K.R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

SCHOOL OF BASIC AND APPLIED SCIENCES

FRONTIERS IN APPLIED SCIENCES

NEWSLETTER JANUARY TO MARCH - 2025

S.No	CONTENT PAGE

MESSAGE FROM THE EDITOR'S DESK

This quarter has seen outstanding achievements by our students and faculty in national and international conferences, impactful research publications, and numerous outreach activities that foster practical learning. From scientific articles and expert sessions to our grand International Conference (AMGSE-2025), this edition captures the essence of scientific exploration, innovation, and community engagement.

Dear Readers,

Greetings!

With great enthusiasm, we present to you the latest edition of our

quarterly newsletter, Frontiers in Applied Sciences (January–March 2025). This issue reflects the vibrant academic culture, groundbreaking research, and creative brilliance of the School of Basic and Applied Sciences at K.R. Mangalam University.

This quarter has seen outstanding achievements by our students and faculty in national and international conferences, impactful research publications, and numerous outreach activities that foster practical learning. From scientific articles and expert sessions to our grand International Conference (AMGSE-2025), this edition captures the essence of scientific exploration, innovation, and community engagement.

I extend sincere appreciation to all contributors whose efforts made this issue a true testimony to our continuous pursuit of excellence. I invite all readers to immerse themselves in the pages that follow, as we celebrate the milestones and aspirations of our school.

Warm regards

Editor

Dr. Neeraj Kumari

Assistant Professor (Chemistry)

& NSS Program Coordinator

MESSAGE FROM THE IQAC COORDINATOR

Dear Readers,

Greetings!

It gives me immense pleasure to witness and present the progress and accomplishments of the School of Basic and Applied Sciences through this vibrant issue of our quarterly newsletter, Frontiers in Applied Sciences. This publication not only reflects the dynamic academic spirit of the school but also aligns closely with the objectives of the Internal Quality Assurance Cell (IQAC) continuous enhancement in teaching-learning processes, research output, and institutional best practices.

The impressive participation of students and faculty in conferences, research publications, outreach activities, and innovation-oriented programs showcases our commitment to achieving academic excellence and societal impact. As an IQAC representative, I deeply value the school's dedication to nurturing quality benchmarks and fostering a culture of evidence-based progress.

I congratulate the editorial team and all contributors for their thoughtful efforts in compiling this issue. Let us continue working collectively toward maintaining and enhancing quality standards that promote excellence in higher education.

Warm regards,

Dr. Shikha Dutt Sharma

IQAC Coordinator

K.R. Mangalam University

WORD FROM THE LEADERSHIP

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

It is with great delight that I extend my warm wishes for the release of the latest edition of Frontiers in Applied Sciences, the quarterly newsletter from the School of Basic and Applied Sciences. This publication is a testament to the school's unwavering dedication to academic excellence, cutting-edge research, and holistic student development.

The diverse accomplishments of our students and faculty from high-impact research, international recognition, and enriching seminars to community outreach and creative contributions reflect our mission of nurturing socially responsible global citizens. Each article and report featured in this edition reaffirms our belief in fostering innovation, integrity, and impactful learning.

I applaud the editorial team, the Dean, and every contributor for crafting such a vibrant and informative issue. Let us continue our collective journey towards academic distinction and innovation-led growth.

Happy reading!

Thank you.

Warm regards,

Prof. Raghuvir Singh

Vice Chancellor

K.R. Mangalam University

FROM THE DESK OF DEAN, SCHOOL OF BASIC AND APPLIED SCIENCES

This issue shows the accomplishments of our faculty and students, highlighting research contributions, conference participations, industry linkages, workshops, and academic events. We remain committed to fostering a dynamic learning environment that not only equips students with theoretical knowledge but also provides experiential learning through research, seminars, and hands-on training.

Dear Readers,

It gives me immense pride to share with you the January–March 2025 edition of our quarterly newsletter, Frontiers in Applied Sciences. The School of Basic and Applied Sciences continues to lead the way in innovation, interdisciplinary research, and student development.

This issue shows the accomplishments of our faculty and students, highlighting research contributions, conference participations, industry linkages, workshops, and academic events. We remain committed to fostering a dynamic learning environment that not only equips students with theoretical knowledge but also provides experiential learning through research, seminars, and hands-on training.

My heartfelt thanks to all the contributors and the editorial team for curating this meaningful edition. I encourage everyone to stay curious, keep exploring, and actively participate in building a strong academic community.

Regards

Prof. (Dr.) Meena Bhandari

Dean, School of Basic and Applied Sciences

ABOUT THE SCHOOL

The School of Basic and Applied Sciences (SBAS), a constituent of K.R. Mangalam University, was established in 2013 with the launch of its inaugural programme, B.Sc. (Hons.) Chemistry. Over the years, it has expanded its academic portfolio, introducing B.Sc. (Hons.) Physics in 2014, followed by M.Sc. Physics in 2015, and subsequently B.Sc. (Hons.) Mathematics and M.Sc. Mathematics in the same year. In 2022, the school introduced B.Sc. (Hons.) Forensic Sciences, further diversifying its offerings. Aligned with the National Education Policy (NEP) 2020, SBAS launched four-year undergraduate programmes in Chemistry, Physics, and Mathematics in 2023. In 2024, the school expanded its programmes in Forensic Sciences to include a four-year B.Sc., a five-year integrated B.Sc.-M. Sc., and an M.Sc. programme. Presently, SBAS offers 10 academic programmes, enrolling 296 students, and supports robust research activities through Ph.D. programmes in Physics, Chemistry, and Mathematics with a strength of 49 research scholars. SBAS is deeply committed to the principles of NEP 2020, striving to establish an inclusive, holistic, and forward-looking education system that equips students for the demands of the 21st century. The school emphasizes Outcome-Based Education (OBE), fostering an innovative and flexible multidisciplinary curriculum. This curriculum enables students to design their own learning trajectories by combining credit-based courses across various disciplines with value-added offerings, including Indian Knowledge Systems, vocational training, community engagement projects, environmental education, value education, and skill development. The school adheres to the "Curriculum and Credit Framework for Undergraduate Programmes (CCFUP)," which incorporates a flexible Choice-Based Credit System (CBCS), Learning Outcome-based Curriculum Framework (LOCF), a multidisciplinary approach, and multiple entry and exit options. This framework allows students to tailor their academic paths and pursue careers aligned with their interests. The SBAS curriculum is carefully aligned with industry and job market demands, designed to adapt to evolving trends and technologies. It integrates cross-cutting themes such as professional ethics, gender, human values, environmental sustainability, and the United Nations' Sustainable Development Goals (SDGs). Each course features clearly defined objectives and learning outcomes, enabling students to select electives that broaden their skills across sciences and interdisciplinary fields. The curriculum ensures a strong foundation in theoretical and experimental knowledge, meeting the requirements of academia and industry while preparing students for research careers. Regular syllabus updates incorporate contemporary needs, informed by feedback from stakeholders, including students, alumni, parents, faculty, employers, industry representatives, and academic experts.

