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# AUTO-MAT DRYER

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## ABSTRACT

Home accidents cases in Malaysia are contributed by falls on the same level that due to slipping, tripping and stumbling. Home injury mainly happened because of not fully dried foot that led to slipping. The standard foot mat used at home is not user friendly because it can lead to slippery. One of the main problems the inconvenient foot mat is always in wet condition. Therefore, an invention named AUTO-MAT Dryer is introduced as an alternative way to upsize the drying capability compared to standard foot mat. The main components of AUTO-MAT Dryer include nichrome, polyvinyl chloride (PVC), rubber sheet, fans and 12V DC. This foot dryer is designed by adding axial fan, heating element powered by electric and activated by a mere of touch and pressure. This foot dryer is able to minimize the home injury caused by slipping and falling. The AUTO-MAT Dryer is an effective, simple, low cost and has a potential to be patented and commercialized.

**Keywords:** Foot dryer; home injury; economical; slippery

## 1. INTRODUCTION

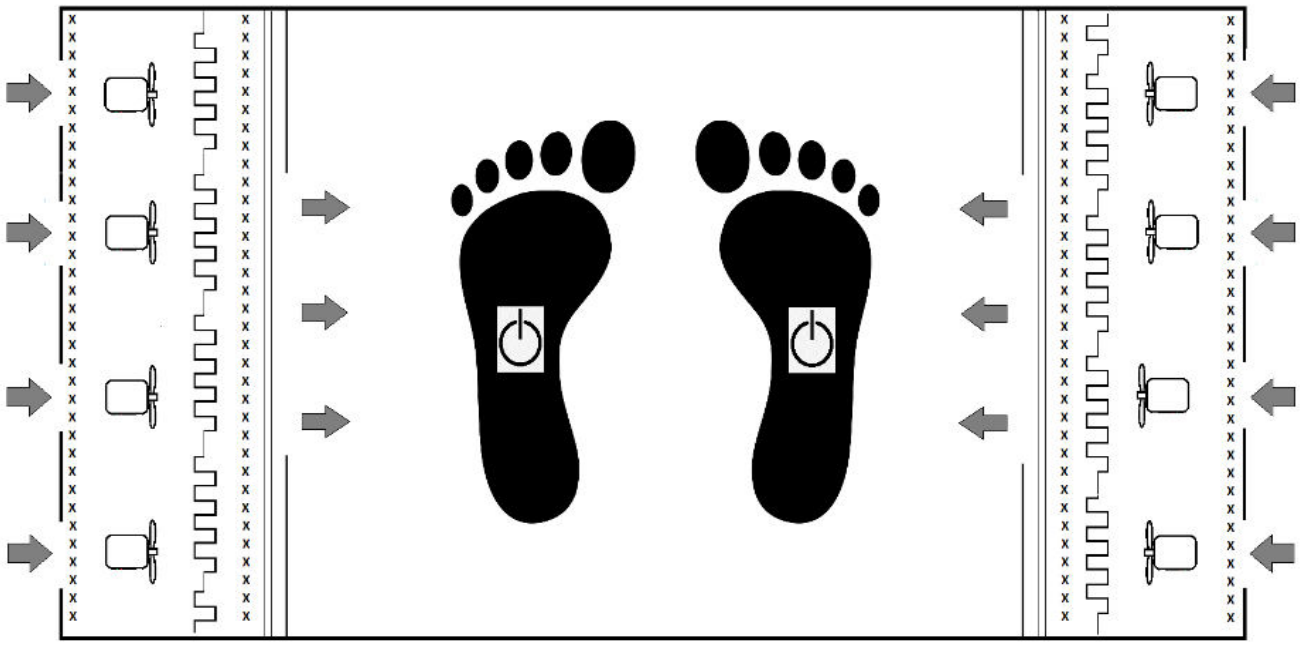
Home accidents are second to road as a place for injury and morbidity that may be fatal. There were 13,401 cases of such kind of accidents reported and 0.3% (44 of the cases) are deadly [1]. One of the most common causes of accident at home is slippery [2]. Slipping and falling can lead to serious and sometimes permanent injuries, especially for children and the elderly [3-4]. The Occupational Safety and Health Administration (OSHA) estimates that slip trip and fall accidents is higher compared to car accidents [5-6].

The most common hazards at home that can cause slips and falls include unconditional foot mat. Therefore, to overcome this problem, an innovation development which is AUTO-MAT Dryer is designed with modern looks and innovative features, safety and style with this foot dryer. Foot dryers come with a sensor to start the dryer, which then blows out hot air. This foot dryer take about 50-60 seconds are most efficiency comparatively standard foot mat.

## 2. INNOVATION DEVELOPMENT

### Product Description

AUTO-MAT Dryer main components include nichrome, polyvinyl chloride (PVC), rubber sheet, axial fans and DC motor.



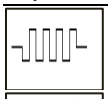
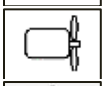
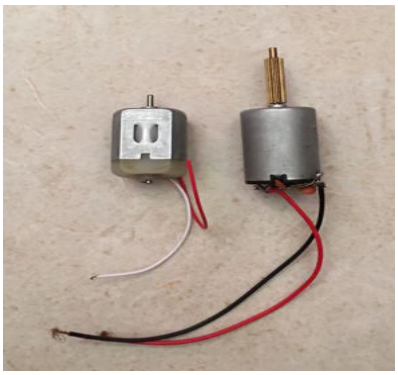
| Symbol | Component |
|---|---|
|  | Nichrome : Heating element |
|  | Fan |
|  | Switch/Sensor |

**Figure 1:** AUTO-MAT dryer schematic diagram

The materials used to construct the AUTO-MAT Dryer are as follows:

(a)



(b)

(c)

(d)

(e)

**Figure 2: (a)** Polyvinyl chloride (PVC) pipe **(b)** DC Motor **(c)** Axial fans **(d)** Nichrome **(e)** Rubber sheet

Working Principle

This AUTO-MAT Dryer works by DC motors that functions to spin blower in a horizontal arrangement and hot air is created by heating element (nichrome) will flow out. This foot dryer is activated by a touch or pressure sensitive sensors that located at the middle of the mat.

## 3. COMMERCIAL POTENTIAL

This product is made for community especially household, elderly homes and public places such as mosque and hospitals. Has a potential to be patented and commercialized.

## 4. CONCLUSION

AUTO-MAT Dryer is a solution in countering home injury caused by falling and slipping. This is an innovative product and has a potential to be patented and commercialized.

## ACKNOWLEDGEMENT

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