



EXTENDED ABSTRACT



InViCCAD 2025
1ST INTERNATIONAL VIRTUAL COMPETITION OF CREATIVE
ARTS & INNOVATIVE DESIGN IN TEACHING & LEARNING



Design Innovation Academic Show 2025



Organized by



Fakulti
Seni Lukis & Seni Reka
Cawangan Kedah



اوسها تقوى موليا

Collaboration with



#perubahanluarbiasa
#ADpilihanpertama



**EXTENDED
ABSTRACT**

**Design
Innovation
Academic
Show 2025**





DIAS 2025 (Design Innovation Academic Show) is all about "Transcending the Boundaries of Creativity: Innovation in Art & Design for 21st Century Education." This vibrant program shines a spotlight on how creativity and innovation are reshaping modern education.

It consists of three key components. First up is the Mindareka Design Show, an exhibition that showcases students' final year projects and creative designs, giving them a chance to connect with industry professionals and the wider community. Next, we have the Northern Innovation Academic Tour (NIAT), which takes participants on an academic adventure to select institutions and innovation centers in the northern region, aimed at promoting knowledge sharing and building strong academic and professional networks.

Finally, there's the 1st International Virtual Competition of Creative Arts & Innovative Design in Teaching & Learning (InViCCAID), a global competition that recognizes outstanding practices in teaching and learning by blending art, technology, and innovative design. But DIAS 2025 is more than just a talent showcase; it's a powerful platform for empowering both students and educators, while also strengthening collaborations between universities, creative industries, and global communities. With its inclusive and interdisciplinary approach, this initiative strives to spark relevant, competitive, and impactful ideas and innovations that truly benefit society and push the future of education forward.



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Design
Innovation
Academic
Show 2025



Prof. Dr. Roshima Haji Said
Acting Rector
UiTM Kedah Branch

Rector's Message

I am delighted to extend my heartfelt congratulations to the College of Creative Arts, UiTM Kedah Branch, for bringing MINDAREKA 2024 - Unleashing Your Visual Creativity to fruition. The triumphs of past MINDAREKA editions undoubtedly fueled the organization of this year's event, making MINDAREKA 2024 a reality.

MINDAREKA 2024 - Unleashing Your Visual Creativity stands as a testament to the dedication of students at the College of Creative Arts, UiTM Kedah Branch, providing them with a platform to showcase their final art projects. Beyond serving as a space for the exploration of fresh, innovative, and entrepreneurial concepts, this exhibition is poised to connect aspiring talents with potential clients and employers.

I extend my sincere gratitude to all participants whose enthusiasm and support have contributed to the success of MINDAREKA 2024 - Unleashing Your Visual Creativity. Their unwavering belief and commitment have truly brought this event to life, marking it as a resounding triumph!





Head of Faculty Message

It is an honour to introduce DIAS 2025 – Design Innovation Academic Show, held under the theme “Transcending the Boundaries of Creativity: Innovation in Art & Design for 21st-Century Education.” This significant event reflects the faculty’s ongoing commitment to fostering a culture of innovation, critical thinking, and creative exploration among our students and academic community. As we navigate the complexities of the 21st century, it becomes increasingly clear that education must go beyond traditional boundaries to embrace multidisciplinary approaches that are both relevant and future-forward.

The three core components of DIAS 2025, Mindareka Design Show, Northern Innovation Academic Tour (NIAT), and the 1st International Virtual Competition of Creative Arts & Innovative Design in Teaching & Learning (InViCCAID) which is serve as vital platforms to highlight the convergence of design, technology, and pedagogy. These initiatives not only empower our students to showcase their talents and ideas, but also create opportunities for engagement with industry leaders, academic peers, and global collaborators. The Mindareka Design Show celebrates student creativity and innovation through compelling final year projects. NIAT fosters knowledge sharing and institutional partnerships through academic visits and exchanges, while InViCCAID offers international recognition for excellence in integrating art and design into teaching and learning.