OUR COLLABORATORS

The School of Basic and Applied Sciences (SBAS), K.R. Mangalam University, signed a Memorandum of Understanding (MoU) with Idyllic Futuristic Technologies (IFT) on 20th March 2025. This collaboration aims to foster academic-industry linkage through joint research, internships, expert training sessions, and hands-on exposure to emerging technologies such as drone forensics, cyber security, and artificial intelligence. The MoU marks a significant step toward promoting innovation-driven education and enhancing students' industry readiness.

OUR ACHIEVERS

Faculty Achievements

Dr. Pratibha Sharma, Assistant Professor (Chemistry), SBAS has been conferred with the "Best Paper" at 3rd International Conference on Recent Trends in Materials & Devices (ICRTMD 2025) held from 24-26 March 2025 at JVMGRR, Charkhi Dadri, Haryana. The award was graciously presented by Prof. Anurag Srivastava, Convener, CANDEE 2024.


3rd International Conference on
Recent Trends in Materials Science & Devices
(ICRTMD 2025) 24 - 26 March 2025
JVMGRR College, Charkhi Dadri, Haryana, India

CERTIFICATE

Publication Partners

Best Paper Award

Based on the evaluation reports by the reviewers and the session chairs, the following paper has been conferred as "BEST PAPER" among the papers presented in the Technical Session: ICRTMD 25 [Faculty/ Scientist] during the 3rd International Conference on Recent Trends in Materials Science and Devices (ICRTMD 2025), held from March 24-26, 2025, at JVMGRR College, Charkhi Dadri.

Paper ID: ICRTMD-2025/FT/ST/340

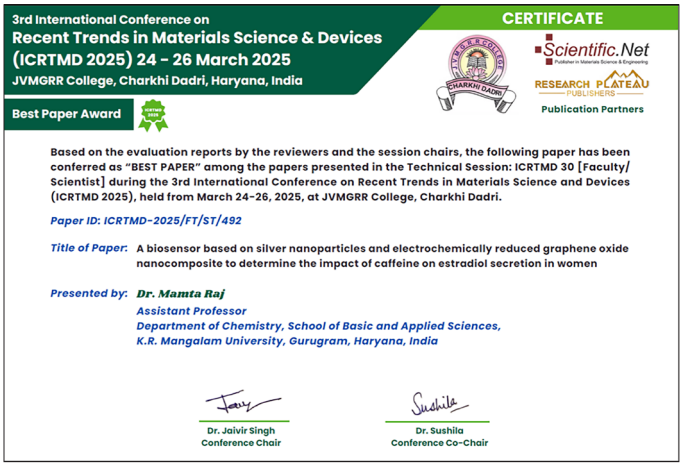
Title of Paper: Impact of n- and p-Type Doping on the Structural and Photocatalytic Characteristics of Nickel Ferrite Nanoparticles Prepared by Co-Precipitation

Presented by: Dr. Pratibha Sharma
Assistant Professor
School of Basic and Applied Sciences,
K.R. Mangalam University, Gurugram,
Haryana, India

Dr. Jaivir Singh
Conference Chair

Dr. Sushila
Conference Co-Chair

Dr. Mamta Raj, Assistant Professor (Chemistry), SBAS has been conferred with the "Best Paper" at 3rd International Conference on Recent Trends in Materials & Devices (ICRTMD 2025) held from 24-26 March 2025 at JVMGRR, Charkhi Dadri, Haryana.


3rd International Conference on
Recent Trends in Materials Science & Devices
(ICRTMD 2025) 24 - 26 March 2025
JVMGRR College, Charkhi Dadri, Haryana, India

CERTIFICATE

Publication Partners

Best Paper Award

Based on the evaluation reports by the reviewers and the session chairs, the following paper has been conferred as "BEST PAPER" among the papers presented in the Technical Session: ICRTMD 30 [Faculty/ Scientist] during the 3rd International Conference on Recent Trends in Materials Science and Devices (ICRTMD 2025), held from March 24-26, 2025, at JVMGRR College, Charkhi Dadri.

Paper ID: ICRTMD-2025/FT/ST/492

Title of Paper: A biosensor based on silver nanoparticles and electrochemically reduced graphene oxide nanocomposite to determine the impact of caffeine on estradiol secretion in women

Presented by: Dr. Mamta Raj
Assistant Professor
Department of Chemistry, School of Basic and Applied Sciences,
K.R. Mangalam University, Gurugram, Haryana, India

Dr. Jaivir Singh
Conference Chair

Dr. Sushila
Conference Co-Chair

Dr Rishi Ranjan Kumar Assistant Professor (Physics), SBAS has received "Outstanding Oral Presentation" award at International Conference on Vikshit Bharat 2047: Reaching the Unreached Through Chemical & Biological Sciences (VBCB-2025) organized by Department of Chemistry, SRM IST Delhi-NCR Campus, Ghaziabad, UP on 18-20 February 2025.

अनुसंधान नेशनल रिसर्च फाउंडेशन
Anusandhan National Research Foundation

SRM INSTITUTE OF SCIENCE & TECHNOLOGY DELHI-NCR CAMPUS, GHAZIABAD (U.P.)

CERTIFICATE OF EXCELLENCE

The certificate of Best Poster is awarded to Dr./Ms./Mr. Rishi Ranjan Kumar for his/her Outstanding Oral Presentation at *International Conference on Viksit Bharat 2047: Reaching the Unreached Through Chemical & Biological Sciences (VBCB-2025)* organized by Department of Chemistry, SRM IST Delhi-NCR Campus, Ghaziabad, UP on 18th-20th February 2025.

Dr. Navin Ahlawat
Dean - SH & Convenor - VBCB: 2025

Dr. R. P. Mahapatra
Dean

Springer Thieme ACS Chemistry for Life®

Mr. Nitin Tyagi, Assistant Professor (Forensic Science), SBAS secured third position in oral presentation for their outstanding presentation during 3rd International Conference (7th in Series) organized by Department of Forensic Science, School of Bioscience & Technology, Galgotias University & Forensic Experts Pvt. Ltd. held on 8-9 February 2025.

