

Peer Review

Review of: "A Review on the Mechanical, Thermomechanical Properties and Crystallinity Aspects of 3D-Printed Nanocomposites Used for Fabricating Electronic/Structural Parts"

Md. Aminul Islam¹

1. Materials Science and Engineering, Tuskegee University, United States

The article provides a review of the mechanical, thermomechanical, and crystallinity properties of thermoplastic nanocomposites produced through 3D printers. The subject matter is topical and appropriate, as there is increasing concern about additive manufacturing and sustainable materials. The article is properly arranged and has distinct sections on material properties, functionalization, and implications for sustainability. Nevertheless, other content needs to be improved in order to make it more explicit, dense, and scientifically sound.

1. Although the article gathers vast information, it does not provide proper critique. In one instance, it should study and discuss how the mechanical properties of various fillers (e.g., graphene vs. CNT vs. TiN) increase with trends and be explained in terms of mechanisms.
2. The thermomechanical and crystallinity explanation is exhaustive, whereas the tribological characteristics and sustainability are comparatively shallow. These parts require greater elaboration and comparison.
3. Figures (e.g., internal architecture, dispersion process) are referenced but not adequately explained in the text. Captions should provide more context.
4. The review states that standard tests of filament tensile properties are not available but does not suggest possible solutions and frameworks. This may be a worthy contribution.

5. Add further research-oriented directions that are not related to functionalization, such as hybrid fillers, recycling policies, and performance in real-world environments.

Declarations

Potential competing interests: No potential competing interests to declare.