# Article information:

Thermal aging and automotive oil effects on the performance of electron beam irradiated styrene butadiene rubber/waste and microwave devulcanized rubber blends
<https://schlr.cnki.net/en/Detail/index/GARJ2021_4/SJIXF2F71C827D7BCF9A85EE3B63579D3A15>

# Article summary:

1. The study investigated the partial replacement of virgin styrene butadiene rubber (SBR) with waste tire rubber (WR) and microwave devulcanized rubber (DWR) at different ratios for tire production.

2. The prepared blends were exposed to an electron beam accelerator (EB) at 50 and 100 kGy, and their mechanical properties, thermal stability, and scanning electron microscopy were analyzed.

3. The unirradiated and irradiated SBR/DWR blends showed superior properties compared to SBR/WR after exposure to automotive oil and thermal aging at different temperatures.

# Article rating:

Appears moderately imbalanced: The article provides some useful information, but is missing several important points or pieces of evidence that would be required to present the discussed topics in a balanced and reliable way. You are encouraged to seek a more balanced perspective on the presented issues by exploring the provided research topics and looking at different information sources.

# Article analysis:

The article discusses the use of waste tire rubber and microwave devulcanized rubber as a partial replacement for virgin styrene butadiene rubber in tire production. The study examines the effects of electron beam irradiation on the properties of the prepared blends, including mechanical parameters, thermal stability, and scanning electron microscopy.

One potential bias in this article is that it focuses solely on the benefits of using waste tire rubber and microwave devulcanized rubber as replacements for virgin SBR. While there are certainly advantages to using recycled materials in manufacturing, there may also be drawbacks or limitations that are not fully explored in this study.

Another potential bias is that the article does not provide a thorough analysis of the risks associated with electron beam irradiation. While the study does examine the effects of thermal aging and automotive oil exposure on the prepared blends, it does not address any potential health or environmental risks associated with electron beam irradiation.

Additionally, some claims made in the article may be unsupported or incomplete. For example, while the study finds that unirradiated and irradiated SBR/DWR blends have superior properties than SBR/WR after thermal aging and oil immersion, it does not provide a detailed explanation for why this is the case.

Overall, while this article provides valuable insights into the use of recycled materials in tire production and their response to electron beam irradiation, it would benefit from a more balanced approach that considers both potential benefits and drawbacks. Additionally, further research is needed to fully understand any potential risks associated with electron beam irradiation.

# Topics for further research:

* Risks associated with electron beam irradiation in manufacturing
* Limitations of using waste tire rubber in tire production
* Environmental impact of using recycled materials in manufacturing
* Health risks associated with electron beam irradiation
* Comparison of properties between virgin SBR and recycled rubber blends
* Long-term durability of tires made with recycled materials

# Report location:

<https://www.fullpicture.app/item/c4c92e8109e1e6eef36921cefcd490c6>