GALGOTIAS UNIVERSITY

FORENSIC EXPERTS
CRIME | EVIDENCE | JUSTICE

FORENSIS AGORA

3rd INTERNATIONAL CONFERENCE (7th IN SERIES)

BEYOND THE EVIDENCE :
REFLECTING ON FORENSIC INNOVATIONS TO SHAPE THE FUTURE OF CRIMINAL JUSTICE

CERTIFICATE OF OF BEST PRESENTATION

This is to certify that

Mr./Ms./Mrs./Prof./Dr. NITIN TYAGI
has been awarded First / Second / Third place in the Poster / Oral presentation category for theiroutstanding presentation on topic entitled
HINDI VS ENGLISH : COMPARATIVE ANALYSE OF CHARACTERISTICS OF EXECUTION OF HANDWRITING USING OXIMETER
during the 3rd INTERNATIONAL CONFERENCE (7th IN SERIES)
Organized by Department of Forensic Science, School of Biosciences & Technology, Galgotias University & Forensic Experts Pvt. Ltd. held on 8th & 9th February 2025

Prof. (Dr.) K. Mallikharjuna Babu
Hon'ble Vice Chancellor

Prof. (Dr.) Abhimanyu Kumar Jha
Organizing Chairperson

Prof. (Dr.) Rajeev Kumar
Organizing Secretary

Dr Rishi Ranjan Kumar Assistant Professor (Physics), SBAS has been awarded "Young Scientist" during International Conference on Ecosystem Functioning and Sustainability in Changing Environment (ESCE-2025) organized by Department of Botany, Banaras Hindu University, Varanasi, India on 6-8 February 2025.

International Conference on
Ecosystem Functioning and Sustainability in Changing Environment
ESCE - 2025
Organized by
Department of Botany, Institute of Science
Banaras Hindu University, Varanasi-221005, INDIA

Certificate

This is to certify that Dr./Mr./Ms. Dr. Rishi Ranjan Kumar, Mangalam University, Haryana has been awarded Young Scientist/Women Scientist/best oral/ best poster presentation award during the **International Conference on "Ecosystem Functioning and Sustainability in Changing Environment" (ESCE-2025)** held from February 6-8, 2025, at the Department of Botany, Banaras Hindu University, Varanasi, India. The title of the work presented was Hybrid gas sensors and Machine learning for Enhanced NO_2 detection and Urban air quality prediction

Prof. R Sagar
Convener

Prof. Satheeshkumar PK
Co-Convener

Dr. Supriya Tiwari
Organizing Secretary

Dr. Deepak Kumar
Joint Organizing Secretary

STUDENTS' ACHIEVEMENTS

Mr. Parth Gulati, a student of B. Sc. (H) Forensic Science (II Semester) secured 2nd position at the International Forensic Forum 2025: International Conference on Forensic Beyond Boundaries: Investigation, Innovation and Integrity organized by department of Forensic Science, Sharda School of Allied health Sciences, Sharda University, Greater Noida from March 1-3 March 2025.


SHARDA UNIVERSITY

4th International Forensic Forum
International Conference
on
Forensics Beyond Boundaries: Investigation, Innovation and Integrity

IFF-2025

Certificate of Merit

This is to certify that Mr. Parth Gulati of K. R. Mangalam University, Gurugram has presented a paper in oral session titled Forensic Forceps: A Modern Approach for Collecting and Visualizing Minute Evidence and secured Second Position at the International Forensic Forum 2025: International conference on Forensics Beyond Boundaries: Investigation, Innovation and Integrity Organised by Department of Forensic Science, Sharda School of Allied Health Sciences, Sharda University, Greater Noida from March 01 to March 03, 2025

Convener
IFF-2025

Dean Research
Sharda University

Ms. Sannah Rainer Sharma, a student of B. Sc. (H) Physics (VI) semester, secured 2nd position for poster presentation during the International Conference on Quantum Science and Technologies: Emerging Perspectives for a Viksit Bharat organized by Department of Physics, Gargi College, University of Delhi under the aegis of National Academy of Sciences India, Science-Society Program & RDC, held from 19-20 March 2025.


CERTIFICATE
OF APPRECIATION

THIS CERTIFICATE IS AWARDED TO

Sannah Rainer Sharma, K.R Mangalam University

for winning Second Prize for the Poster titled Numerical analysis of magnetic ... implications in the International Conference on Quantum Science and Technologies: Emerging Perspectives for a Viksit Bharat organized by Department of Physics, Gargi College, University of Delhi under the aegis of National Academy of Sciences India, Science-Society Program & RDC, held on 19th and 20th March, 2025.

Prof. Vandna Luthra
Convener
Conference

Prof. Sangeeta Bhatia
Principal,
Gargi College

Prof. Anurag Sharma
Chairperson
NASI- Delhi Chapter

Mr. Amrit Anand, a student of B. Sc. (H) Physics (VI semester), secured 3rd position during Declamation Competition organized by Nirankari Baba Gurubachan Singh Moral Education, Sohna on 15th January 2025.


N.B.G.S.M. COLLEGE, SOHNA

SESSION 2024-2025

This Certificate is Awarded to...AMRIT ANAND.....

Son /daughter of ....SH. MANDEV SINGH.....For Standing 1st/2nd/3rd/ Participation in Nirankari Baba Gurubachan Singh Moral Education Declamation Competition On Dated 15/01/2025.

Organiser

Principal

Mr. Wapang Meren, a student of B. Sc. (H) Chemistry (VI semester) secured 1st position in Football competition organized by D.P.G. College, Sector-34, Gurugram during the year February 2025.

Mr. Wapang Meren, a student of B. Sc. (H) Chemistry (VI semester) secured 3rd position in Football Aravali Inter-College annual Sport Meet 2K25 on 11-12 February 2025.

Mr. Wapang Meren, a student of B. Sc. (H) Chemistry (VI semester) secured 2nd position in Football at Sportopia, the annual fest of GD Goenka University held from 26-28 March 2025.

Ms Gurleen Kaur, Rajan a student of B. Sc. (H) Forensic Science (II semester) received the consolation prize in Science Model Demonstration organized by School of Basic and Applied Sciences, K. R. Mangalam University, on 28th February 2025.

Mr. Amrit Anand, a student of B. Sc. (H) Physics (VI semester) secured 2nd Position in debate competition organized by School of Basic and Applied Sciences, K. R. Mangalam University, on 28th February 2025.

Mr. Amrit Anand, a student of B. Sc. (H) Physics (VI semester) and Mr. Chitranshu, a student of B. Sc. (H) Mathematics (VI semester) secured 1st Position in Science Model demonstration organized by School of Basic and Applied Sciences, K. R. Mangalam University, on 28th February 2025.

SCIENTIFIC CREATIVE ARTICLES

BRAIN-COMPUTER INTERFACES: PIONEERING HUMAN-MACHINE INTEGRATION

The convergence of human cognition and artificial intelligence is transforming possibilities once confined to science fiction. Brain-Computer Interfaces (BCIs) are a groundbreaking innovation that enables direct interaction between the brain and digital systems. This technology holds immense promise for advancing healthcare, augmenting human capabilities, and reshaping how we engage with machines.

