



EXTENDED ABSTRACT



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



Design Innovation Academic Show 2025



Organized by



Fakulti
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Cawangan Kedah



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Collaboration with



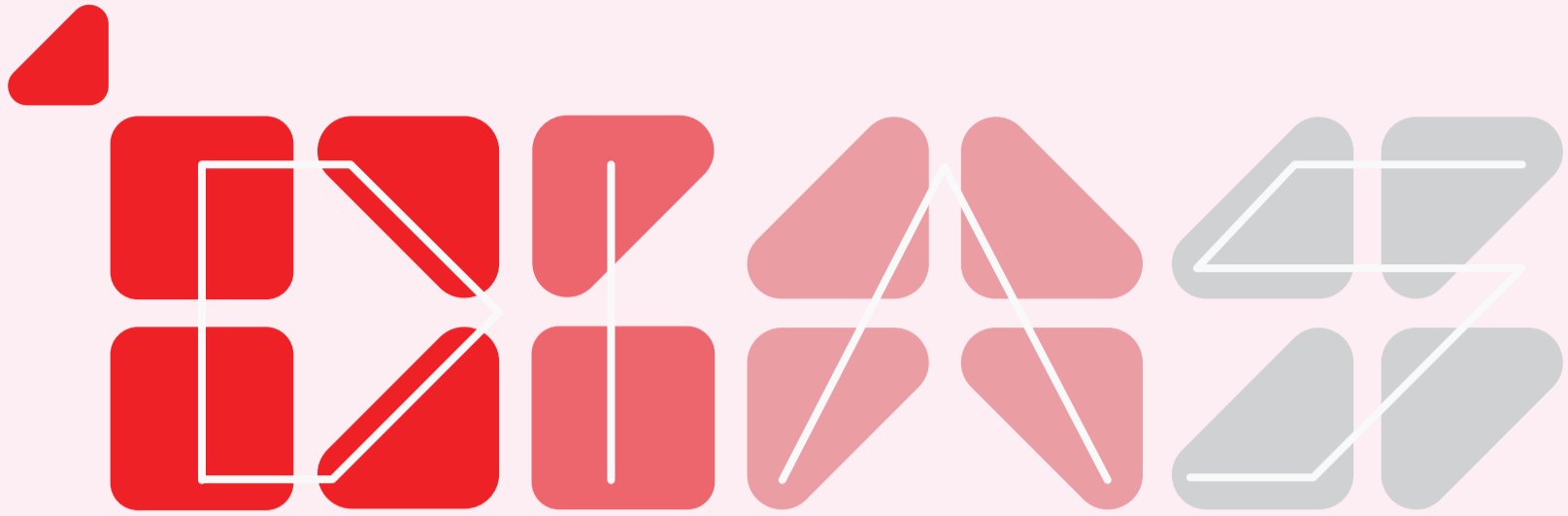
#perubahanluarbiasa
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ABSTRACT**

**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
(Bachelor)**





VERA HOLDER | LEATHER KEY HOLDER

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ABSTRACT

Vera Holder is a minimalist key holder designed with sustainability in mind, utilizing plant-based leather made from aloe vera. Inspired by the growing demand for eco-friendly alternatives, this product highlights how modern accessories can be both stylish and environmentally responsible. The design emphasizes clean lines and a compact form, suitable for individuals who carry multiple keys in their daily routine while prioritizing sustainability and function. The leather-like material is created by extracting aloe vera fibers, processed into a flexible and durable surface with a soft touch and natural finish. The key holder features hand-stitched detailing, polished metal components, and a smooth protective coating to enhance longevity. By using biodegradable materials and cruelty-free production methods, *Vera Holder* stands as an example of innovation in sustainable lifestyle products. The result is a lightweight, durable, and functional accessory that aligns with today's values of conscious consumption. Through thoughtful material selection and minimalist design, *Vera Holder* introduces plant-based leather into everyday items, supporting a greener future for fashion and product design.

Keywords: Aloe Vera Leather, Plant-Based Material, Minimalist Design, Sustainable Accessory, Eco-Innovation



INTRODUCTION

In today's world, sustainability has become more than just a trend it is a necessity. The demand for eco-friendly alternatives is growing rapidly, especially in materials traditionally sourced from animals, such as leather. Conventional leather production is associated with environmental degradation, including excessive water use, toxic chemical treatments, and high carbon emissions (Kuzmanović et al., 2023). As consumers become more environmentally conscious, plant-based materials offer a responsible and innovative solution.

