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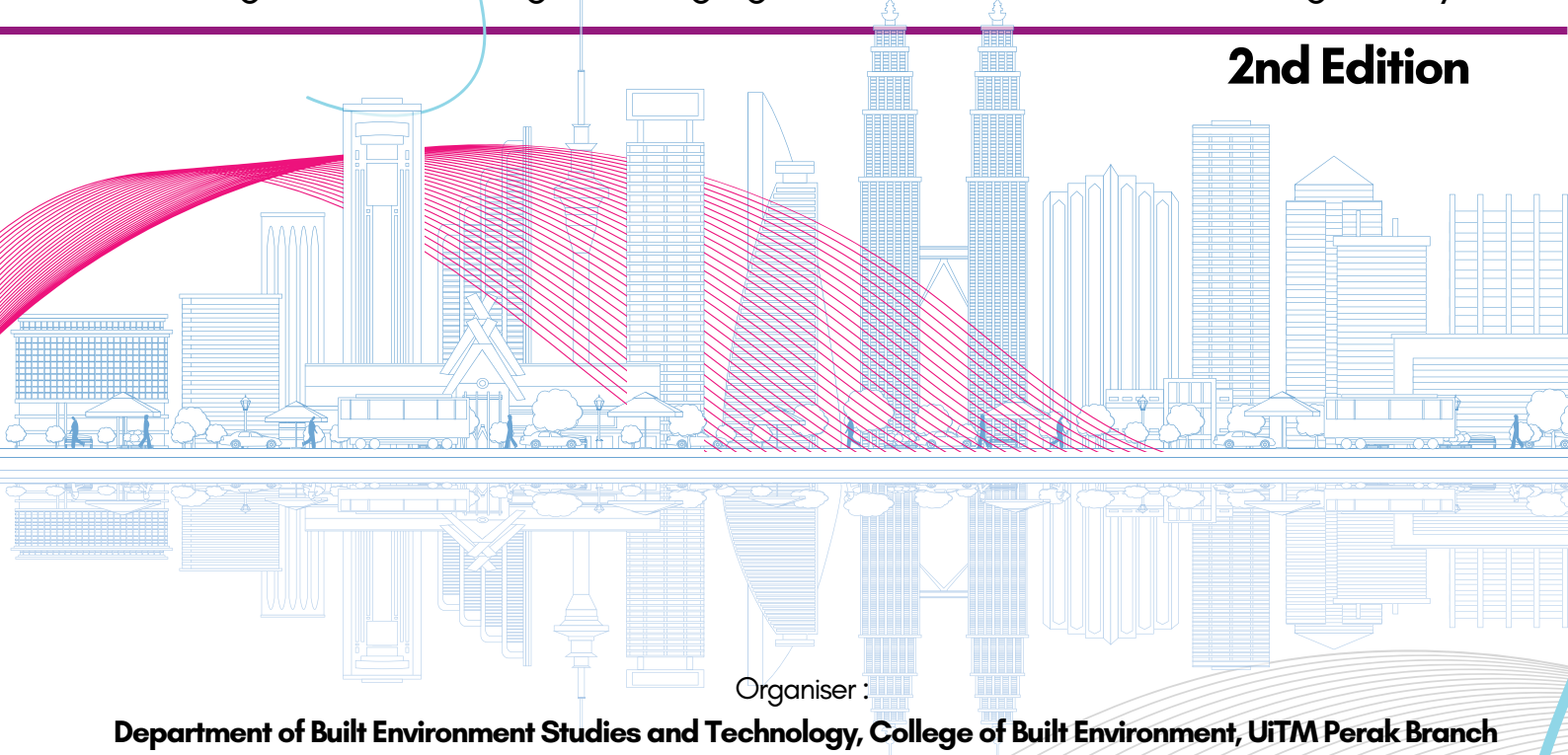
Cawangan Perak

e - Proceedings



**Proceeding for International Undergraduates Get Together 2024 (IUGeT 2024)**  
"Undergraduates' Digital Engagement Towards Global Ingenuity"

**2nd Edition**



Organiser :

**Department of Built Environment Studies and Technology, College of Built Environment, UiTM Perak Branch**

Co-organiser :

**INSPIRED 2024. Office of Research, Industrial Linkages, Community & Alumni (PJIMA), UiTM Perak Branch**

**Bauchemic (Malaysia) Sdn Bhd**

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## **CLOTHING CARE 2.0: SMART HANGING CLOTHES RACK**

Atiqah Firhanah Azizul Ahmad<sup>1\*</sup>, Nuraisyah Ashidqii Afflin Ahmad Affendy<sup>2</sup>, Nur Hazwani Shahrul Anuar<sup>3</sup>, and Muhammad Aliff Mohd Rous<sup>4</sup>

