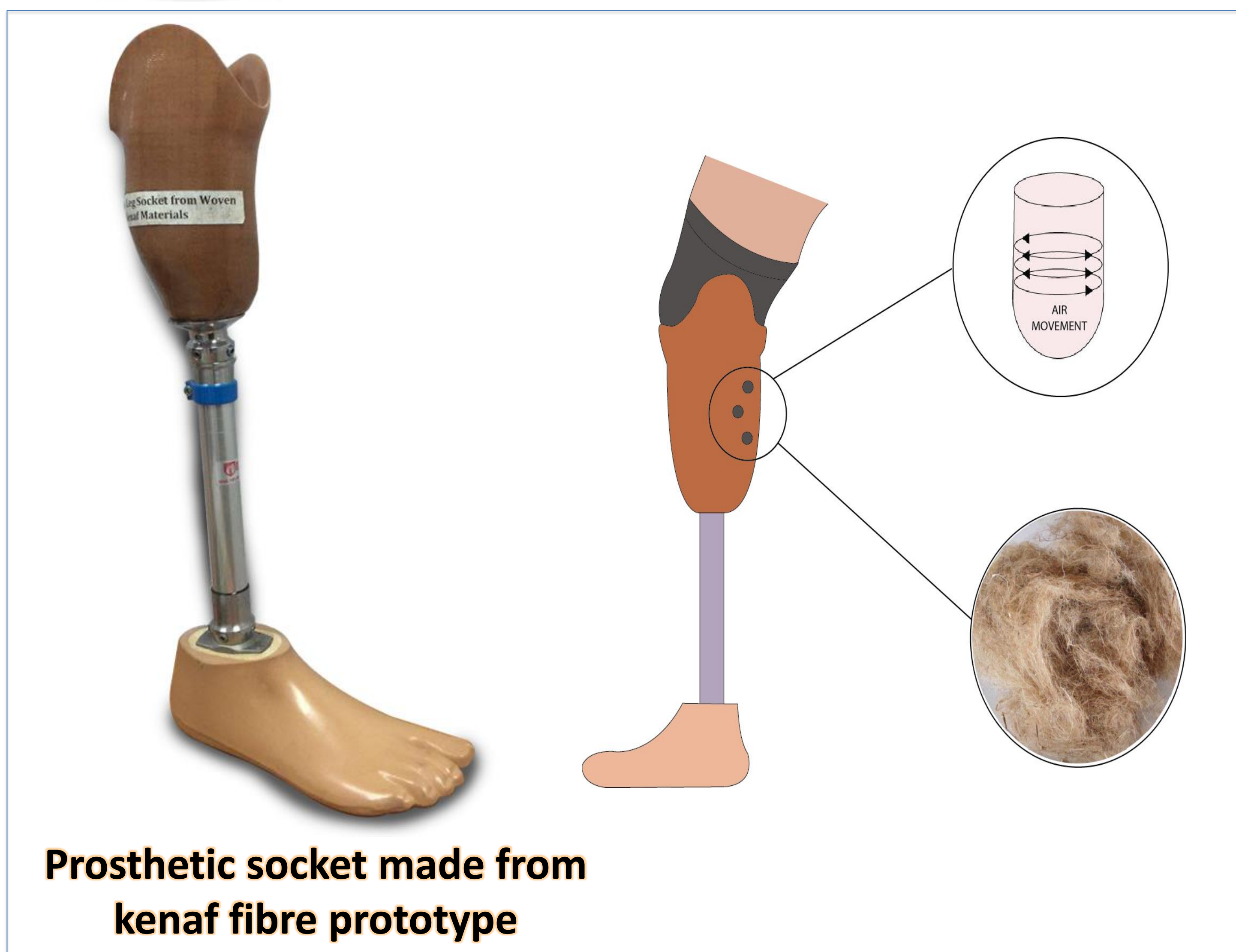


# THE AIRCIRC: DESIGN AND DEVELOPMENT OF A THERMAL MANAGEMENT PROTOTYPE DEVICE

WITH THE USE OF KENAF FIBRE AS AN ALTERNATIVE LAMINATED COMPOSITE