

Review of: "Investigation of the Dielectric Behaviour of Propylene Glycol (100) Dispersed With Graphene Nano Powder to Determine the Optimal Conditions Using Response Surface Methodology"

Mariya Edeleva¹

¹ Ghent University

Potential competing interests: No potential competing interests to declare.

I reviewed the manuscript "Investigation of the Dielectric Behaviour of Propylene Glycol (100) Dispersed With Graphene Nano Powder to Determine the Optimal Conditions Using Response Surface Methodology" by Dr. Raviteja Surakasi, Janaki Pakalapati, Gangadhar Rao Manyala, which describes the attempt to optimize polyethylene glycol-based material properties via statistical methods.

Despite several interesting findings reported in the manuscript, I cannot recommend the publication of this manuscript.

1. The English language and style require sufficient correction. The text is hard to read, which hinders completely the meaning.
2. In the end of the introduction, the problem statement is absent.
3. "Materials and methods section". "The International Union of Pure and Applied Chemistry (IUPAC) describes propylene glycol as a colorless, odorless, tasteless, as well as viscous liquid. Propylene glycol is the name given to the chemical compound that is propane-1,2-diol. The compound can be represented by the chemical formula $\text{CH}_3\text{CH}(\text{OH})\text{CH}_2\text{OH}$. A diol is a type of compound that is distinguished from other types of alcohol by the presence of two separate alcoholic functional groups. It is possible to dissolve it in a variety of various solvents, including water, acetone, and chloroform, among others. Glycols, in their natural state, are not irritant to the skin and have a low volatility. Propylene glycol is used for a variety of purposes, such as in the manufacturing of polymers and in food and beverages. It is also used in a number of other applications" – I absolutely don't understand why the authors copied a part of a textbook. Materials and methods section describes the particular material that the authors used in their research: type, producer, purity. Everybody who does research in chemistry knows what a glycol is, but it doesn't help other researchers to reproduce the results of the current manuscript. In summary, this section must be rewritten.
4. Experimental setup description includes no data about the producer of the setup or its characteristics.
5. Experimental section contains no description of the PEG-dispersed graphene material preparation. Was it blended? Did the authors just add the powder to the liquid?
6. How was the dispersion stabilized?
7. How long did the measurement last? Did the authors take the sedimentation of the graphene into account?
8. Because of the ambiguous description of the experiment, it became evident only in the conclusion that the authors

studied rheological behavior. But initially, they planned to study electrical conductivity. All the results reported in the manuscript don't look credible to me because of the sloppy description.