I would like to express my deepest appreciation to the organising committee, faculty members, students, and strategic partners who have worked tirelessly to bring this programme to life. Your dedication and collaborative spirit have made DIAS 2025 a reality and a reflection of our shared vision for transformative education. It is my hope that this platform will continue to inspire meaningful dialogue, cultivate groundbreaking ideas, and spark a new wave of innovation that enriches both education and society.



Mohamat Najib Mat Noor
Head of Faculty
Faculty of Arts & Design
UiTM Kedah Branch





***Industrial
Design
(Diploma)***





WASH+ | WATER AND HYGIENE CONTAINER

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ABSTRACT

The WASH+ product is a groundbreaking humanitarian solution crafted to enhance clean water storage and hygiene management for vulnerable communities, particularly in areas hit by disasters or those that are hard to reach. Made from durable waterproof plastic for holding water and high-density polyethylene (HDPE) for added strength, this product tackles essential needs in the water, sanitation, and hygiene (WASH) sector. Its lightweight yet sturdy design ensures that water can be stored safely without the risk of contamination. The waterproof plastic lining guarantees leak-proof performance, while the HDPE materials offer a fantastic strength-to-weight ratio, UV resistance, and chemical stability, making it perfect for tough outdoor conditions. The WASH+ unit is designed to be modular and stackable, which means it can be deployed flexibly in both emergency situations and long-term uses. Its design focuses on portability, hygiene, and ease of use, making it ideal for quick distribution in flood zones, refugee camps, or rural areas where water is scarce. With features like a sealed dispensing system and easy-to-clean surfaces, it helps minimize the risk of waterborne diseases and encourages safe hygiene practices. Beyond just water storage, the WASH+ product can also take on multiple roles, such as serving as handwashing stations, storing hygiene supplies, or providing temporary sanitation support. By blending durable materials with smart design, this product plays a vital role in creating sustainable WASH solutions that meet international humanitarian and environmental standards. Plus, the use of recyclable HDPE aligns with circular economy principles, helping to lessen long-term environmental impact.

Keywords: Waterproof, HDPE, Hygiene, Storage, Humanitarian



INTRODUCTION

The WASH+ product is a thoughtful design solution aimed at tackling urgent needs in water, sanitation, and hygiene, particularly during humanitarian crises and in communities that often get overlooked. Built on the foundations of industrial design, this project dives into how elements like form, function, material choice, and a focus on the user can come together to create a product that's not just effective but also sustainable. It addresses pressing issues like the lack of access to clean water, inadequate sanitation systems, and the increasing need for portable, durable, and hygienic solutions in areas hit by disasters. This assignment pushes us to rethink the role of industrial design in humanitarian settings, emphasizing not just how well the product works but also how efficiently it can be manufactured, transported, and used over time. By opting for waterproof plastic to safely hold water and high-density polyethylene (HDPE) for its structural parts, the WASH+ product is designed to be tough yet lightweight and budget friendly. These materials were selected for their recyclability, ability to resist contamination, and durability in harsh conditions. Through a process of research, prototyping, and design refinement, the project highlights the need for creating inclusive and adaptable products that meet basic human needs while also being mindful of their environmental impact. This introduction lays the groundwork for a deeper look into how thoughtful industrial design can play a significant role in advancing global health and sustainability initiatives.



Figure 1 WASH+

MATERIALS AND METHODS

The WASH+ product was designed and developed with a clear goal in mind: to create a practical, durable, and user-friendly solution for water storage and hygiene, especially in emergency situations and areas with limited resources. The journey started with user research to pinpoint the main issues, such as water contamination, lack of hygiene access, and the need for easy transport. With these insights in hand, the design featured a modular container system made from waterproof plastic for safe water storage, while the outer structure was crafted from high-density polyethylene (HDPE) for its strength, UV resistance, and long-lasting durability. To perfect the product's form and function, we went through a series of sketches, 3D models, and mock-ups, ensuring it was easy to handle, stack, and clean. We also included features like an integrated dispensing system and ergonomic handles to boost usability and encourage safe hygiene practices. Throughout the



development process, we paid close attention to how easy it would be to manufacture, how efficiently materials were used, and the overall environmental impact. By blending functionality with thoughtful design, the WASH+ product emerged as a sustainable and scalable solution that meets both humanitarian needs and industrial design standards.

