

WELCOME TO OUR Newsletter

**"Welcome back,
we're glad to be with you again."**

As we kick off our first edition of 2026, this issue brings together moments that truly reflect the spirit of IMMB where science meets people, passion meets purpose, and ideas turn into impact. From the curious young minds at Junior Scientist Day, to inspiring research breakthroughs, hands-on technical sharing, and heartfelt personal journeys from our postgraduate community. This edition is a celebration of growth in every form.

We also take a moment to embrace the meaningful reflections of Ramadhan, reminding us to pause, reset, and reconnect—not just with our work, but with ourselves and those around us.

Whether you are here for the science, the stories, or simply a quick read between experiments, we're glad you're here.

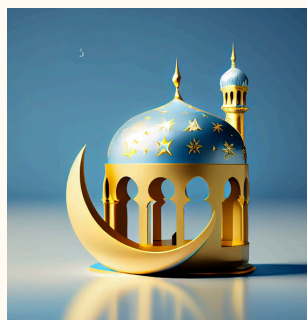
Happy reading

Chief-in Editor
Zaleha Afandi,CHRM
Deputy Science Officer

Find out more



**JUNIOR SCIENTIST
DAY**



**RAMADHAN
SPIRIT**



**POSTGRADUATE
JOURNEY**



**RESEARCH
TALK**

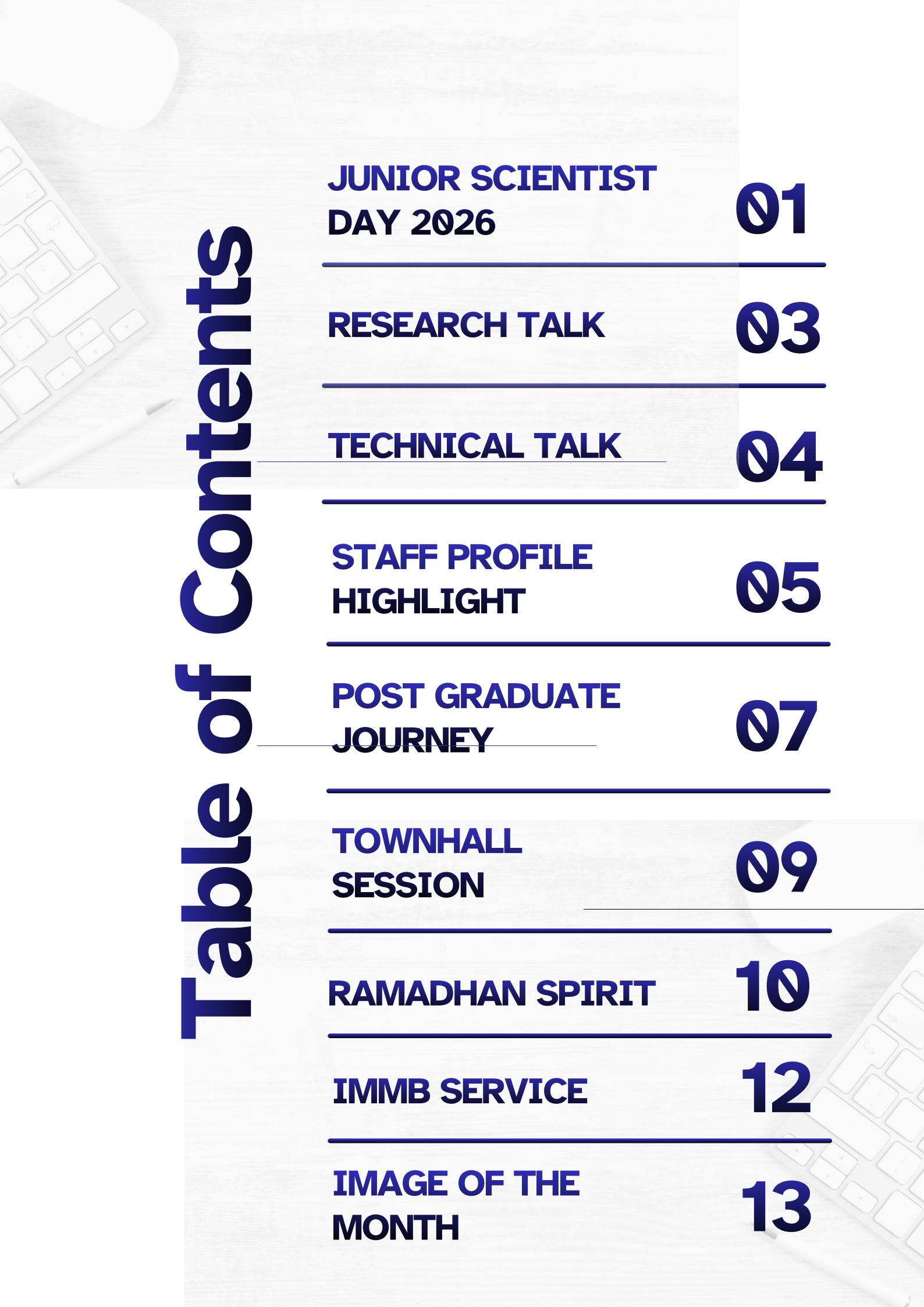


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MONTH 13**

Junior Scientist Day 2026

where curiosity meets discovery

Laughter, curiosity, and the excitement of discovery filled the halls of the Institute of Medical Molecular Biotechnology (IMMB), Universiti Teknologi MARA, as young participants stepped into the world of science during Junior Scientist Day (JSD) 2026. Designed to spark interest in science among children, the annual programme transforms complex scientific concepts into engaging and hands-on experiences that are both educational and inspiring.

Since its introduction, Junior Scientist Day has grown into one of IMMB's key science outreach initiatives, bridging the gap between the research community and the public. The programme was created with a simple yet powerful vision: to allow young learners to explore science beyond the classroom and experience how scientific investigations are carried out in real laboratories.