FOR PRODUCTION OF PROSTHETIC LEG SOCKET

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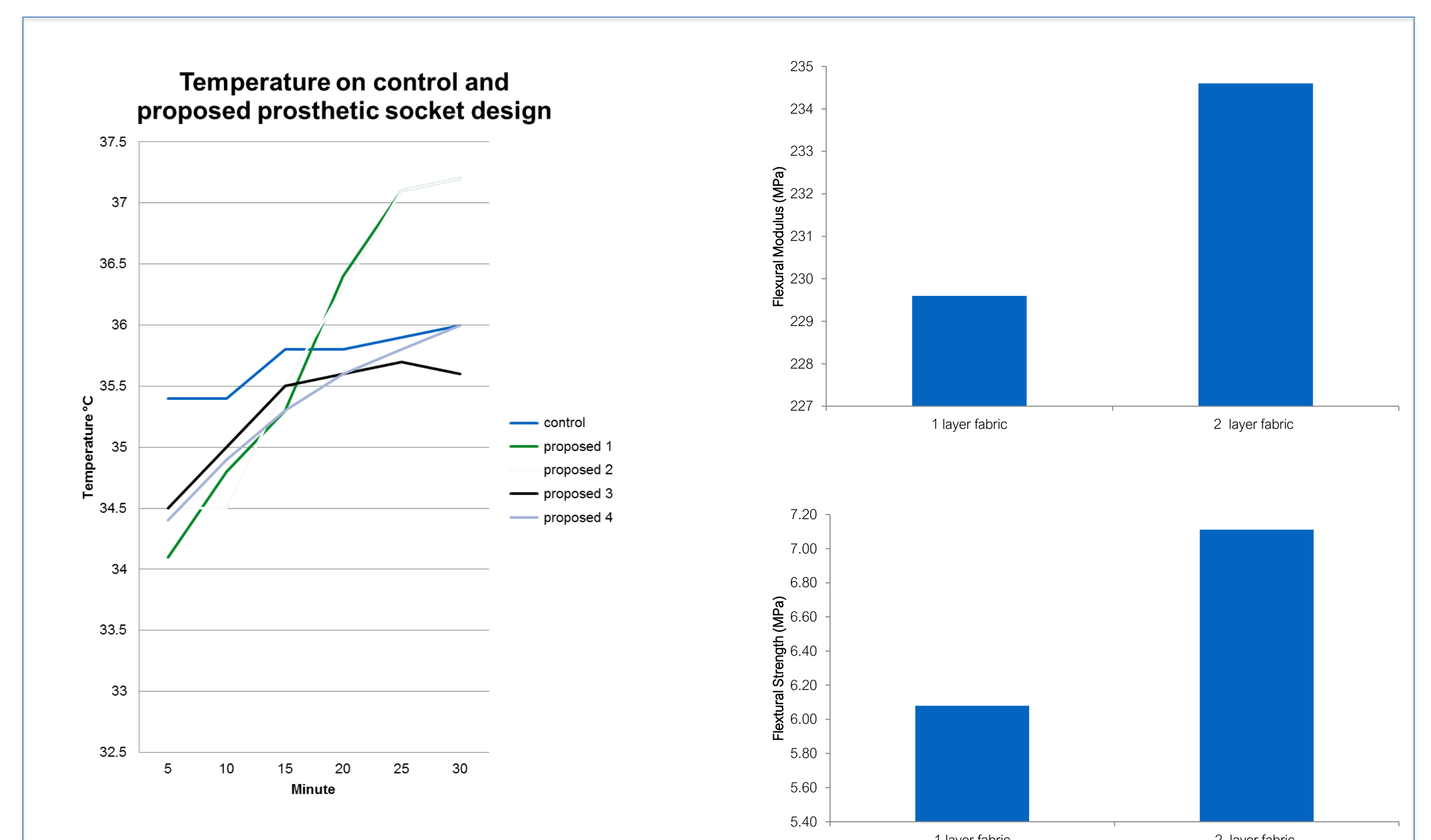
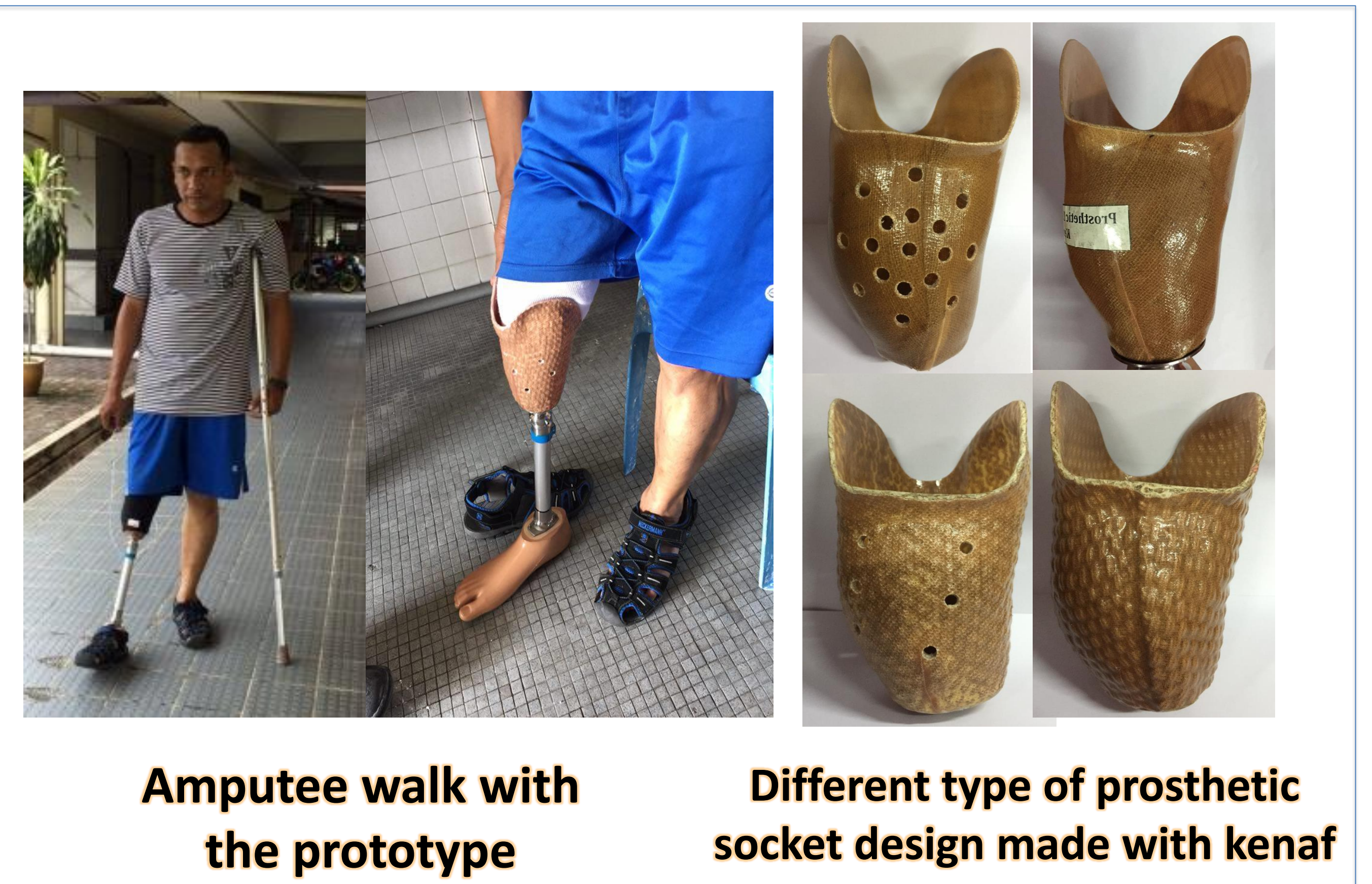
## TECHNOLOGY

