

Review of: "Nanomaterials: History, Production, Properties, Applications, and Toxicities"

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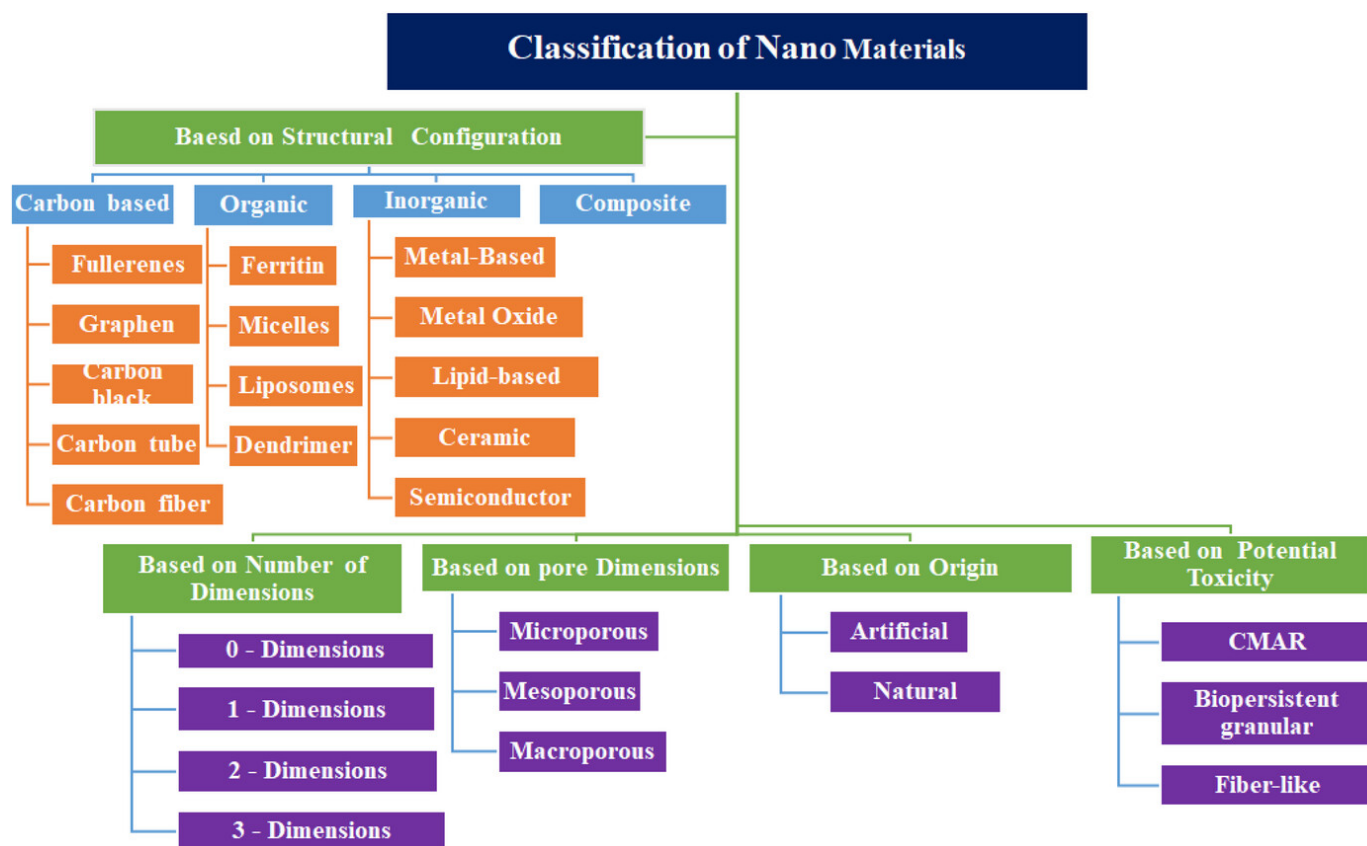
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Review articles generally present a critical summary of the existing literature to explain the current state of scientific knowledge on a particular topic. They should give key research findings, reference must-read articles, and state controversies and debates in that research area. Most importantly, they should point out gaps and suggest directions for future research.

Nanomaterials is a very vast and very well-researched topic. There has been an exponential growth in publications on nanomaterials since the late 1980s and early 1990s. So far, many review articles have been published covering topics like their properties, synthesis methods, characterization techniques, and applications. I am very afraid to say that this review article doesn't add any significant value to the currently available literature. It has been written very superficially without deep and detailed research. The critical comments are below

This review article has many flaws

1. In the title, "production" is not the suitable word. "Production" is the word generally used for large-scale synthesis. For research-based, lab-scale nanomaterials, the word "synthesis" should be used.
2. In the introduction section, 2/3 of the introduction is just describing the history of nanomaterials. The history of nanomaterials is very well known. Authors can describe the history in 1-2 paragraphs concisely and should more focus on what new and innovative findings this article is going to present. More importantly, the article should explain the purpose behind writing this article.
3. Table 1 provides incomplete information; there are many other groups working and established in this area. This table is totally irrelevant.
4. In the introduction, authors have described some organic compounds like Methyl parathion (MP), tannic acid (TA)... what's the context of this? Please explain.
5. There are many structural and physical, chemical properties of nanomaterials which differ from their bulk counterparts. Authors should make separate sections and discuss at least 3-4 properties with scientific reasons. They explained it very briefly in this review.
6. Second section NPs and NMs, what do you mean by nanomaterials are unintentional?
7. Classification of nanomaterials is based on many categories



Authors have hardly described only a few of them.

1. There is no description of any synthesis methods. According to me, this is a very important topic considering the nanomaterials.
2. The third section, "NMs and their applications," is also incomplete. There are so many new research developments happening in the application of nanomaterials. Please include the current applications in all these sections.
3. Please cite recent articles and review papers.

Overall, according to me, the authors should select a particular topic like synthesis, properties, characterization, or applications of nanomaterials and rewrite the review article in detail with current research updates. At this point, the article is not acceptable for publication.