Among the most exciting stations was the **Crime Scene Investigation** activity, where children learned how investigators collect evidence and analyse fingerprints. The experience gave them a glimpse into the fascinating world of forensic science. At the **Clinical Simulation Centre**, participants witnessed simulation-based demonstrations including CPR techniques, allowing them to understand how medical professionals respond in emergency situations.

The exploration continued with stations focusing on human anatomy, forensic pathology, microbiology, hematology, and DNA analysis, where researchers introduced the tools and techniques used in biomedical laboratories. The participants were able to see how blood components are studied, how microorganisms are examined, and how DNA can be extracted and analysed. The programme also featured a special exhibition by the **Malaysian Fire and Rescue Department**, where officers demonstrated how fire investigations are conducted and how electrical short circuits can lead to fires.



The day began with the arrival and registration of participants, followed by a welcoming briefing introducing IMMB and its role in advancing biomedical research. Soon after, the young participants embarked on what organisers called a "science adventure"—a journey through eight interactive learning stations designed to expose them to different scientific disciplines.

"THE CRIME SCENE ACTIVITY WAS MY FAVOURITE. I FELT LIKE A REAL DETECTIVE SOLVING A MYSTERY."

Parents were also actively involved in the programme, joining guided tours of the stations to observe the learning activities and interact with researchers. This created a shared experience where families could appreciate the role of science in everyday life and support their children's curiosity about scientific discovery.

**"I DIDN'T KNOW
SCIENCE COULD BE
THIS FUN. I WANT
TO BECOME A
SCIENTIST ONE
DAY!"**

The true highlight of the day, however, came from the reactions of the young participants themselves. Many were fascinated by the opportunity to step into laboratory environments and interact directly with scientific equipment. One enthusiastic participant shared, "I liked the DNA station because I learned that we can study people using their DNA. It felt like being a real scientist!" Another participant excitedly commented, "The crime scene activity was my favourite. I felt like a detective solving a mystery."