<sup>1,2,3,4</sup>Department of Built Environment Studies and Technology, College of Built Environment, Universiti Teknologi <sup>MARA</sup>, Perak Branch, Seri Iskandar Campus 32610 Bandar Seri Iskandar, Perak

\*2023840662@student.uitm.edu.my

### **Abstract**

An automatic hanging clothes rack is a convenient solution for drying clothes indoors. It typically features a motorised system that raises and lowers the rack, making it easier to hang and retrieve clothes without the need for manual effort. It is especially useful in spaces where traditional drying methods are not feasible, like apartments or homes without outdoor drying space. Some additional details of this rack include adjustable height settings, timers for drying cycles, and built-in sensors to prevent overheating or overloading. Since this rack can be raised and lowered, it is great for saving space in small rooms or apartments. When not in use, it can be raised to the ceiling or a high position, freeing up floor space. It is also convenient because users can simply hang their clothes on the rack, press a button, and let the motorised system take care of the rest. This eliminates the need for manual labour and makes the drying process more efficient. Next, many models are designed to be energy-efficient, using minimal power during operation. This can help reduce electricity bills compared to traditional dryers. While the initial cost of an automatic hanging clothes rack may be higher than a traditional drying rack, it can be a worthwhile investment for those who need a convenient indoor drying solution. Overall, automatic hanging clothes racks offer a convenient, space-saving, and efficient way to dry clothes indoors, making them popular among urban dwellers and those with limited outdoor space.

**Keywords:** *Automatic hanging rack, motorised system, adjustable setting*

### **1. INTRODUCTION**

Introducing our latest innovation in home laundry care, the smart hanging clothes rack, Clothing Care 2.0. Elevating the traditional drying experience to new heights, this revolutionary solution combines cutting-edge technology with sleek design to transform the way you care for your clothes. With its automated motorised system, adjustable height settings, and intuitive controls, Clothing Care 2.0 offers unparalleled convenience. Say goodbye to the hassle of manual labour—simply hang your clothes, press a button, and watch as the rack effortlessly raises and lowers, taking care of the drying process for you. But this innovation goes beyond just drying. Equipped with smart sensors, it ensures optimal drying conditions while protecting your garments from damage. Its space-saving design makes it ideal for apartments and homes of any size, while its energy-efficient operation helps you save on electricity bills. Experience the future of laundry care with our smart hanging clothes rack, where effortless elegance meets unparalleled convenience, revolutionising the way you care for your clothes.

The pinnacle of automated hanging racks redefines the way you care for your wardrobe. This next-generation solution seamlessly integrates advanced technology with intuitive design to revolutionise your laundry routine. At the heart of Clothing Care 2.0 is its innovative sensor system, which intelligently adjusts the height of the rack to accommodate various room dimensions.

Whether you are in a spacious laundry room or a cosy apartment, this rack adapts to your space with precision and ease. Gone are the days of struggling to find the perfect spot for your drying rack—Clothing Care 2.0 does the work for you.

And let us talk about fragrance. With Clothing Care 2.0, your clothes emerge not only dry and wrinkle-free but also delicately scented. Its integrated fragrance system infuses your garments with a subtle, refreshing aroma, turning laundry day into a spa-like experience. But perhaps the most impressive feature of Clothing Care 2.0 is its energy-efficient operation. Utilising cutting-edge technology, this rack consumes minimal power while delivering maximum performance. Save on electricity bills without compromising on drying quality—it's a win-win.

Elevate your laundry game with Clothing Care 2.0, where versatility, efficiency, and innovation converge to redefine clothes care as you know it. But the innovation does not stop there. Clothing Care 2.0 is equipped with a state-of-the-art folding mechanism, allowing it to neatly fold your clothes as they dry. Say goodbye to wrinkled garments and hello to effortlessly organised laundry. Whether with shirts, pants, or delicate fabrics, this rack handles them all with finesse.

Clothing Care 2.0's folding mechanism is a game-changer in the world of laundry care. Unlike traditional drying racks that leave clothes wrinkled and require manual folding afterwards, Clothing Care 2.0 streamlines the entire process from drying to folding seamlessly.