Understanding BCIs

BCIs function by capturing neural signals and translating them into commands for external devices. They can be classified as invasive—requiring surgical implants—or non-invasive, utilizing electroencephalography (EEG) to record brain activity. Continuous improvements in machine learning and neuroscience are enhancing the precision and reliability of these interfaces, paving the way for broader applications.

Transformative Applications

A significant breakthrough in medical science, BCIs offer new hope to individuals with paralysis, neurodegenerative conditions, and spinal cord injuries. By enabling control of prosthetics and assistive communication devices, they

enhance mobility and independence. Beyond medicine, BCIs are gaining traction in fields such as gaming, immersive virtual reality, and defense, offering hands-free interaction with digital environments.

Ethical Considerations

Despite their potential, BCIs introduce complex ethical concerns. The risk of privacy breaches, unauthorized access to brain data, and the implications of cognitive enhancements warrant careful regulation. Furthermore, ensuring equitable access to this technology is crucial to prevent socio-economic disparities in human augmentation.

Future Prospects

As advancements in artificial intelligence, materials science, and neuroscience progress, BCIs are set to become more efficient and widely available. Companies such as Neuralink are exploring non-invasive solutions that could revolutionize communication, memory enhancement, and even thought-driven computing.

Conclusion

Brain-Computer Interfaces signify a transformative step in human evolution, bridging the gap between biology and digital systems. While they offer unprecedented opportunities for innovation, responsible development and ethical considerations will be key to ensuring their benefits are universally accessible and aligned with human values.

Dr. Rupali

Assistant Professor (Mathematics)

CHEMISTRY OF HAPPINESS

Happiness is an emotion that we all chase every day, yet only few of us are keen to understand the science behind it. This science is very fascinating but a little complex in nature. Did you ever wondered what exactly happens when we feel joy? The answer to this lies in the release of various chemicals such as dopamine, serotonin, oxytocin and endorphin which are responsible to trigger and uplift our feelings. Let's understand these chemicals through daily life examples to know more clearly how they shape our happiness.

Dopamine: "The Reward Chemical"

Dopamine is also referred as "feel good" or "reward" neurotransmitter. It is responsible for how we experience pleasure and satisfaction. Suppose when you buy a phone or a pair of shoes that you wanted from a very long time you will observe the moment you purchase it you feel very excited, happy and in the top of the world. This happens due to high rush of dopamine in your body. However, it is very important to note that dopamine is not just for materialistic achievements but also for engagement in activities you love. Sometimes you would have observed that you are in a low mood but listening to music or having your favourite meal with your friends quickly uplifts your mood its all due to dopamine.

Serotonin: "The Mood Stabilizer"

Serotonin is a natural mood stabilizer that acts as a crucial player in the chemistry of happiness. It helps to regulate mood, sleep and appetite. Think it's a cloudy day with an amazing, pleasant weather with cool wind and you go on a walk or sit in a park, you will feel calm, relaxed and your spirit will lift this happens as serotonin boasts in your body. Many people associate big family dinner during holidays with feeling of contentment and joy as after a satisfying meal your serotonin levels rise instantly.

Oxytocin: "The Love Hormone"

Oxytocin is the hormone that makes us feel connected and loved. It is released in our body through physical touch or during a meaningful conversation. Think after a very long time you reunite with your school friends, that instant hug and warmth of the connection triggers the oxytocin thus making you feel happier. Even small everyday interactions can also boost oxytocin levels such as when you spend time with family, have heart to heart talk with someone you love or comfort someone who is upset. This is why sometimes after spending quality time with friends or loved ones you often feel content and supported, as if you have just received a mental hug.

Endorphins: "The Natural Painkillers"

Endorphins acts as natural painkillers in our body. They are responsible for runner's high that you might feel after a good workout or even after laughter. Imagine you and your friends are at Gaurav Gupta comedy show and everyone bursts into laughter. As you laugh, endorphins are released that boosts your mood and reduces stress. You may not realize it, but laughter is a powerful form of stress relief which makes you feel more positive and lighthearted. Similarly, after an amazing workout in gym in morning you feel a sense of accomplishment and your energy is boosted making you feel more relaxed and happier which is the direct result of endorphins. That is why some people when feel low hits the gym as it helps them to feel better both physically as well as emotionally.

Therefore, key to sustaining happiness lies in maintaining balance between these chemicals. If one of these chemicals are high or low in your body it may lead to risky behaviour such as high dopamine might lead to addiction, low serotonin leads to depression whereas lack of oxytocin and endorphins leads to anxiety and loneliness. For instance, practicing mindfulness or gratitude can help stabilize your mood and improve brain chemistry. Taking few minutes each day to reflect on positive things in your life encourages natural release of happiness.

Dr. Mamta Raj

Assistant Professor (Chemistry)

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. Yogendra Kumar Rajoria and Dr. Rupali	Mathematical Modelling on Dynamics of Multi-variant SARS-CoV-2 Virus: Estimating Delta and Omicron Variant Impact on COVID-19	IAENG International Journal of Applied Mathematics	Scopus	IF: 1.64 CS: 1.8	1st January 2025
Dr. Ruby Jindal	Investigation into the vibrational characteristics of monolayered ruddlesden-popper compounds (Sr, Ba)2HfO4	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	Scopus	IF: 4.6 CS: 8.5	9th January 2025
Dr. Chandra Mohan	Bio-fabrication of acid-treated and magnetic biochar from rice straw for tetracycline removal from water: response surface methodology study, reusability, and modelling	Biomass Conversion and Biorefinery	WoS/ Scopus	IF: 4.1 CS: 8.0	9 January 2025
Dr. Mohabbat Ali	Super Quasi-Einstein Warped Products Manifolds with Respect to Affine Connections	Axiom	WoS/ Scopus/ SCIE	IF: 1.6 CS: 2.2	31st January 2025
Dr. Neeraj Kumari and Dr. Rajni Gautam	A comprehensive review: Photodegradation of dyes with rare earth doped metal oxide nanoparticles for wastewater treatment	Journal of Physics and Chemistry of Solids	Scopus	IF: 4.9 CS: 9.2	5th February 2025
Dr. Kriti	Thermally activated growth of magnetically channelized SmCo-based composite nanowires to study structural, morphological and magnetic properties	Physica B: Condensed Matter	WoS/ Scopus	IF: 2.8 CS: 5.0	15th February 2025
Prof. Meena Bhandari	A Novel Procedure and a Tenable Mechanism for the Synthesis of 4-(4,5-Diphenyl-1h-Imidazol-2-Yl)-1-Phenyl-1h-1,2,3-Triazole	Heterocyclic Letter	WoS	IF: 0.1	25th February 2025