Aloe vera, a widely available succulent known for its medicinal properties, has shown promising potential as a sustainable leather substitute. Rich in natural fibers and bioactive compounds, aloe vera can be processed into flexible, durable sheets that mimic the texture and usability of animal leather. Vera Holder was developed as a response to this shift blending minimalist design with the benefits of aloe vera-based synthetic leather. Designed for individuals who manage multiple keys in daily routines, it provides a compact, organized solution while promoting a sustainable lifestyle.

PROBLEM STATEMENT

There is insufficient research identifying which plant types are most suitable and effective for use as synthetic leather materials. Although materials such as cactus, pineapple leaves, and mushrooms are being explored, there remains a lack of consolidated documentation that evaluates their comparative viability. This gap in knowledge hinders innovation in developing consistent and high-performing eco-friendly leather alternatives (Kuzmanović et al., 2023).

There is a lack of established processing methods for converting plant-based materials into consistent, high-quality synthetic leather. Although techniques such as sun drying and pressing are commonly used, standardized procedures with clear guidelines for producing tough, flexible, and durable leather substitutes remain underdeveloped. As a result, plant-based leather materials often display inconsistent performance and quality, limiting their scalability and reliability in industrial applications (Ng, 2022; Kuzmanović et al., 2023).

The physical properties and application potential of plant-based synthetic leather remain largely unverified, which limits its acceptance in design and manufacturing industries. While several prototypes of plant-based leather have been successfully developed, many still fall short of meeting the mechanical and physical standards of traditional leather. Critical properties such as tensile strength, elasticity, water resistance, and wear durability require further scientific investigation and performance validation before these materials can be confidently used in real-world applications such as fashion products, upholstery, or accessories (Kuzmanović et al., 2023; Montoya-Torres et al., 2022).

MATERIALS AND METHODS

Vera Holder utilizes leather derived from aloe vera slime, developed through various experimental methods. The design features an iron hook that allows users to carry multiple keys conveniently and access them with ease. For the key holder which uses an iron hook that has been provided to hang many keys and is easy to carry anywhere, it makes it easier for people to take the key and not have to worry about choosing it. The design draws inspiration from the aloe vera plant particularly its leaves and vase-like form. Its subtle fragrance further reflects the use of genuine aloe vera in its composition, enhancing the sensory experience.



Figure 1.1: Composition of aloe vera leather using glycerin, tapioca, water, aloe vera, and cotton.



Figure 1.2: Composition using glycerin, water, aloe vera, and fog.



Figure 1.3 This use a Glycerin, Water, Aloe Vera and Polyster.

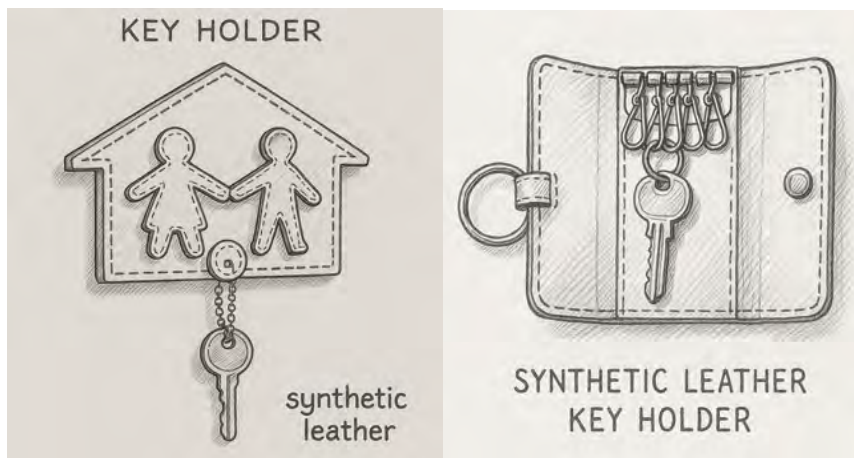


Figure 1.4: Ideation sketches of Vera Holder a key holder crafted from aloe vera-based leather.



