr. Satish Kumar (Chief Scientist, CSIR, Chandigarh), Dr. Indra Sulania (Scientist F, IUAC, New Delhi), Dr. Manoj Patel (Principal Scientist, CSIR CSIO, Gujarat), Dr. Vimal Srivastava (Professor, IIT Roorkee), Dr. Himanshu Ojha (Scientist, INMAS, DRDO), Dr. Suman Gajjala (Senior Scientist, NPL, New Delhi), Dr. Bindia Arora (Assistant Professor, Guru Nanak Dev University) and Dr. Anoop Shukla (Associate Professor, Amity University)



among others. Also, four international experts joined from abroad with the aim of bridging the gap between academic knowledge and industrial applications, preparing faculty to guide students in industrial projects. Participants gained a deeper understanding of nanomaterials, their properties, and their potential applications in various devices, enhancing their expertise and enabling them to undertake and guide cutting-edge research in nanotechnology. The programme also provided valuable networking opportunities, where the participants connected with the experts, industry leaders, and fellow researchers. The programme concluded with video feedback from Dr. Indra Sulania, Dr. Amanpal Singh Clair, and Dr. Pranav Kumar Prabhakar, followed by feedback from several participants. On behalf of Dean, SBAS, Dr. Rishi Ranjan Kumar provided the final concluding remarks. The event wrapped up with the prospect of organizing another faculty development programme in person in the future.

## BID ADIEU TO OUR SENIORS





School of Basic and Applied Sciences (SBAS) organized a memorable farewell for B.Sc. final year students on 17th May 2024. The event was coordinated by Dr. Aina Gupta and Dr. Seema Jangir. The proceedings began with a traditional tilak welcome for the final year students. Hosts Ms. Tanishka and Mr. Chitranshu introduced the event, explaining its purpose. Dr. Meena Bhandari, Dean of SBAS, officially welcomed the students and delivered a motivational speech. The event featured various cultural performances, including dance and music, by first and second-year B.Sc. students. Fun activities such as musical chairs, mimicry, and balloon games were organized for the final year students, adding to the enjoyment. Based on the performances of students, Mr Amrit was selected Mr farewell and Ms Muskan won the

crown of Miss Farewell. Ms. Sejal received the all-rounder award for her active participation throughout her B.Sc. program. Dr. Meena Bhandari concluded the event by thanking the organizers and wishing the final year students' success in their future endeavours. The farewell was a joyous occasion filled with heartfelt goodbyes.

कूल ऑफ बेसिक एंड एलाइड साइंसेज, के.आर. मंगलम  
यूनिवर्सिटी, गुरुग्राम एक सप्ताह ऑनलाइन एफडीपी  
'नैनोमेटेरियस फैब्रिकेशन एंड कैरेटराइजेशन' का आयोजन



**અભિયુક્ત વ્યક્તિ  
અપેક્ષા કરતો**

परे नमक परिवार किया गया है कि यादव विवासी: नमक नंबर-बी-2 कोरस, बाग लड़ी, कुकावर मजुवा, U/s 381/411 IPC, पुलिस स्टेशन सैन्यीय अपराध किया है (य संपर्क किया गया गिरफ्तारी के बाद को म जमिपुता मिला यादव मिल नहीं। कर दिया गया है कि रात कनिपुता करत को तमोल को बचने को छिप अपन ब्रसलिए ब्रसक द्वारा जख्मीष्ठा के 381/411 IPC, पुलिस स्टेशन बाग परिवार यादव से जख्मी की जाती नमक) जस्त परिवार को उतार दें दूसरे पहले ज़रिह हो।

## COMMUNITY CONNECT

## Street Play to create Awareness on Cyber and Mobile Phone Frauds in Collaboration with Red Cross Society





creating awareness on cyber and mobile phone frauds. The act of 3-4 minutes was performed at four different places in the village. University students got an opportunity to share their knowledge and show their talents. The crowd



gathering was also done by the students with the help of Mr. Mohammed Tufail G. who works as a project coordinator in the village. Overall, the experience of the whole event will enable students to have a better disposition in future.