Author Name	Name of the Research Article	Name of Journal	Scopus/ WoS/ SCIE	Impact factor and Cite Score	Date of Publication
Dr. Meena Bhandari and Dr. Neeraj Kumari	Adsorption Efficiency and Reusability of Graphene Oxide and Graphene Oxide-Mt-Chitosan Composite for Cationic and Anionic Dyes	ChemistrySelect	WoS/ Scopus	IF: 2.0 CS: 3.0	15th March 2025
Dr. Pratibha Sharma	Synergistic photocatalytic degradation of multiple class of organic pollutants using GO-TiO2-WO3 nanocomposite	Materials Science and Engineering: B	Scopus/ WoS	IF: 4.6 CS: 7.5	27th March 2025
Dr. Mohabbat Ali	Geometric and Physical Characteristics of Pseudo-Schouten Symmetric Manifolds	Axiom	WoS/ Scopus/ SCIE	IF: 1.6 CS: 2.2	28th March 2025
Dr. Ruby Jindal	Study of vibrational properties of thermoelectric Columbite MnV2O6	Indian Journal of Physics	WoS/ Scopus	IF: 1.7 CS: 2.9	29th March 2025

PATENT GRANTED

Author Name	Title of Patent	Name of Agency	Date
Dr Vicky Kapoor	Device with Optical Fiber Sensor for Real Time Environmental Monitoring	Indian	13th January 2025
Dr. Mina Kumari	Smart Rotary Evaporator	Indian	21st January 2025

EVENTS CORNER

EDUCATIONAL VISIT TO JECRC UNIVERSITY, JAIPUR

The Department of Forensic Science, School of Basic and Applied Sciences at K.R. Mangalam University organized an educational visit to JECRC University, Jaipur, on 24th–25th January 2025 for B.Sc. and M.Sc. Forensic Science students. The visit aimed to provide practical exposure through participation in the National-Level Mega Forensic Event – Get Set Investigate 3.0 and TechnoTrace: The Cyber Forensic Conclave. Students engaged in hands-on workshops on crime scene reconstruction, fingerprint analysis, blood spatter patterns, toxicology, and digital forensics. They attended expert-led sessions, live demonstrations, and interactive discussions with forensic scientists, law enforcement officials, and ethical hackers. The event included competitions that encouraged critical thinking and real-time problem-solving. Students gained insight into cyber threat analysis, data recovery, and digital evidence handling, bridging the gap between classroom learning and real-world application. The visit supported SDG 4 (Quality Education) and SDG 17 (Partnerships for the Goals) by promoting learning through collaboration and expert interaction. Coordinated by Mr. Nitin Tyagi, the visit significantly enriched students' academic and professional perspectives in the field of forensic science.

A group photograph of students at JECRC university, Jaipur

EXPERT SESSION ON INVESTIGATING CRIME AND PENOLOGY

The Department of Forensic Science, SBAS, K.R. Mangalam University, organized an expert session on "Investigating Crime and Penology" on 22nd January 2025 for B.Sc. Forensic Science final and second-year students. The session, held offline in Room B013, was led by Dr. Tapan Chakraborty, Retired DIG, BPR&D, and coordinated by Mr. Nitin Tyagi. With 45 participants, the session aimed to enhance students' understanding of criminology, penology, and the role of forensic science in the justice system, aligning with SDG 4 (Quality Education) and SDG 16 (Peace, Justice, and Strong Institutions). Dr. Chakraborty discussed key criminological theories, the evolution of punishment systems, and real-life forensic case studies, emphasizing the ethical and practical aspects of crime investigation. The interactive Q&A session allowed students to explore real-world applications and challenges in the field. The session bridged the gap between academic knowledge and practical law enforcement, leaving students better informed and inspired.

Mr. Nitin Tyagi welcomed the guest and participants before starting the session.

GUEST LECTURE ON AI FOR SEMICONDUCTOR MANUFACTURING

The School of Basic and Applied Sciences (SBAS), K.R. Mangalam University, organized an insightful guest lecture on “AI for Semiconductor Manufacturing” on 4th February 2025 in offline mode for students of Applied Science and B.Tech AI/ML. The session was led by Dr. Tejender Singh Rawat, Assistant Researcher at Foxconn Technology, Taiwan, and coordinated by Dr. Rishi Ranjan Kumar. With 63 participants, the lecture aimed to introduce the integration of AI in semiconductor manufacturing, focusing on chip fabrication, process optimization, quality control, and the role of machine learning in enhancing production. Dr. Rawat elaborated on AI-driven automation, predictive maintenance, and ethical concerns in AI adoption. The session included real-world case studies and challenges of AI in the industry, providing students with a comprehensive understanding of this evolving field. An engaging Q&A session allowed students to clarify doubts and explore future career opportunities. The event effectively bridged academic knowledge with industry practices, leaving a lasting impact on participants. SBAS extended gratitude to the speaker and looks forward to hosting more such enriching events.

The expert explaining the role of AI in semiconductor research area

WORKSHOP ON DIGITAL FORENSICS: AWARENESS ON TRENDS AND TECHNOLOGY

The School of Basic and Applied Sciences at K.R. Mangalam University organized an offline workshop on “Digital Forensics: Awareness on Trends and Technology” on 18th February 2025 in the Multipurpose Hall, A Block, for B.Sc. and M.Sc. Forensic Science students. The session was coordinated by Dr. Shivani Sehgal and Ms. Saloni Arora under the supervision of Dr. Meena Bhandari and Dr. Baljeet Yadav. The keynote speaker, Air Commodore R.N. Gaekwad (Retd), Managing Director of Idyllics Futuristic Technologies (IFT), shared insights on the emerging field of drone forensics. He discussed real-world applications in cybercrime investigations, including trace DNA analysis, organic nano-powder for fingerprints, and challenges in drone data extraction and communication vulnerabilities. A live demo by IFT’s drone instructor demonstrated forensic analysis of drone components. The workshop also highlighted IFT's ongoing projects in AI, software, and defense R&D. The event concluded with an interactive Q&A and discussion on drone forensics' growing role in cybersecurity and law enforcement, leaving participants with enhanced knowledge of investigative tools and future career avenues.

Air Commodore R.N. Gaekwad (Retd) shared the insight of drone forensic in various fields.

