



A bamboo prosthesis



> **Description** A transtibial prosthesis made of a bamboo and castor oil-based polyurethane resin composite has been developed. These materials from renewable sources make the device strong, lightweight and affordable.

> **Problem** The demand for affordable prostheses is growing apace, especially in poorer countries. It is a common practice to improvise prostheses made of wood or other accessible materials, endangering the user's health and sometimes further aggravating the patient's situation. According to Brazil's Ministry of Health, about a million people with disabilities in this country await prosthetic limbs.

> **Benefits** This invention consists of a process to manufacture transtibial prostheses made of a bamboo-based polymer composite. Protebam is highly sustainable: it is made of materials from renewable sources, its manufacturing cost is low, and hazardous waste emissions during its manufacture are minimal.