## Case study 'Effect of Electronic Devices on Education of Students'



School of Basic and Applied Sciences at K.R. Mangalam University organized a visit to a government school in Abheypur and Daulah Village, Gurugram, Haryana, as part of an extension activity titled "Effect of Electronic Devices on Education of Students" on April 19 and May 13, 2024. During the event, student volunteers from K.R. Mangalam University engaged with 9th, 10th, and 12th standard students at the government school. They conducted surveys to understand the electronic device usage habits among these students. This interaction provided valuable insights into the lifestyle and study environment of the school students. For the university students, this was an

enriching experience as they directly engaged with their peers from the government school. They gained a deeper understanding of the impact of electronic devices on education through this interaction. The exchange of ideas and experiences between students from different educational backgrounds was truly enlightening. The interactions and outcomes were similarly enriching and insightful, further emphasizing the value of such initiatives. Overall, the extension activity proved to be a fruitful initiative in fostering understanding and awareness about the influence of electronic devices on education among school students. Dr. Kirti Sharma and Dr. Ritika Khatri coordinated the event.

# Internships

## Physics

Roll No	Name of the student	Semester	Organization	Domain
2303209004	Anshika Sharma	Second	Delhi University	Stimulation program SCAPS-1D for Perovskite solar cell
2303209008	Mehek Rawat	Second	Delhi University	Stimulation program SCAPS-1D for Perovskite solar cell

## Mathematics

Roll No	Name of the student	Semester	Organization	Domain
2303211002	Shrutee Kaur Dhillon	Second	CAD Desk India	C++ Programming
2303211004	Nikita Yadav	Second	CAD Desk India	Javascript
2203110001	Mayank Saini	Fourth	InnoByteServices	Data Analyst
2203110002	Suparan De	Fourth	Institute of electronics and telecommunications engineers	Artificial Intelligence
2203110005	Archana	Fourth	Institute of electronics and telecommunications engineers	Data Analytics
2203110006	Anuvanshika	Fourth	InnoByteServices	Data Analyst
2203110007	Bhawana Yadav	Fourth	InnoByteServices	Data Analyst
2203110008	Rahul	Fourth	Institute of electronics and telecommunications engineers	Data Analytics

## B.Sc Chemistry

Roll No	Name of the student	Semester	Organization	Domain
2303210001	Tanishka	II	Gargi College, Delhi University	Insilico Designing of plants waste anti-bacterial peptides
2303210002	Shikha	II	Gargi College, Delhi University	Insilico Designing of plants waste anti-fungal peptides

2303210002	Nandini	II	Miranda House, Delhi University	Green Corrosion Inhibitors for Acidic Medium
2303210004	Priyanka	II	Gargi College, Delhi University	Insilico Designing of plants waste anti-cancer peptides
2303210005	Muskan	II	Shivaji College, Delhi University	Synthesis of metal oxide nanoparticles
2303210006	Ritu	II	Shivaji College, Delhi University	Synthesis of metal oxide nanoparticles
2303210007	Ilma	II	Hansraj College, Delhi University	Synthesis of ionic liquid
2303210009	Vivek	II	Shivaji College, Delhi University	Synthesis of calcium oxide nano particles
2303210010	Kanishk	II	Shivaji College, Delhi University	Synthesis of metal oxide nanoparticles
2303210011	Sarita	II	National Physical Laboratory, CSIR	Polymer and Waste Recycling
2303210013	Sneha	II	IIT, Delhi	Nano technology in water treatment
2303210015	Chetna	II	Hansraj College, Delhi University	Preparation of silver nano particles through plants waste material and uses of water treatment
2303210016	Harsh	II	Hansraj College, Delhi University	Synthesis of ionic liquid
2203100001	Wapangmeren	IV	Kohima Science College	Water Analysis

## B. Sc. Forensic Science

Roll No	Name of the student	Semester	Organization	Domain
2203370001 2203370003 2203370006	Deepika, Khushboo and Shruti	IV	Central Forensic Science Laboratory, CBI, New Delhi	Criminal case investigation, Laboratory Examination of evidences
2203370011	Bhumi Hauta	IV	Central Forensic Science Laboratory, Shimla, Himachal Pradesh	Criminal case investigation, Laboratory Examination of evidence
2203370016 2203370025	Anshika, Kavya	IV	State Forensic Science Laboratory, Delhi	Criminal case investigation, Laboratory Examination of evidence



