# Article information:

Flame retardant polymeric nanocomposites through the combination of nanomaterials and conventional flame retardants - ScienceDirect  
<https://www.sciencedirect.com/science/article/abs/pii/S0079642520300517?via%3Dihub>

# Article summary:

1. This review focuses on the design, performance, applications and challenges of flame retardant polymeric nanocomposites.

2. Combining nanomaterials with different geometries and conventional flame retardants can enable tunable flame retardancy and mechanical performances for the resultant polymeric nanocomposites.

3. Four fundamental design principles are proposed for creating flame retardant polymeric nanocomposites, as well as potential applications of these advanced materials.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article is a comprehensive review of the state-of-the-art design and performance of flame retardant polymeric nanocomposites. It provides an overview of the combination effect between nanomaterials with variable dimensions and scales, and/or conventional phosphorus-, nitrogen- and/or silicon- containing flame retardants to create high-performance materials with tunable flame retardancy and mechanical properties. The article also discusses in detail the mechanisms behind these materials' fire resistance, as well as four fundamental design principles for creating them. Finally, potential applications are discussed.

The article is generally reliable in its reporting; it provides a thorough overview of the topic at hand without any obvious bias or unsupported claims. The authors provide evidence to support their claims throughout the text, citing relevant research studies where appropriate. Furthermore, they present both sides of an argument equally when discussing potential risks associated with these materials, noting that further research is needed to fully understand their safety implications before they can be widely used in industry or consumer products.

In terms of trustworthiness, there are no obvious issues with this article; it appears to be written by experts in the field who have conducted extensive research into this topic prior to writing it up for publication. There is no promotional content or partiality evident in the text; instead, it provides a balanced overview of both the benefits and risks associated with these materials.

# Topics for further research:

* Flame retardant polymeric nanocomposites applications
* Combination effect of nanomaterials and flame retardants
* Fire resistance mechanisms of flame retardant polymers
* Design principles for flame retardant polymers
* Safety implications of flame retardant polymers
* Environmental impact of flame retardant polymers

# Report location:

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