Here is how it works:

- i. **Precision Folding:** As your clothes dry on the rack, Clothing Care 2.0's intelligent sensors monitor the fabric's moisture levels. Once the optimal dryness is achieved, the folding mechanism springs into action, gently and precisely folding each garment.
- ii. **Versatile Folding Options:** Clothing Care 2.0 is not limited to just one type of garment. The rack is designed to handle all shirts, pants, skirts, or delicate fabrics like lingerie or silk. Its versatile folding mechanism adjusts to the size and shape of each item, ensuring a perfect fold every time.
- iii. **Wrinkle-Free Results:** By folding your clothes while they're still slightly damp, Clothing Care 2.0 prevents wrinkles from setting in. This means you will no longer have to spend extra time ironing or steaming your garments, saving you both time and effort.
- iv. **Effortless Organisation:** As Clothing Care 2.0 neatly folds your clothes, it also helps you stay organised. No more piles of laundry waiting to be folded—with this innovative rack, your garments are neatly arranged and ready to be put away.
- v. **Gentle Handling:** The folding mechanism of Clothing Care 2.0 is designed to handle even the most delicate fabrics with care. Whether it is silk blouses or lace lingerie, you can trust that your garments will be treated gently, preserving their quality and prolonging their lifespan.

Overall, Clothing Care 2.0's advanced folding mechanism revolutionises the drying and organisation process, providing you with wrinkle-free, perfectly folded clothes every time. Say goodbye to laundry day stress and hello to effortlessly organised laundry with Clothing Care 2.0.





Figure 1. Clothing Care 2.0



Figure 2. The hanger can go down within 1.3 m.

## 2. MATERIALS AND METHODS

### 2.1 Materials

Materials used for smart hanging clothes rack:

- i. **Sturdy Frame:** Clothing Care 2.0 is constructed using high-quality materials such as durable steel or aluminium to ensure stability and longevity.
- ii. **Adjustable Rails:** The hanging rails are typically made of lightweight yet robust materials like aluminium or reinforced plastic, allowing for easy height adjustment.
- iii. **Sensors:** Advanced sensors are integrated into the rack, typically made of high-grade plastic or metal alloys, to detect room dimensions and moisture levels in clothes.
- iv. **Folding Mechanism:** The folding mechanism comprises precision-engineered components made from durable plastics, metals, and rubberised materials to ensure smooth and reliable operation.
- v. **Control Panel:** The control panel is often made of sleek, fingerprint-resistant materials such as tempered glass or high-grade plastic, providing a user-friendly interface for operating the rack.
- vi. **Fragrance Dispenser:** Clothes Care 2.0 is equipped with a built-in fragrance dispenser, typically made of non-reactive plastic or glass, designed to hold fragrance capsules or essential oils.
- vii. **Fragrance Capsules:** Specially formulated fragrance capsules are made from biodegradable materials and contain concentrated scents that are released gradually during the drying process.
- viii. **Essential Oils:** Users have the option to use their preferred essential oils, which are typically stored in glass or plastic bottles with a dropper or spray nozzle for easy application.
- ix. **Microfiber Pads:** Some models feature replaceable microfiber pads, made of soft and absorbent materials, designed to hold and distribute fragrance evenly onto the clothes.

### 2.2 Methods

The methods for using the smart hanging clothes rack:

- i. **Assembly:** Clothing Care 2.0 is typically assembled using included hardware and tools, following detailed instructions provided by the manufacturer.
- ii. **Installation:** The rack can be installed in various locations, such as laundry rooms, bedrooms, or closets, using mounting brackets or adjustable feet, depending on the design.

- iii. **Sensor Calibration:** Upon installation, the sensors are calibrated to accurately detect room dimensions and optimise the height adjustment functionality.
- iv. **Programming:** Users can program the rack's settings, such as drying duration and folding preferences, using the intuitive control panel interface.
- v. **Operation:** To use Clothing Care 2.0, users simply hang their clothes on the adjustable rails, select the desired settings on the control panel, and let the automated system take care of the rest.
- vi. **Folding Process:** As clothes dry, the sensors monitor moisture levels and activate the folding mechanism at the optimal time. The folding mechanism gently folds each garment, ensuring wrinkle-free results.
- vii. **Maintenance:** Regular maintenance involves cleaning the rack with a damp cloth, checking for any loose components, and lubricating moving parts as needed to ensure smooth operation over time.
- viii. **Fragrance Selection:** Users can choose from a variety of fragrance options, including floral, citrus, or fresh linen scents, depending on their personal preference.
- ix. **Fragrance Application:** Before starting the drying cycle, users apply a few drops of their chosen fragrance directly onto the fragrance dispenser or microfiber pads.
- x. **Fragrance Dispensing:** During the drying process, the fragrance dispenser releases the scent gradually, dispersing it evenly onto the clothes as they dry.
- xi. **Adjustable Intensity:** Some models offer adjustable fragrance intensity settings, allowing users to customise the level of scent dispersion based on their preference.
- xii. **Refilling:** When the fragrance dispenser is empty, users can easily refill it with additional fragrance capsules or essential oils to continue enjoying freshly scented laundry.
- xiii. **Maintenance:** Periodic cleaning of the fragrance dispenser and microfiber pads is recommended to prevent buildup and ensure optimal fragrance dispersion.