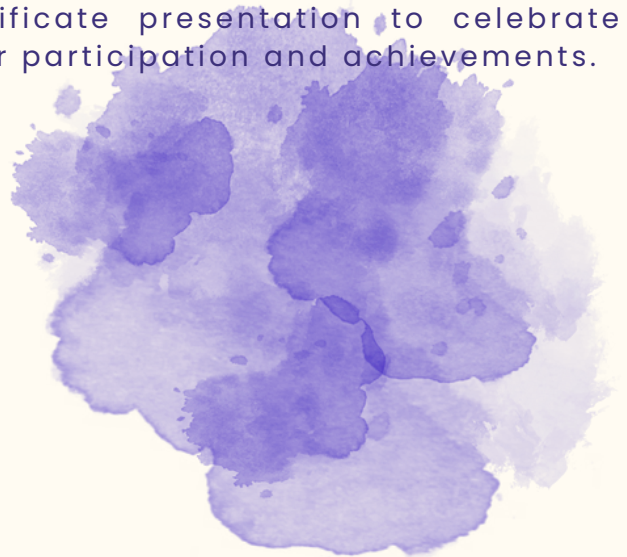


Through Junior Scientist Day, IMMB continues to demonstrate that science can be engaging, accessible, and inspiring for young minds. By opening its laboratories to the community and creating immersive educational experiences,

IMMB hopes to ignite a lasting passion for science, one that may shape the future generation of researchers, innovators, and problem solvers.



The event concluded with a lively case-closure session, where participants worked together to identify the "suspect" based on the evidence they had explored throughout the stations. This was followed by a closing ceremony and certificate presentation to celebrate their participation and achievements.



IMMB, envisioned to become a world class research institute in both fundamental and applied medical molecular biotechnology; in doing so we embark on a journey to discover new knowledge by hosting a research talk delivered by renowned scientist across Malaysia and beyond borders. We dedicate our efforts to ensure that we only bring the best new research ideas and constructive discussion to those who part take in the talk.

Hence, between January and March of 2026, we have been given an opportunity to host Malaysian leading vaccine scientist – Dr Pheik-Sheen Cheow from Malaysia Genome & Vaccine Institute (MGVI). Sharing her thrilling journey towards developing new vaccine utilizing weak virus as a vector as vehicle to treat diseases.

DR PHEIK-SHEEN CHEOW

NEWCASTLE DISEASE VIRUS (NDV) -VECTORED VACCINE- A JOURNEY OF EXCITEMENT.

In this talk, Dr Pheik or also known as Dr Jojo by her colleague, shed lights on the Newcastle Disease Virus (NDV) – a bird virus that has been repurposed for human medicine. It is considered a good candidate for a vaccine platform because it can be easily modified at a molecular level and naturally triggers a strong immune response.



Currently the researchers in MGVI are in the progress of re-engineering the virus to make it safe to be used on human to treat Nipah's viral infections. Using the transfection of genetic material from other diseases (like COVID-19), NDV possess the potential as a new targeted vaccine candidate. The talk proves how laboratory research can evolve into a medically beneficial findings. It emphasizes that turning these discoveries into real-world medical solutions requires teamwork, creativity, and persistence.

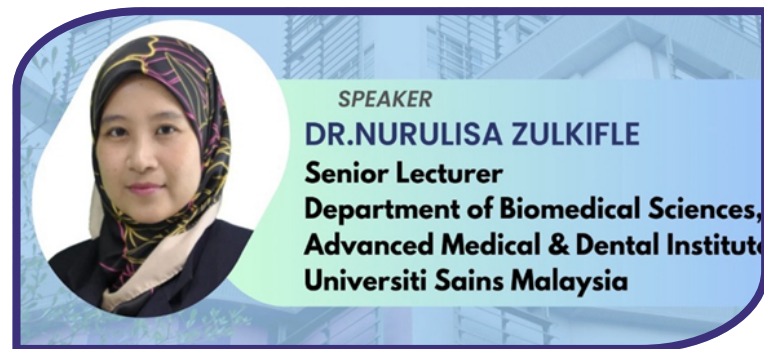
TECHNICAL TALK

bringing knowledge and practice: tools for modern research

To fortify the IMMB vision, apart from Research Talk – IMMB also hosted a series of technical talk – conveyed by vendors from established companies. Presented by specialists and qualified personnel, the technical talk discusses about latest trend in the market. From high end equipment, latest technologies in kits and assays to the most economical procedures that produces extraordinary outcomes for research.

On 27th January 2026 – Biomix Solutions specialists Dr Nurulisa Zulkifli a Senior Lecturer, Dept of Biomedical Sciences Advanced Medical & Dental Institute, USM) shares her knowledge and expertise on “MASTERING ELISA: HANDS-ON INSIGHTS with ELK BIOTECHNOLOGY KITS”. Her talk introduces the ELISA procedures – a plate- based assay technique designed for detecting and quantifying substances such as peptides, proteins and antibodies. The detection involved a key- principle of antigen-antibody binding – with an enzyme-linked detection which produces a colorimetric signal.