INTER-UNIVERSITY SCIENCE FIESTA 2025

The School of Basic and Applied Sciences, in collaboration with KEIC, organized the Inter-University Science Fiesta 2025 on 28th February at K.R. Mangalam University to celebrate National Science Day. The event aligned with SDG 4 and SDG 9 goals, aiming to enhance students' technical skills and promote scientific innovation. With over 85 participants from various institutions, the event featured model making, debate, and a science quiz, encouraging creativity, critical thinking, and interdisciplinary engagement. Prof. Hema Chaudhary delivered an inspiring keynote, emphasizing the role of science in sustainable development. Models on drones, AI, water treatment, and the solar system were presented, while debates covered pressing topics like AI in education and animal testing. The quiz engaged students in interactive rounds, promoting knowledge sharing. Winners were awarded for their innovative ideas and communication skills. The event fostered collaboration, scientific curiosity, and motivation among students, concluding as a successful platform for learning, competition, and recognition.

SEMINAR ON FOSTERING FUTURE MINDS: INSIGHTS THROUGH ANALYSIS: EXPLORING MODERN ANALYTICAL TECHNIQUES

A seminar titled "Fostering Future Minds: Insights through Analysis – Exploring Modern Analytical Techniques" was organized by the School of Basic and Applied Sciences (SBAS) at K.R. Mangalam University on 3rd March 2025 in an offline mode. The event was led by Dr. Diwakar Padalia, Associate Professor of Physics, who delivered an insightful session on X-ray Diffraction (XRD) and its applications in material science. He discussed the basics of crystal structures and provided a live demonstration of XRD data analysis software, offering hands-on experience to the 29 participants. The seminar aimed to introduce modern analytical tools, bridge theoretical knowledge with practical applications, and enhance research capabilities. It encouraged students to engage with contemporary scientific practices and develop skills in data interpretation. The session also featured an interactive Q&A, allowing students and faculty to deepen their understanding. Coordinated by Dr. Rajni Gautam and Dr. Ritika Khatri, the seminar was well-received and successfully inspired participants to explore research in materials characterization.

Dr. Diwakar Padalia discussed about the importance of XRD in research

INTERNATIONAL CONFERENCE ON ADVANCED MATERIALS FOR GREEN CHEMISTRY AND SUSTAINABLE ENVIRONMENT (AMGSE-2025)

The 2nd International Conference on Advanced Materials for Green Chemistry and Sustainable Environment (AMGSE-2025) was successfully organized on 20th and 21st March 2025 at K.R. Mangalam University, Gurugram, Haryana, drawing approximately 200 registrations. The event began with a grand inaugural session graced by esteemed dignitaries including Prof. Raghuvir Singh, Vice Chancellor, and Prof. Virender Bhardwaj, along with the Chief Guest Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, and Guest of Honor Prof. V. K. Aggarwal, Pro Chancellor, Jagannath University. Several distinguished speakers from international institutions joined the event, Prof. Dominic C. Y. Foo (Malaysia) and Dr. Ahmed Kareem Hussein Alatafi (Iraq) participated in-person, and Dr. Yogendra Kumar Mishra (Denmark) and Dr. Sonia Carabineiro (Portugal) joined online. The conference featured six diverse technical sessions covering topics such as Green Chemistry, Sustainable Agriculture, Forensic Toxicology, and the Indian Knowledge System for Environmental Sustainability, alongside one dedicated online session to accommodate virtual attendees. The academic fervor was enriched by four oral presentations and four poster presentations, selected for special recognition. In total, about 60 poster presentations were showcased across both days, accompanied by multiple oral presentations. The scientific contributions and research excellence of young minds were acknowledged through the Young Scientist Awards conferred on two deserving participants. The conference concluded with a valedictory session led by Dr. Ahmed Kareem Hussein Alatafi (Iraq), who summarized

the significant deliberations and outcomes of the two-day event. Prof. Meena Bhandari, the Organizing Head, Prof. Mehraj Uddin Mir, Motilal Chair, K R Mangalam University, also addressed the attendees, followed by an award distribution ceremony, participant reflections, and formal acknowledgments by Dr. Chandra Mohan and Dr. Priyanka Kumari, Convenors of AMGSE-2025. The event proved to be a vibrant platform for international collaboration, scholarly exchange, and advancing sustainable practices in green chemistry and environmental science.

A group photograph of organizers with the experts

COMMUNITY CONNECT

As part of the community outreach initiative by School of Basic and Applied Sciences, K.R. Mangalam University, a field survey was conducted under the theme "Exploring Causes and Management of Malnutrition in Pediatric Population: Case Studies in Nearby Villages". The first phase of the survey was held on 21st February 2025 at the Primary and Middle School of Abheypur village, Gurugram, Haryana, where students and staff interacted with children and school authorities to assess dietary habits, nutritional awareness, and physical indicators of malnutrition. The second phase took place on 28th February 2025 at the Anganwadi Centre in the same village, focusing on early childhood nutrition, maternal health practices, and government-provided meal schemes. Data was collected through structured questionnaires, observation, and one-on-one discussions with caregivers, teachers, and Anganwadi workers. Preliminary findings indicated gaps in nutritional intake, limited awareness among caregivers about balanced diets, and inconsistent access to supplementary nutrition. The insights gathered will guide the development of targeted diet plans, awareness sessions, and follow-up health assessments to support better nutritional outcomes for children in the region.

A group photograph of school students and event coordinators

SBAS IN NEWS

पर्यावरण पर द्वितीय अंतर्राष्ट्रीय सम्मेलन डॉ0 चंद्रमोहन के नेतृत्व में सम्पन्न

डी ए डी न्यूज़ नई दिल्ली

20 और 21 मार्च 2025 को के.आर. मंगलम विश्वविद्यालय, गुरुग्राम, हरियाणा में आयोजित किया गया, इस प्रतिष्ठित सम्मेलन में लगभग 200 प्रतिभागियों ने पंजीकरण किया।

सम्मेलन का भव्य उद्घाटन माननीय गणमान्य व्यक्तियों की उपस्थिति में हुआ, जिनमें *के.आर. मंगलम विश्वविद्यालय के कुलपति प्रो. रघुवीर सिंह, शिवाजी कॉलेज के प्राचार्य प्रो. वीरेंद्र भारद्वाज, मुख्य अतिथि प्रो. रंजना अग्रवाल (निदेशक, CSIR-NIScPR), विशिष्ट अतिथि प्रो. वी. के. अग्रवाल (प्रो-चांसलर, जगन्नाथ विश्वविद्यालय) और प्रो. राजेंद्र सारिन (NFSU दिल्ली)* शामिल थे। इस अंतरराष्ट्रीय सम्मेलन में कई ख्यातिप्राप्त विदेशी विशेषज्ञों ने भी भाग लिया। *मलेशिया से प्रो. डॉमिनिक सी.वाई. फू और इराक से डॉ. अहमद करीम हुसैन अलताफी* ने व्यक्तिगत रूप से भाग लिया, जबकि *डेनमार्क से डॉ. योगेंद्र कुमार मिश्रा, अमेरिका से डॉ. अजीत कौशिक, चिली से डॉ. सपाबा और पुर्तगाल से डॉ. सोनिया काराबिनेरो* ने ऑनलाइन जुड़कर अपने विचार साझा किए।