2203370015	Divya Panwar	IV	Forensic Science laboratory, Moradabad, Uttar Pradesh	Criminal case investigation, Laboratory Examination of evidence
2203370008	Sanjeev Kumar	IV	State Forensic Science Laboratory, Lucknow, Uttar Pradesh	Criminal case investigation, Laboratory Examination of evidence
2203370028	Sinjoli Goel	IV	State Forensic Science Laboratory, Madhuban, Haryana	Criminal case investigation, Laboratory Examination of evidence
2203370012	Athira Biju	IV	Regional Forensic Science Laboratory, Kerla	Criminal case investigation, Laboratory Examination of evidence
2203370004 2203370015 2203370010	Sumit, Divya, ,Prayankar	IV	Police Station, Sohna, South Gurgaon	Case filing, Criminal case investigation
2203370001 2203370013	Deepika, Meghna	IV	Police Station, City Police Station, Palwal	Case filing, Criminal case investigation
2203370010	Prayankar Rudra Paul	IV	Police Station, Kalyanpur, Tripura	Case filing, Criminal case investigation
2203370016	Anshika	IV	Police Station, Sec – 1, Dwarka	Case filing, Criminal case investigation
2203370012	Athira Biju	IV	Crime Branch, Ernakulam, Kerla	Case filing, Criminal case investigation
2203370006 2203370025	Shruti, Kavya	IV	Police Station, Kheri Road, Faridabad	Case filing, Criminal case investigation
2303212035 2303212036	Jiya, Varuni	II	Police Station, Sec-12, Faridabad	Case filing, Criminal case investigation
2303212055	Prashant		Police Station, Sec-50, Saran	Case filing, Criminal case investigation
2303212038 2303212016 2303212066 2303212054 2303212059 2303212009	Tannu Singh, Shweta, Priyanshu Singh, Nishu, Lakhan, Aniket	II	Police Station, Sohna, South Gurgaon	Case filing, Criminal case investigation
2303212006	Shivang	II	Police Station, Sec-8, Faridabad	Case filing, Criminal case investigation
2303212039 2303212058 2303212037	Anjali, Liesha, Damini	II	Police Station, Dabri Mod, Janakpuri, Delhi	Case filing, Criminal case investigation
2303212030	Hemant Rajwaniya	II	Police Station, Khayla, Delhi	Case filing, Criminal case investigation
2303212012	Priyal	II	Police Station, Lodhi Road, Delhi	Case filing, Criminal case investigation

2303212060	Manav	II	Police Station, Sec-16, Faridabad	Case filing, Criminal case investigation
2303212025	Shanwaj	II	Police Station, Firojpur Jhirka	Case filing, Criminal case investigation
2303212024	Haseen	II	Police Station, Nagina	Case filing, Criminal case investigation
2303212033	Shreya	II	Police Station, Sec-10A, Gurgaon	Case filing, Criminal case investigation
2303212051	Divyansh Salini	II	Police Station, Trans Hindon, Ghaziabad	Case filing, Criminal case investigation
2203370002 2203370007 2203370016 2203370004 2203370021	Shaswat, Ashless, Anshika, Sumit, Bilal	IV	Cyber Forensic Lab, RJ Forsec Sol. Dwarka	Cyber forensic case investigation
2203370018 2203370022	Johnsy, Sakshi	IV	Centre for Criminal Investigation and Forensic Science, Sec-9, Rohini	Criminal case investigation, Laboratory Examination of evidence
2203370027 2203370026 2203370017 2203370024	Alisha, Shiwani, Sahitya Ranjan	IV	Sherlock Institute of Forensic Science, Delhi	Criminal case investigation, Laboratory Examination of evidence
2203370024	Kritika	IV	Nexttext Designing Lab, Delhi	Graphic designing, content editing
2203370005	Karan	IV	Hawk Eye Forensic Lab, Noida, Uttar Pradesh	Criminal case investigation, Laboratory Examination of evidence
2303212046 2303212040 2303212071 2303212003 2303212022 2303212010 2303212011 2303212001 2303212063 2303212032	Aditi, Rishav, Adarsh, Muskaan, Kanishka, Tanjimul Hasan, Divya, Raghav, Megha, Rakshita	II	Police Station, Bhondsi, Gurgaon	Case filing, Criminal case investigation



