# Article information:

Design of ester crosslinked rubber with high dynamic properties by increasing dynamic covalent bond density - Polymer Chemistry (RSC Publishing)  
<https://pubs.rsc.org/en/content/articlelanding/2022/py/d2py01165d>

# Article summary:

1. Dynamic covalent bonds (DCBs) can enable polymer networks to be recycled like thermoplastic materials.

2. Two rubber vitrimers (XSBRZA and XSBRZO) with a similar network structure but different densities of ester bonds were designed to evaluate the effect of DCBs on the dynamic properties of rubbers.

3. Increasing the density of DCBs, especially with small steric hindrance, accelerates their dynamic properties and improves recycling or healing performances of the rubbers.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

The article “Design of ester crosslinked rubber with high dynamic properties by increasing dynamic covalent bond density” is an informative and well-written piece that provides a comprehensive overview of how increasing the density of dynamic covalent bonds can improve the dynamic properties and recycling or healing performances of rubbers. The authors provide evidence for their claims through experiments conducted on two rubber vitrimers (XSBRZA and XSBRZO). The article is reliable in its presentation as it provides detailed information about the experiments conducted, as well as clear explanations for why increasing the density of DCBs is beneficial for improving rubber performance. Furthermore, it does not contain any promotional content or partiality towards any particular product or company.

However, there are some points that could have been explored further in order to make this article more comprehensive. For example, while the authors discuss how increasing the density of DCBs can improve rubber performance, they do not explore potential risks associated with this process such as increased cost or environmental impact due to increased production time and energy consumption. Additionally, while they mention that waste rubber is generally converted into reclaimed rubber through energy-intensive processing or directly burned and buried, they do not provide any evidence for this claim nor do they explore other possible methods for disposing waste rubber such as recycling or reusing it in other products.

In conclusion, this article is overall reliable in its presentation but could benefit from exploring some points further in order to make it more comprehensive.

# Topics for further research:

* Environmental impact of rubber production
* Recycling of rubber waste
* Reusing rubber waste in other products
* Cost of increasing dynamic covalent bond density
* Energy consumption of rubber production
* Disposal of rubber waste

# Report location:

<https://www.fullpicture.app/item/dce30471cc4cdd1a14be3cb55d4ead85>