ELISA can be divided into 4 main types that is Indirect ELISA, Direct ELISA, Sandwich ELISA and Competitive ELISA. She introduces the kits from ELK Biotechnology that can accommodate more than 20 species, including human, rat, mouse, rabbit, pig, cattle, goat, sheep, guinea pig, chicken and zebrafish, etc., which are involved in the fields of immunochemistry, oncology, neurobiology, cell cycle, signalling and other research. She concluded her talk with a demo hands- on ELISA procedures’ using the ELK Biotechnology kits.



Staff Profile Highlight

Hazrul Nizam Hisham Hasmi



Academic Journey and Early Career

A true product of the UiTM ecosystem, Mr. Hazrul Nizam has built his career in the biological sciences, beginning with a Diploma in Science from UiTM Sabah before advancing to a Bachelor of Science (Hons.) in Biomolecular Science at UiTM Shah Alam. His professional foundation was further solidified through clinical exposure as an Industrial Trainee at the Sarawak General Hospital's Department of Pathology, where he bridged the gap between academic theory and diagnostic practice.

Today, Mr. Nizam serves as a Senior Assistant Science Officer at the Institute of Medical Molecular Biotechnology (IMMB), UiTM where his expertise in molecular science contributes significantly to the institution's specialized research and laboratory operations.

Professional Growth and Technical Expertise

Mr. Nizam joined Institute of Medical Molecular Biotechnology (IMMB) in 2011 as an assistant science officer supporting laboratory operations and researchers. With a background of Genetic research, he was attached to molecular laboratory in IMMB as a support staff and other responsibilities include conducting experiments, managing laboratory workflows, assisting students during practical sessions, and ensuring compliance with Good Laboratory Practice (GLP) and biosafety standards.

Over the years, Mr. Nizam has developed the expertise to perform equipment troubleshooting and basic maintenance independently. He is highly capable of establishing laboratory rules and regulations tailored to specific institutional requirements, as well as designing efficient work processes that align with both laboratory needs and regulatory standards.

Memorable experience in IMMB

One of the most memorable experiences in IMMB is when, he volunteers as one of the team members to do Covid-19 sample screening when IMMB is selected as one of 10 diagnostic laboratories at public higher learning institutions nationwide have been roped in as part of a joint initiative by the Higher Education and Science, Technology and Innovation Ministries.

Starting April 2020 until early 2022 when the operation was moved to Hospital UiTM Puncak Alam. Working with almost 300 sample per day with full doffing of personal protection equipment (PPE) is a challenge that truly memorable.

Personal Values

Known as a person that is responsible and adaptable to changes is one of the key values that he holds serving as one of the support staff in IMMB. His experience reflects as a guide for continuous growth, both as a staff and a contributor to mission and vision of IMMB and its future.



Fun Fact about Nizam

Outside of work, he enjoys cooking due to the fact that in the early days of his life, he have to help his mother sells traditional cakes, pastries.

Postgraduate Diary

The journey of an island girl to PhD
by Asma Ali Ibrahim MZE

My journey started in Malaysia, where I began a bachelor's degree in biotechnology science. What started as an alternative quickly became a genuine passion. I went on to pursue a Master's in Biomedical Science and eventually embarked on a PhD in Medicine. Today, as I approach the final stage of my doctorate, I am amazed by how far that island girl has come academically. Pursuing a PhD was not easy. A PhD is often regarded as a solitary journey, and at times this can be true, especially when dealing with experimental challenges, troubleshooting results, or working alone in the laboratory. Yet, certain days are different thanks to the supportive environment within the Faculty of Medicine and the Institute of Medical Molecular Biotechnology (IMMB).

ASMA ALI
IBRAHIM MZE

As I near the end of my PhD, I often find myself reflecting on the journey that led me here. I can't help but think about the little Comorian girl who once aspired to be a doctor. Even though I'm not a doctor, I understand that the dream has taken a different form.