## OUR ALUMNI



As a graduate of K. R. Mangalam University with BSc in Mathematics, I had a positive experience with both the faculty and the university. The faculty members were knowledgeable, supportive, and dedicated to helping students succeed. The university provided a conducive environment for academic and personal growth, making my time there enriching and memorable.

**Name- Sejal**

**Course- B.sc(H) Mathematics**



B.Sc. in Mathematics program at K.R. Mangalam University was a pivotal chapter, providing a solid foundation in mathematics and preparing students for future challenges and contributions to the field.

From the beginning, K.R. Mangalam University provided a supportive and stimulating environment conducive to both academic excellence and personal growth. Professors were not just educators but mentors who encouraged critical thinking, inquiry, and innovation. The B.Sc. in Mathematics program offered a balanced mix of theoretical knowledge and practical application. Participation in clubs, societies, and extracurricular activities allowed students to pursue interests and develop new skills, complementing academic pursuits. Faculty guidance was instrumental in its successful completion.

**Name- Amrit Agarwal**

**Course- B.sc(H) Mathematics**



I am incredibly grateful for my experience as a BSc Mathematics student at K. R. Mangalam University, Gurugram. The curriculum is rigorous and comprehensive, providing a solid foundation in both theoretical and applied mathematics. The faculty members are highly knowledgeable and approachable, always willing to go the extra mile to help us understand complex concepts. The university also offers a variety of resources and opportunities for research and practical application of mathematical theories. I had the chance to work on several projects that not only enhanced my problem-solving skills but also prepared me for real-world challenges.

Overall, K. R. Mangalam University, Gurugram has provided me with an exceptional education and a memorable college experience. I feel confident and well-prepared for my future endeavors, thanks to the strong foundation I have built here."

**Name-Muskan**

**Course- B.sc(H) Mathematics**





## STUDENTS' CORNER

# Student' views - Science Graduates and Their Impact on the Environment

As science graduates, we're not just lab-coat-wearing enthusiasts; we're potential change-makers in the fight against environmental challenges. Let's dive into how we can roll up our sleeves and make a difference:

### 1. Curiosity Meets Action:

- Our scientific curiosity can lead to groundbreaking discoveries. Whether it's studying climate patterns, analysing soil health, or tracking wildlife behaviour, we can contribute valuable data.

### 2. Innovation Zone:

- Think of us as eco-innovators. We're the ones tinkering with solar panels, designing efficient water purification systems, and dreaming up sustainable materials. Innovation is our middle name!

### 3. Policy Whisperers:

- Science grads, unite! We can't leave policy discussions to politicians alone. Let's advocate for evidence-based policies. Whether it's carbon pricing or protecting endangered species, our voices matter.

### 4. Educators Extraordinaire:

- Imagine us as environmental educators. We organize workshops, create engaging content, and spread awareness. Because knowledge shared is power multiplied.

### 5. Tech Wizards:

- Data nerds, assemble! Remote sensing, GIS, and data analytics are our tools. We monitor deforestation, track pollution hotspots, and keep an eye on melting glaciers. Science meets tech, and it's magical.

### 6. Conservation Crusaders:

- We're on a mission to save species. Habitat restoration, wildlife corridors, and biodiversity hotspots—these are our battlefields. Let's protect what's left of our natural wonders.

### 7. Interdisciplinary Avengers:

- Environmental problems don't play favourites. We team up with economists, social scientists, and engineers. Together, we're like the Avengers, but with lab coats and laptops.

### 8. Corporate Green Warriors:

- Even in the corporate jungle, we fight for sustainability. From reducing waste in supply chains to promoting eco-friendly practices, we're the green conscience of boardrooms.