RESULTS AND DISCUSSION

Vera Holder demonstrates that plant-based materials like aloe vera can be transformed into modern, functional accessories with both environmental and design value. By utilizing aloe vera leather in the creation of a compact key holder, this project brings attention to how sustainable materials can perform well in small-scale lifestyle products. The final prototype showcases a clean, minimalist aesthetic, soft natural texture, and sufficient durability for everyday use. Its lightweight feel and simple form also align with modern consumer preferences for convenience and portability.

This project proves that natural, biodegradable materials can be adapted into practical objects without compromising style or function. It also shows how plant-based alternatives can contribute to reducing dependence on animal leather, aligning product design with eco-conscious values. Moving forward, the concept behind Vera Holder can be expanded into a series of accessories such as wallets, phone cases, or card holders each embracing sustainability as a core design principle. Further exploration of materials like pineapple fiber, mushroom leather, or banana stems can also support a broader commitment to environmentally responsible product design.

CONCLUSION & RECOMMENDATION

Vera Holder demonstrates that sustainable innovation can be achieved without compromising style or function. By utilizing aloe vera-based synthetic leather, this minimalist key holder offers an eco-friendly alternative to traditional leather products. Its compact design and plant-based material reflect a growing demand for ethical consumer goods that align with environmental values. While simple in form, the product carries a deeper message about rethinking everyday items through a sustainable lens.

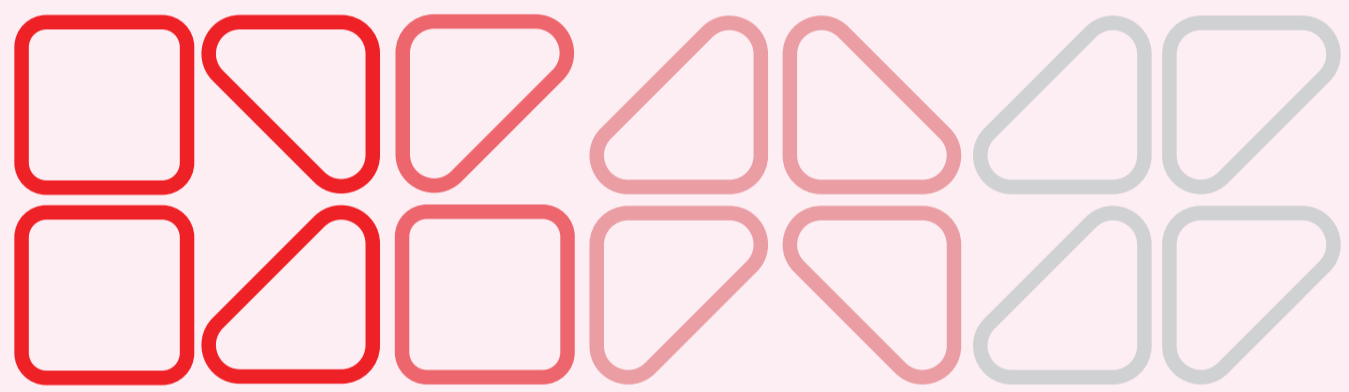
This project highlights the potential of plant-based materials to be integrated into modern lifestyle accessories. It encourages designers to explore alternative bio-materials like aloe vera not just for environmental impact, but also for their unique textures and design possibilities. In the future, this concept can be expanded into a full range of eco-friendly accessories from wallets to bags strengthening the role of natural materials in contemporary design. Continued research into processing methods and material performance will help bridge the gap between experimentation and large-



scale application.

REFERENCES

1. Kuzmanović, M., Zeljković, M., Mihajlović, D., & Gajić, V. (2023). *Plant-based leather alternatives: Sustainability, processing, and market perspectives*. *Journal of Cleaner Production*, 402, 136879.
2. Ng, L. Y. (2022). *Processing techniques for bio-based leather: Challenges and prospects*. *Materials Today: Proceedings*, 59(4), 1805–1810.
3. Montoya-Torres, J. R., Serna, S., & Alarcón, F. (2022). *Challenges in bio-based material supply chains: The case of plant-derived synthetic leather*. *Resources, Conservation & Recycling Advances*, 14, 200098.
4. Wang, Y., Liu, H., & Zhang, J. (2021). *Recent advances in bio-based materials for sustainable fashion and textiles*. *Sustainable Materials and Technologies*, 30, e00332.
5. Rodríguez-Fabià, S., Cavallaro, G., & Lazzara, G. (2021). *Sustainable leather-like materials from agro-waste: A review on bio-based alternatives*. *Environmental Advances*, 5, 100101.



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