

## DEVELOPMENT OF INEXPENSIVE PROSTHETIC LEG SOCKET FROM WOVEN KENAF-GLASS FIBRE HYBRID COMPOSITES

### TECHNOLOGY DESCRIPTION

This technology is the prosthetic leg socket developed from woven kenaf-glass fiber hybrid composite as an alternative to the existing material.

### TECHNOLOGY FEATURES

The prosthetic limbs are usually made from acrylic resins supported by either glass or carbon fibre to provide structural strength. The prosthetic leg socket made from hybrid kenaf-glass fibre composite has high impact resistance which is twice the value as compared to the existing material. Thus, the socket part of the artificial limb can be often changed, replaced and adjusted according to the body changes to growth or change in body weight. The material is produced in eco-friendly environment.

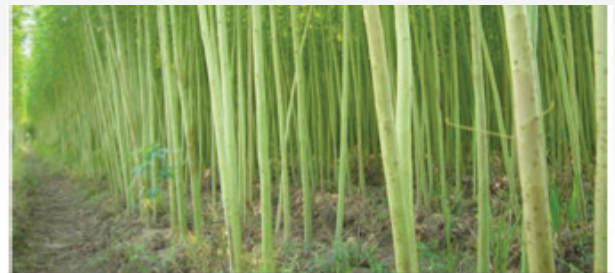
### ADVANTAGES

- Cost-effective
- Elevate the income level of kenaf farmers
- Green technology
- Can be easily changed, replaced and adjusted

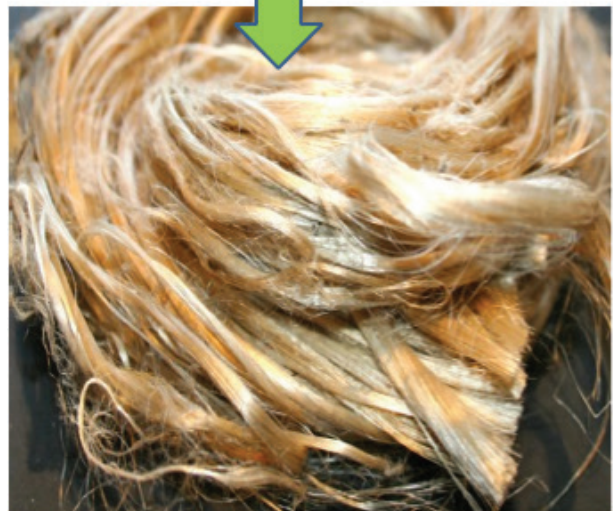
### INDUSTRY OVERVIEW

**Prospect: Producers of prosthetic/artificial legs, manufacturers of prosthetic components**

The prosthetics market is impacted by the occurrence of disease, war, and accidents. The overall prosthetics market in the United States earned revenues of \$1.45 billion in 2006 and estimates that number to reach \$1.85 billion by 2013. In Malaysia, about 40% of the 220 people who registered for the free prosthesis programme had their limbs amputated due to diabetes complications. No company has over 2% of the overall orthopedics and prosthetics market. 20% of the cost of a prosthetic leg is dependable on the socket excluding the workmanship of the prosthetic leg. There are more than 100 producers of artificial legs in the world. In Malaysia, Central Limb Centre (CLC) is one of the supplier of artificial limbs. CLC received between 50-60 artificial legs every month. The price of artificial legs range from RM400-RM7,000. A prosthesis would cost around RM3,000 to RM15,000, if most of the parts are manufactured locally.



Kenaf Tree



Kenaf Bast Fibre

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