Growing up on a small island in the Indian Ocean, I had a powerful dream: I wanted to become a doctor. But dreams do not always go as planned. Despite the efforts, optimism, and prayers, pursuing medical school was not possible for me, and accepting that reality was painful. Yet years later, I realised that I was not cut off to be a doctor. "The Almighty always knows what is best for you." What once seemed like a lost dream eventually turned into something I was grateful for and helped me find a new scientific vocation.



IMMB has opened the doors not only to scientific discovery through research talks, journal clubs and activities but also to a supportive community that fostered my growth. I am deeply appreciative of my supervisors for their guidance and patience; the dedicated lab staff who made our work possible; and my fellow postgraduate students who brought friendship, companionship, laughter and support to the most difficult days.

A JOYOUS YET TIRING DAY FEAT IMMB

PhD has opened doors to many "firsts". My first conferences, independently written paper, unsupervised lab work and programs. I can still vividly recall my shaky voice, trembling hands, and overwhelming sense that I had not given my best during my first oral conference.

I left that experience discouraged, unfulfilled and even questioning whether I should ever present again. Still, it also taught me the value of resilience and overcoming fear. Another memorable experience was serving as facilitator during Junior Scientist Day 2025, when I stood in front of curious young minds full of potential. It was both nerve-wracking and deeply inspiring.

Equally memorable was the struggle of my first MTT experiment. The frustration of another failed experiment, repeated attempts, and troubleshooting.

However, those moments turned into insightful lessons, especially through my supervisor's guidance. She taught me how to analyse problems, look for solutions, and make scientific judgements rather than dwelling on failure. More importantly, she reminded me that there is no failure in research, but learning lessons. Her constant support and mentorship have shaped the scientist I am becoming, and for that I will always be grateful.

Thus, to my dear postgraduate students, research is not an easy journey. There will be good and bad days, thrilling times and times when you feel like giving up. **STAY STRONG:** a failed experiment is a chance to grow, learn, and improve rather than a failure. One day you will be commemorating your accomplishments and, ultimately, your graduation.

When that day comes, the struggles will seem like faraway memories, and you will realise that each step was part of an extraordinary adventure. To that island girl full of dreams, we are almost there. You will soon be "Dr", not in the sense you had in mind, but as a researcher working on findings that might eventually help people, and perhaps that dream of helping people has come true.

Townhall Session

Building the Future: Supervisors Convene for Strategic Townhal

The 2026 IMMB Townhall session starts on 3rd February 2026 with a focused session dedicated to our lecturers and supervisors. As the backbone of the institute's research and academic success, 19 Supervisor and lecturer able to joined the IMMB Director to align on the roadmap for the year 2026.

The primary focus was the unveiling of the new IMMB policy framework. This proactive briefing allowed our supervisors and lecturer to review upcoming administrative changes while providing professional feedback on policy feasibility. Policy such as the closure of laboratory after working hour and additional CCTV camera is few examples of upcoming policy change.

Your Voice, Our Mission: Students Share Insights at Townhall

On February 5th as IMMB opened its doors to students and facility users for the second session of the IMMB Townhall series. This session provided a vital platform for those on the ground to interact directly with the institute's management. The meeting began with a warm welcome and a progress update on the institute's facilities by the Director of IMMB. The highlight for many was the open presentation of the upcoming IMMB policy, ensuring that our student body is well-informed about the rules and guidelines that shape their daily work. Students spoke face-to-face with management about their experiences and challenges.



After that an engaging session Q&A to clarify supervisor expectation and concern on the new implementation. By holding these sessions biennially, IMMB ensures that our leadership remains in sync with our academic staff, fostering a culture of transparency and mutual respect.



After that during the Q&A session the users addressed concerns ranging from facility access to policy impact on their research. All the feedback gathered during this session will be instrumental in refining the IMMB community experience. We thank our student participants for their honesty and contributions. We look forward to seeing the positive impact of these discussions as we implement our new policies together!

Ramadhan Spirit

"PAUSE, REFLECT, RENEW: THE SPIRIT OF RAMADHAN"

IMMB welcomes the month of Ramadhan 1447 Hijr with weekly tazkirah that were given by officer of Islamic Affairs from UiTM Puncak Alam Campus and Puncak Perdana Campus.