### 9. Community Connectors:

- We're not just lab rats; we're community builders. Engaging with local folks, understanding their needs, and co-creating solutions—that's our superpower.

In summary, science grads, let's be the change we wish to see. Whether it's through research, policy, or community action, our impact ripples across the planet.

**Mr Amrit**

**B. Sc. (H) Physics**

# AN ARTICLE - THE WOMAN OF MY DREAMS

**I am a woman or maybe, I am just a girl aspiring to be a woman. The idea of dreams got broken most of the times for me and later I thought of a very simple idea for myself which is to be a woman who is heard, seen, taken seriously and appreciated. It sounds easy, it isn't though.**

My mother who is a housewife has the same dream but because she is not a part of the working society, she feels worthless and if she doesn't, there are other people who would make her feel worthless and it's not about my mother, it's about thousands of mothers seeking appreciation and to be taken seriously.

I would like to pass the message to all those mothers that if you are not there, we'll starve of hunger and the easy life we have will not be that easy anymore. You are so important that we would not know or understand the meaning of love or care and the value of these two words will disappear from the world which is disastrous. The world without you is nothing but a great tragedy.

Few months ago, I thought the woman of my dreams I aspire to be would never be possible. I had a big heart break. My mother, who has a great love for reading asked me to write my feelings down of being broken, I did as she told me. All my feelings led to something greater than I imagined, I wrote about my sorrow and later I found the cure for my sorrow as well. I kept writing for two months and one fine day when I finished, I thanked my mom, she is a genius. I published my thoughts in the form of a book and became a writer. I am not a great popular writer but that day I realized this is what I am good at, and this is what I should be doing. Now through her reading hundreds of books, she is now contributing to my writings and together we both are trying to build something that could move the hearts of people.

These women fighting at home has so much potential to be heard and seen, to be validated. These mothers contribute innately to us children to a great extent. But the sad reality is they are scared to dream big. There are Societal Expectations, these norms often dictate that their primary role is to manage the household



## A POEM - DOOR OF MY HEART

When u knock at my door  
If I resist opening  
And I still open it for you  
And throw stones at you  
If you get hurt in that moment  
U would wanna step out  
U would wanna run far away  
But if for once  
U stand still at the door  
And turn back  
I would turn the world upside down  
I would get desperate to save u from  
The stones I threw at you  
I would clean the way  
And a make a way in between the stones  
To reach back to me  
Not because I am scared to lose u  
But because I am scared of a world  
Without you.  
If u come back I will carve beautiful art  
From the same stones and give it to you

**Sneha Pramanik**

**B. Sc. (Chemistry)**



and care for the family, making it difficult to envision a different path. Then there is Lack of Support They may feel unsupported by family or friends in pursuing larger ambitions outside of traditional roles. And when we talk about women how can we forget self-doubt? Years of focusing on others' needs lead to diminished self-confidence and a belief that they aren't capable of achieving big. A big number of women have financial dependency issues, fear of failure as well if they haven't had many opportunities to take risks. They might also feel guilty about prioritizing their own dreams over family responsibilities. These factors combined can create significant barriers to dreaming big and pursuing those dreams for household females. Now it becomes our responsibility to tackle this ignored issue, let's all ask our mothers today what's their dream, what do they want to do other than the household chores, let's tell them to take one step ahead and to go for it.



As we grow old, we become selfish about what we want to do and tend to forget about those near us. Each educated individual should help their mothers understand that it is possible at their age to be able to achieve their dreams no matter how small or big it is because they deserve to have a free mind and a life beyond what they can even imagine.

## GALLERY











# K.R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

Sohna Road, Gurugram, Delhi-NCR | Landline No.: 0124-2867800

📞 08800697010-15 📞 011-48884888 📞 8800697012

[www.krmangalam.edu.in](http://www.krmangalam.edu.in) | [admissions@krmangalam.edu.in](mailto:admissions@krmangalam.edu.in)

📘 krmuniv 📺 krmuniv 🇮🇳 K.R. Mangalam University

📷 Krmangalamuniv 📺 K.R. Mangalam University