RESEARCH AND FINDINGS

The journey of developing the WASH+ product brought to light some important lessons about choosing the right materials, focusing on user needs, and using rapid prototyping to tackle humanitarian challenges. By testing and refining designs with 3D-printed STL components and waterproof plastic, we created a product that's not only functional but also lightweight and versatile. Users really appreciated features like the ergonomic handle, leak-proof seal, and modular design, which made it easy to carry, clean, and connect with other units. Our material tests showed that the high-density polyethylene and waterproof plastic held up well against UV rays, water leaks, and physical wear and tear, making them perfect for outdoor and emergency situations. Thanks to 3D printing, we could quickly tweak smaller parts like nozzles, clips, and connectors, enhancing the product's usability and ease of manufacturing. In the end, this project successfully achieved its goal of delivering a practical, durable, and scalable WASH solution that can be deployed in disaster relief efforts or areas with limited resources.

CONCLUSION & RECOMMENDATIONS

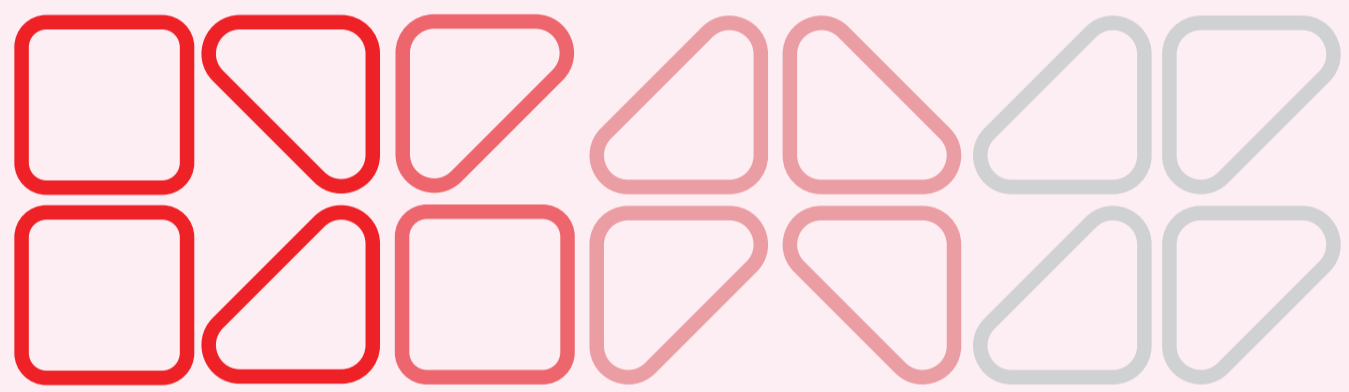
The WASH+ project showcases how blending industrial design with the right materials and cutting-edge fabrication techniques, like 3D printing, can tackle pressing global humanitarian issues. By using waterproof plastic for safe water storage and incorporating STL-based 3D-printed parts for essential features, the end result is a practical, sturdy, and user-friendly system for water storage and hygiene. This design ticks all the boxes for portability, safety, ease of use, and durability in outdoor settings. Plus, it champions sustainability by utilizing recyclable materials and a modular approach. Looking ahead, it would be beneficial to carry out extensive field testing in real disaster zones or rural areas to collect long-term feedback from users. Adding



smart features, such as water-level indicators or filters, could also boost its functionality. Additionally, considering biodegradable or recycled materials for non-structural components could help lessen the environmental footprint. Partnering with NGOs or relief organizations would be a great way to ramp up production and ensure the product aligns with international humanitarian standards.

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