"Menghayati Hikmah Puasa dalam Kehidupan Seharian"

Our very first tazkirah for was conducted on the 25th February 2026 with **USTAZ MOHD NORHISYAM AZMAN**, Executive Officer of Islamic Affairs (Imam). He delivered an online talk titled "Menghayati Hikmah Puasa dalam Kehidupan Seharian" where he shared profound insights into how to appreciate the time of fasting in our daily life.

He also reminds us on how to ensure our Ramadhan become more meaningful with to become more discipline with our talk and behavior. Ramadhan also is a month for a time for self-reflection and spiritual renewal. The talk manages to gather 69 online participants.



"Ramadhan: Jalan Menuju Taqwa & Perubahan Diri".

The second tazkirah was conducted on the 4th march and was presented by **TUAN HAJI LUFTI FAUZI SABARI**, Senior Assistant Registrar (Islamic Affairs), UiTM Puncak Alam Campus. He reminded viewers that we are already in the second week of Ramadhan, and it is important to maintain all the acts of "Ibadah" performed since the beginning of the month. He began by explaining the meaning of taqwa, emphasizing that fasting is not merely an annual tradition but should be accompanied by a sincere sense of reverence and consciousness of Allah s.w.t.

Additionally, he encouraged us to continue performing many good deeds to fully maximize the blessings of this holy month. This tazkirah able to gather 432 online participants.



"10 Malam Terakhir Ramadan:
Peluang Keemasan".

3rd Tazkirah session is by **USTAZ MOHD HAFIZ MOHD HASAN**, Senior Assistant Registrar (Islamic Affair), UiTM Puncak Perdana Campus on the 11th March 2026. Ustaz Mohd. Hafiz presented a tazkirah with the titled "10 Malam Terakhir Ramadan: Peluang Keemasan". The tazkirah mainly focus on the chase of Lailatul Qadr, since we already on the 3rd phase of Ramadhan and the holiest night in Islam occurring in the last ten days of Ramadan.

He reminded us on all the promise of Allah states in the Qur'an (Surah Al-Qadr 97:3) that this single night is better than one thousand months, making it the most sacred time for prayer and spiritual reflection. He also reminds us to control our behavior and speech with each other.



"Istiqamah Selepas Ramadan"

The last tazkirah session organized by IMMB for month of Ramadhan 1447Hijra is on the 18th march 2026 manage to gather 764 online participants. The session was presented by **USTAZ KHAIRUL AZWAD IBRAHIM**, Assistant Registrar (Islamic Affair), UiTM Puncak Alam Campus. The focus of tazkirah is to ensure us on how to maintain all the good deeds that all we have done during Ramadhan and carry it towards Syawal and so forth.

We must instill the "Istiqamah" in our daily life and reflect before the month of Ramadhan ends. He also shares that one of the signs that all of our deeds accepted by Allah s.w.t is we are able to be consistent even after Ramadhan.

With blessing of Allah s.w.t., IMMB manage to get 1852 participant total for its Tazkirah Ramadhan this year. Hopefully IMMB able to do the session again for the month of Ramadhan 1448Hijr and so on, Insha'Allah.

These trainings are designed to equip researchers, students, and laboratory personnel with both theoretical understanding and hands-on experience, ensuring confidence and competency in the lab.

WESTERN BLOT TRAINING



Complimenting this, the Western Blot Training focisese on protein analysis techniques, guiding participants through key process such as sample preparation, gel electrophoresis, transfer and detection. Participants gain practical insight into troubleshooting and data interpretation enabling them to produce accurate anf meaning ful results in their research work.

Image of the Month

January

When colon cells meet the unexpected guests.

A mixture of cocci and bacilli bacteria (red arrows) observed in colon cells under May-Grünwald Giemsa stain. This common yet costly contamination scenario can turn every culture dish into an unexpected outcome and remains a nightmare for every cell culture users. Such contamination is commonly introduced through minor breaches in aseptic technique or airborne exposure, which can significantly alter experimental outcomes.

This image highlights the importance of strict aseptic handling in maintaining cell culture integrity and minimising the risk of future contamination.

