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## Patent Search

Invention Title	DEVELOPMENT OF PUNTURE RESISTANCE TYRE USING WASTE RUBBER AND REINFOCED FILLERS
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### Inventor

Name	Address	Country	N
P. Harsha kota vardhini devi	undergraduate student, Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh-534202	India	Ir
V.V.S. sarma	Assistant Professor, Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh-534202	India	Ir
Pathan Fayaz	Assistant Professor, Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh-534202	India	Ir
S.K.Alisha	Assistant Professor, Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh-534202	India	Ir
K.Saikumar	Assistant Professor, Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh-534202	India	Ir
P. Lakshman kumar	Undergraduate student, Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh-534202	India	Ir
V. Madhu	Undergraduate Student, Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh-534202	India	Ir
M.Gnaneswar	Undergraduate Student, Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh-534202	India	Ir
p.devika	Undergraduate Student, Vishnu Institute of Technology, Bhimavaram, Andhra Pradesh-534202	India	Ir

### Applicant

Name	Address	Country	Nation
vishnu institute of technology	Kovvada Rd, Vishnupur, Kovvada, Andhra Pradesh 534202	India	India

### Abstract:

The present invention relates to the development of a puncture-resistant tyre incorporating a protective under-tread barrier sheet made from waste and recycled materials. Conventional pneumatic tyres are prone to punctures caused by sharp objects, leading to air leakage, safety hazards, and reduced service life. Existing solutions such as run-flat tyres are expensive, complex, and less suitable for cost-sensitive markets. To overcome these limitations, the invention proposes a sustainable barrier positioned between the tread and carcass layers, prepared using reclaimed butyl rubber, crumb rubber, rice husk ash, and recycled polymer fibres. This novel composition enhances toughness, cut resistance, and air retention, while being compatible with standard tyre manufacturing processes. The approach reduces dependency on virgin materials, minimizes waste disposal, and lowers production costs. By improving durability, safety, and affordability, the invention provides an eco-friendly solution suitable for widespread adoption in two-wheeler and automobile tyres.

**Complete Specification**

Description: Conventional pneumatic tyres are highly prone to punctures, causing safety risks, inconvenience, and frequent repairs. Existing solutions like sealant-based flat tyres are costly, complex, and less effective in long-term use. To overcome these limitations, the present invention introduces a low-cost, sustainable under-tread barrier sheet made from reclaimed rubber, crumb rubber, rice husk ash, and recycled polymer fibres. This innovative approach improves puncture resistance while using waste materials, ensuring affordability, durability, and eco-friendliness for widespread adoption. , Claims: 1. A puncture-resistant tyre comprising an under-tread bar prepared from reclaimed rubber, crumb rubber, rice husk ash, and recycled polymer fibres.

2. The barrier sheet of claim 1 is positioned between the tread and carcass layers of the tyre to resist penetration of sharp objects.

3. The composition of claim 1 provides enhanced cut resistance, tear strength, and reduced air leakage during puncture events.

4. The tyre of claim 1 is compatible with conventional tyre manufacturing without significant modifications.

5. The invention of claim 1 promotes sustainability by utilizing industrial and post-consumer waste materials for value-added applications.

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