Prosthesis is an artificial extension that replaces a missing body part such as an upper or lower body extremity. Therefore, as the part of artificial that joint with the body, it is must comfort to wear, easy to don and doff, cosmetically pleasing, light in weight, durable, well function and well maintenance. Poor thermal conditions can cause excess sweating and lead to a harmful environment for the user's skin, which can cause irritation and blisters.

AirCirc prosthetic socket has been designed by approach of medical device design process in providing the amputees to maintain the skin temperature inside the socket. This device has been designed not only to provide the amputees with ultimate breathable but also the style. The woven kenaf was used as material that provides good strength as compared to glass fibre and offer an eco-friendly product and aesthetic as well.

## INVENTION

- The small hole was made in prosthetic socket surface which function as air circulation
- The prosthetic leg socket made from laminated kenaf woven fabric composites offers good mechanical in flexural properties, allows users to wear and walk with the socket confidently.



## ADVANTAGES

- The holes was designed to allow the air ventilation in prosthesis socket
- The device provide the amputees with breathable and comfortable
- The use of natural fiber as alternative material offers aesthetic and sustainable product design

## MARKET POTENTIAL

The AirCirc prosthetic socket suitable for B2B market:

- Prosthetic manufacturer

### Consumer/End User

- Prosthetic wearer

### Industry

- Medical device industry
- Hospital
- SOCSSO
- Rehab centre



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