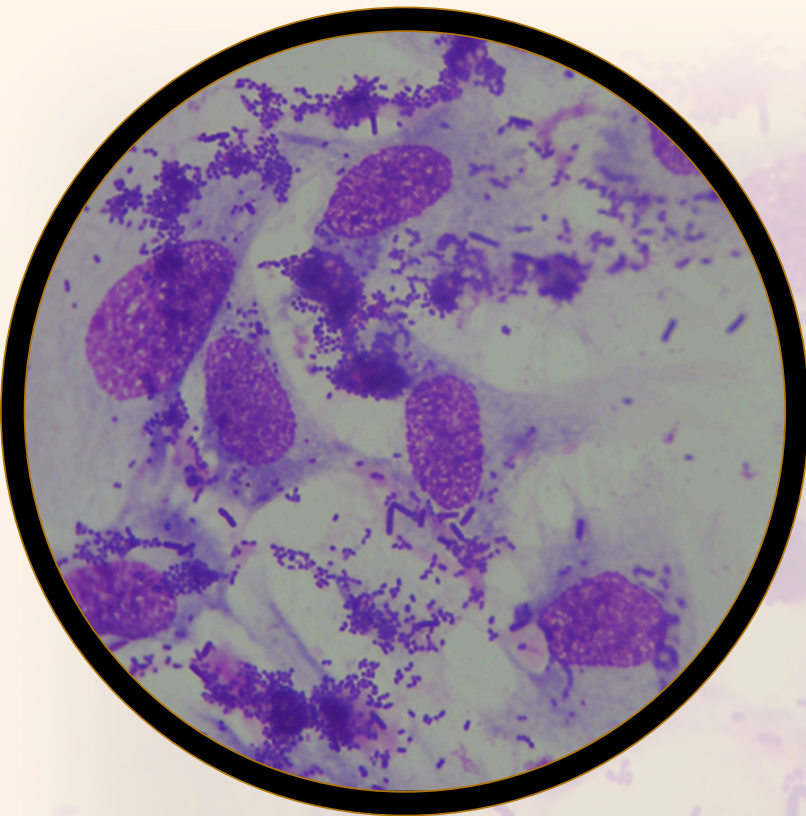


Image courtesy of
Khairiyah Murad,
PhD student under
supervision of
Associate Professor
Dr. Hassanain Al-
Talib

February

An SEM view of a confluent Caco-2 monolayer on a Transwell insert, where a high TEER value ($826 \Omega\text{cm}^{-2}$) highlights the formation of a tight, functional intestinal epithelial barrier. The Transwell system enables polarised cell growth by separating apical and basolateral compartments, closely mimicking the intestinal epithelium. Under these conditions, Caco-2 cells differentiate into enterocyte-like cells representative of the human small intestine which is used as an in vitro model to study intestinal barrier function and permeability.