By combining high-quality materials with meticulous manufacturing methods, Clothing Care 2.0 sets a new standard for automated hanging racks, providing users with a reliable and efficient solution for their laundry needs. By incorporating fragrance-dispensing capabilities into Clothing Care 2.0, users can enjoy the added benefit of freshly scented clothes with every drying cycle, enhancing their overall laundry experience.

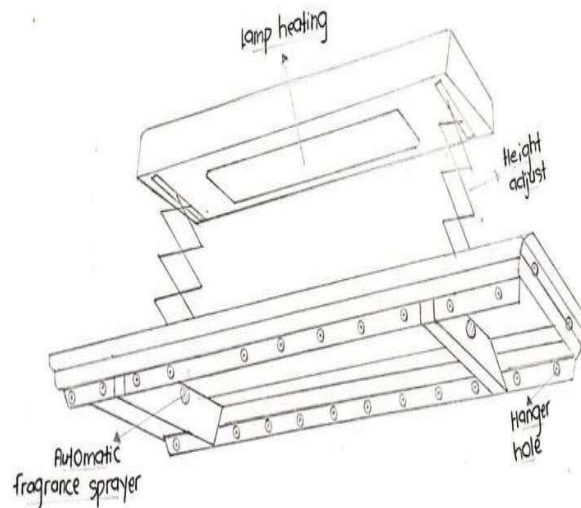


Figure 3. The automatic system of the hanger



### **3. RESULT AND DISCUSSION**

Clothing Care 2.0 has received widespread acclaim for its innovative features, including automated drying, folding, and fragrance infusion. Users, including busy professionals, meticulous homemakers, and individuals with limited mobility, have praised its time-saving capabilities and convenience. This revolutionary solution has transformed the laundry experience, making it more accessible and enjoyable for users of all backgrounds. Clothing Care 2.0 represents a significant advancement in garment care, simplifying and streamlining the laundry process through automation and technology. Its adaptable design ensures integration into various living spaces, sparking discussions about the future of household chores and the role of automation in enhancing quality of life. With its positive impact on user satisfaction and household efficiency, Clothing Care 2.0 has redefined the way we approach garment care in the modern age.

### **4. CONCLUSION**

In conclusion, Clothing Care 2.0 embodies a paradigm shift in the realm of laundry care, offering a comprehensive solution that addresses every aspect of the drying process. Its seamless integration of advanced features, from intelligent height adjustment to precision folding and fragrance infusion, elevates the entire laundry experience to new heights of convenience and efficiency. By harnessing the power of automation and innovation, Clothing Care 2.0 not only simplifies the chore of laundry but also enhances the quality of garment care. Its ability to adapt to different room dimensions, handle various fabric types with care, and impart a subtle fragrance to clothes exemplifies its versatility and sophistication. Whether you are a busy professional, a meticulous homemaker, or someone who simply values convenience, Clothing Care 2.0 offers a transformative solution that streamlines the laundry process and delivers perfectly clean, fresh, and neatly folded clothes every time. Embrace the future of laundry care with Clothing Care 2.0 and experience a new level of efficiency and satisfaction in your daily routine.

### **5. ACKNOWLEDGEMENT**

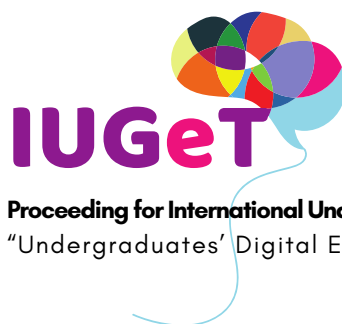
We would like to express our gratitude to the tireless efforts of our research and development team, whose dedication and ingenuity have brought Clothing Care 2.0 to fruition. Additionally, we extend our appreciation to the users and stakeholders who provided valuable feedback and insights throughout the development process. Together, we are shaping the future of garment care and revolutionising the way we approach household chores. Thank you for your unwavering support and commitment to innovation.

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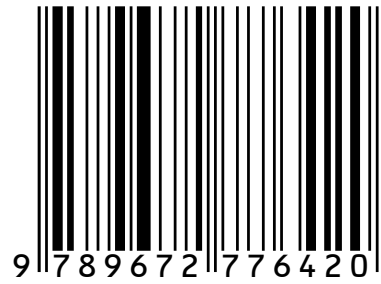
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