कार्यक्रम के आयोजक सचिव चंद्रमोहन ने ब्यूरो चीफ विजय गौड़ को बताया कि सम्मेलन में छह विविध तकनीकी सत्र और दो पोस्टर सत्र आयोजित किए गए, जिनमें *ग्रीन केमिस्ट्री, सतत कृषि, फॉरेंसिक टॉक्सिकोलॉजी और पर्यावरणीय स्थिरता के लिए भारतीय ज्ञान प्रणाली* जैसे विषयों को शामिल किया गया। इसके अतिरिक्त, एक विशेष ऑनलाइन सत्र भी रखा गया, जिससे वर्चुअल प्रतिभागियों को भी संवाद करने का अवसर मिला।

वैज्ञानिक चर्चा को और अधिक सशक्त बनाने के लिए *चार उत्कृष्ट मौखिक प्रस्तुतियों और चार पोस्टर प्रस्तुतियों को विशेष रूप से सम्मानित किया गया।* सम्मेलन के दौरान *लगभग 60 पोस्टर प्रस्तुतियों* के साथ-साथ कई मौखिक प्रस्तुतियाँ भी हुईं।

युवा वैज्ञानिकों को पहचान युवा शोधकर्ताओं की उल्लेखनीय वैज्ञानिक उपलब्धियों को सराहते हुए *रयंग साइंटिस्ट अवॉर्डर दो प्रतिभाशाली प्रतिभागियों को प्रदान किया गया।* *सम्मेलन का सार और समापन* द्विदिवसीय सम्मेलन का समापन सत्र *इराक के डॉ. अहमद करीम हुसैन अलताफी* के नेतृत्व में हुआ, जिन्होंने सम्मेलन में हुई महत्वपूर्ण चर्चाओं और निष्कर्षों को संक्षेप में प्रस्तुत किया। इसके बाद **प्रो. मीना भंडारी और प्रो. मेहराज उद्दीन मीर (मोतीलाल चेयर, के.आर. मंगलम विश्वविद्यालय) ने अपने विचार साझा किए। सम्मेलन का समापन सम्मान समारोह, प्रतिभागियों की समीक्षाएँ, और औपचारिक धन्यवाद ज्ञापन** के साथ हुआ, जिसे *डॉ. चंद्र मोहन (आयोजन सचिव) और डॉ. प्रियंका कुमारी (संयोजक), AMGSE-2025* ने प्रस्तुत किया। **AMGSE-2025 ने न केवल अंतरराष्ट्रीय सहयोग और शैक्षिक आदान-प्रदान को बढ़ावा दिया, बल्कि ग्रीन केमिस्ट्री और पर्यावरण विज्ञान के क्षेत्र में सतत विकास के लिए नए अवसर भी प्रस्तुत किए।

OUR ALUMNI

"At K.R. Mangalam University, I gained in-depth knowledge of Forensic Science through hands-on practical exposure, expert-led sessions, and valuable internship opportunities. The supportive faculty and dynamic learning environment have truly enriched my academic journey."

Sanjeev Kumar

BSc(H) Forensic science

"The three years at K.R. Mangalam University, have been a mix of learning, exploring, and growing. I've had the chance to work in labs, attend interesting sessions, conferences and be part of a few good academic activities. The environment here gave me space to understand my field better and build confidence step by step. They provide me a chance of staying active in extra co-curricular activities. I was a volunteer in both NSS and YRC. Also, there were plenty of both outdoors and indoors games for students to remain happy. constant support from faculties, help me grow both professionally and personally. Looking back, it's been a simple but meaningful journey that I'll always value."

Name- Divya Panwar

BSc(H) Forensic science

"My academic journey at K.R. Mangalam University has been profoundly rewarding. The School of Basic and Applied Sciences offers a rigorous and well-structured curriculum. Faculty members demonstrate exceptional expertise and unwavering commitment to student success. The program cultivated my analytical thinking and problem-solving abilities. Research-based learning and academic seminars enhanced my subject understanding. The institution fosters a culture of discipline, academic integrity, and innovation. Supportive mentorship played a vital role in my personal and academic development. Campus infrastructure and resources greatly supported effective learning. Exposure to practical applications bridged the gap between theory and practice. I am honored to be an alumnus of this esteemed institution."

Name- Bhawna Yadav

BSc (H) Mathematics

INTERNSHIP

Students from the School of Basic and Applied Sciences at K.R. Mangalam University has successfully been completed their internship for a period of 15 days.

S. N.	Name of the student	Course	Name of the company
01	Ms Megha Jha	Forensic Science (I Semester)	Police Station District, Gurugram, Haryana
02	Ms Kakul	Forensic Science (I Semester)	Police Station District, Gurugram, Haryana
03	Mr. Arjun	Forensic Science (I Semester)	Haryana Police Station Department, Police Station Bhondsi, Gurugram, Haryana

Certificate
Of internship

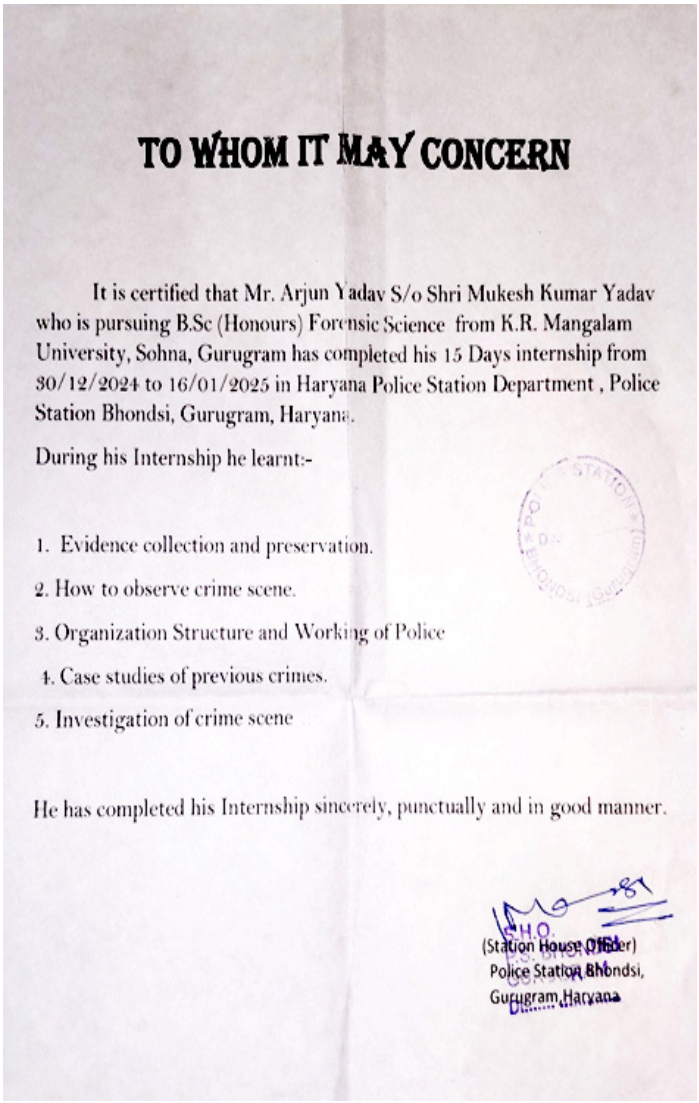
This is to Certify that Miss Megha Jha Daughter of Mr. Sanjay Jha ROLL NO (2403212014) pursing BSC (Honours) Forensic Science from KR Mangalam University Sohna Gurgaon has complete her 15 Days Training Period from 01.01.2025 to 16.01.2025 Police Station District Gurugram Haryana.