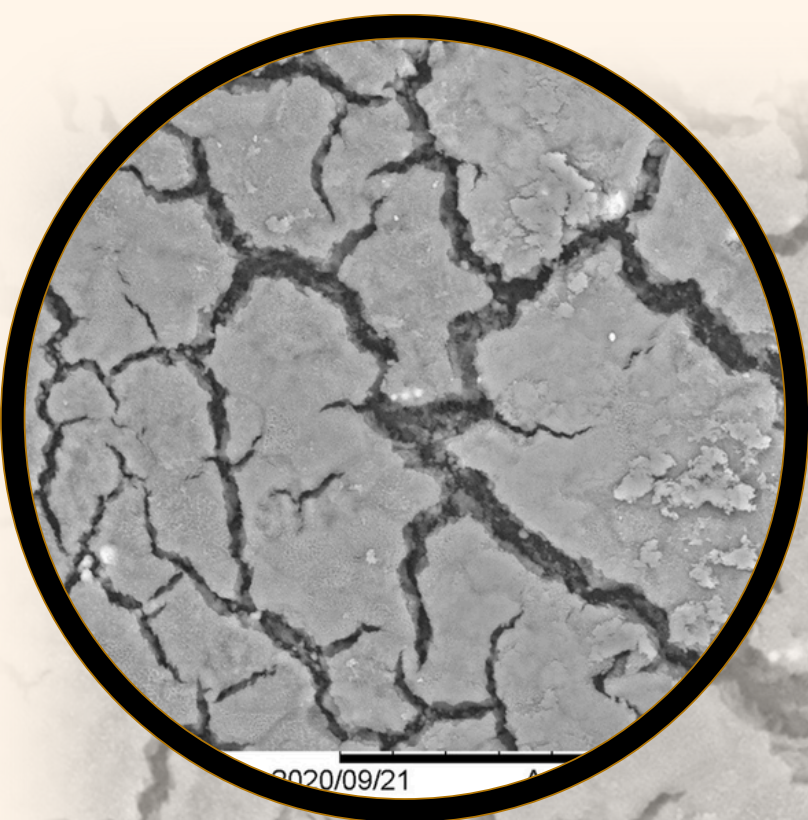


Image courtesy of
Nur Syafina Binti
Hisham, MSc
student under
supervision of Dr.
Wan Nor I'zzah Wan
Mohamad Zain

March

The "Green Stain".

The "Green Stain" captures a moment of quiet catastrophe unfolding within the fragile architecture of a developing embryo. Beneath layers of meticulously forming tissue, a silent alarm has been activated—set off by maternal exposure to bisphenol A (BPA). Through precise staining, the release of cytochrome c becomes visible, radiating from the mitochondria like a breach in cellular order. This molecular escape marks the point of no return, igniting a cascade of apoptotic signals that spread relentlessly from cell to cell. What should have been a symphony of growth is instead transformed into a controlled collapse, each glowing signal a testament to programmed cell death overtaking development. The luminous contrast within the image serves as haunting evidence of a future interrupted—life halted not by chance, but by an unseen chemical influence, long before it could fully take shape.

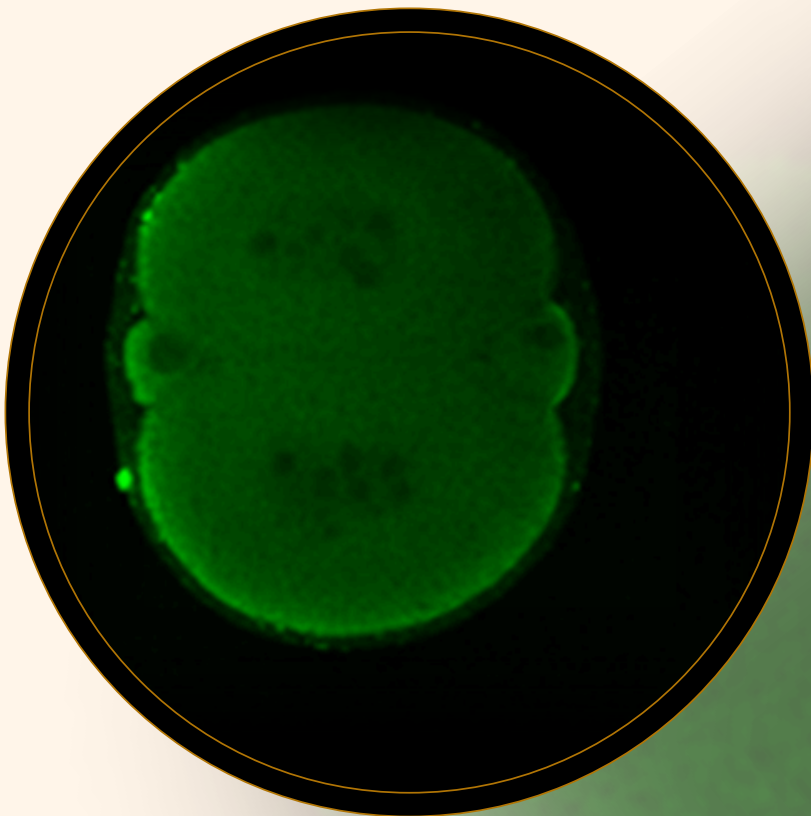


Image courtesy of
Aqila Akmal
Mohammad Kamal,
PhD student under
supervision of
Professor Dr. Nor
Ashikin Mohamed
Noor Khan

Salam Aidilfitri

Selamat Hari Raya Aidilfitri
from all of us at IMMB

Thank you for being part of IMMB community.
We truly appreciate your continuous support
and connection with us.
Maaf Zahir dan Batin



Dengan ingatan tulus ikhlas daripada
Institut Bioteknologi Molekul Perubatan (IMMB), Fakulti Perubatan UTM



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