S.H.O.
P.S. Udyog Vihar
Gurugram

Certificate
Of internship

This is to Certify that Miss KAKUL Daughter of Lal Singh ROLL NO (2403212011) pursing BSC (Honours) Forensic Science from KR Mangalam University Sohna Gurgaon has complete her 15 Days Training Period from 01.01.2025 to 16.01.2025 Police Station District Gurugram Haryana.

S.H.O.
P.S. Udyog Vihar
Gurugram



TO WHOM IT MAY CONCERN

It is certified that Mr. Arjun Yadav S/o Shri Mukesh Kumar Yadav who is pursuing B.Sc (Honours) Forensic Science from K.R. Mangalam University, Sohna, Gurugram has completed his 15 Days internship from 30/12/2024 to 16/01/2025 in Haryana Police Station Department , Police Station Bhondsi, Gurugram, Haryana.

During his Internship he learnt:-

1. Evidence collection and preservation.
2. How to observe crime scene.
3. Organization Structure and Working of Police
4. Case studies of previous crimes.
5. Investigation of crime scene

He has completed his Internship sincerely, punctually and in good manner.

S.H.O.
(Station House Officer)
Police Station Bhondsi,
Gurugram Haryana

STUDENTS' CORNER

युद्ध के साये में जीवन
गूँज रही है चीखें हर ओर,
टूट गए हैं सपनों के छोर।
धधक रही है राख बस्तियों की,
खामोश हैं धड़कन उम्मीदों की।

कल जहाँ हँसी के मेले थे,
आज वहाँ बस जलते ठेले हैं।
नन्हें हाथ जो खेला करते,
अब भूख से कांपते दिखते।

माँ की गोद है खाली पड़ी,
बाप की आँखें सूखी खड़ी।
बहनों की चूड़ियाँ टूटी हैं,
भाइयों की क़ब्रें बनीं नई हैं।

क्यों खेलते हैं ये राजनीति के खेल?
जहाँ हर मोहर बस लाशों के मेल।
क्यों भूल जाते हैं वे सत्ता के लालच में,
कि इंसानियत ही मिटती है इस आंच में?

ख़त्म करो यह रक्त का नर्तन,
लौटने दो फिर से सावन।
बच्चों की हँसी जो खो गई,
वह फिर से बस्तियों में गूँजे कहीं।

युद्ध नहीं, अब शांति चाहिए,
नफ़रत नहीं, अब प्यार चाहिए।
ख़ुशबू लौटे इन वीरानों में,
फिर से जीवन हो घर-आँगनों में।

Name: Mehek Rawat

Course: B. Sc. (H) Physics

THE THEORY OF EVERYTHING: INSIGHTS FROM STEPHEN HAWKING

Stephen Hawking's The Theory of Everything is a journey through the biggest mysteries of the universe. In simple yet profound language, he explores the origins of the cosmos, the nature of black holes, and the ultimate goal of physics: a single theory that explains everything.

The Birth of the Universe

Hawking explains the Big Bang Theory, where the universe began as a tiny, dense point and has been expanding ever since. He connects this to Einstein's theory of relativity, which describes how space and time are shaped by gravity. But on the smallest scales, quantum mechanics takes over, leading to conflicts between the two theories.

Black Holes and Hawking Radiation

One of his most famous contributions is the idea that black holes aren't completely black. Instead, they emit tiny amounts of radiation (Hawking radiation), meaning they can slowly evaporate over time. This discovery changed our understanding of these mysterious cosmic objects.

The Search for a Grand Theory

Physics currently has two major pillars: relativity, which explains gravity on large scales, and quantum mechanics, which governs the tiny world of particles. But they don't fit together. Scientists are searching for a Theory of Everything that unifies all forces of nature. If found, it could reveal the deepest secrets of existence.

Why This Book Matters

Hawking's writing isn't just about science—it's about curiosity, wonder, and the excitement of discovery. He breaks down complex ideas into simple explanations, making the universe feel accessible to everyone. Whether you're a physics student or just someone fascinated by the cosmos, The Theory of Everything offers a glimpse into the mind of a genius and the mysteries that still awaits.

Name: Nikhil Kumar

Course: B. Sc. (H) Physics

GALLERY


School of Basic and Applied Sciences, K.R. Mangalam University, Gurugram
and Shivaji College, University of Delhi, New Delhi
WELCOMES
GUEST OF HONOR
Prof. V. K. Agarwal
Pro Chancellor
Jagannath University, Jaipur
tional Conference on Advanced Materials for Green Chemistry and
Sustainable Environment
(AMGSE-2025)
20-21 March 2025
Day 1


K.R. MANGALAM UNIVERSITY


JECRC
25
JMCH
Department of Forensic Science
School of Sciences
Presents
Techno Trace
The Cyber Forensic Conclave
&
GET SET INVESTIGATE 3.0
A Two-Day National Level Mega Forensic
Event Featuring Series of Expert Workshops,
Internship Fair, Forensic Expo & Competitions


CRIMINOLOGY & PENOLOGY


GUEST LECTURE
Technology Nodes
K.R. MANGALAM UNIVERSITY
School of Basic and Applied Sciences
In collaboration with KEIC
Organizes
Inter-University Science Fiesta 2025
Date: 28.02.2025 Time: 10:00am onwards
Venue: Multi-Purpose Hall, Aryabhata Block, 4th Floor, KRMU Campus
SCIENCE FIESTA 2025
EVENT #2
DEBATE COMPETITION

K.R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

08800697010-15 011-48884888 8800697012

www.krmangalam.edu.in | admissions@krmangalam.edu.in

krmuniv krmuniv K.R. Mangalam University

Krmangalamuniv K.R. Mangalam University