# Article information:

Electro-purification of carbon nanotube networks without damaging the assembly structure and crystallinity - ScienceDirect
<https://www.sciencedirect.com/science/article/pii/S0169433218305245?via%3Dihub>

# Article summary:

1. Carbon nanotube networks can be synthesized by controlling the S-to-Fe atom ratio in the growth feedstock and introducing water as a weak oxidant.

2. An electro-oxidation-based purification method can efficiently remove Fe-containing nanoparticles without damaging either the assembly structure or the tube crystallinity.

3. The purified CNT network can exhibit advantages in mechanical and electrical applications.

# 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 “Electro-purification of carbon nanotube networks without damaging the assembly structure and crystallinity” is an informative and well-written piece that provides a detailed overview of the process of electro-purification for carbon nanotube networks. The article is written in a clear and concise manner, making it easy to understand for readers with varying levels of knowledge on the subject matter. The authors provide evidence to support their claims, such as TEM images, Raman spectra, thermogravimetric analysis (TGA), energy dispersive X-ray spectroscopy (EDS), and scanning electron microscopy (SEM).

The article does not appear to have any major biases or one-sided reporting, as it presents both sides of the argument equally. It also does not contain any unsupported claims or missing points of consideration; instead, it provides evidence to back up its claims and explores counterarguments where necessary. Furthermore, there is no promotional content present in the article, nor does it appear to be partial towards any particular viewpoint or opinion.

The article does note potential risks associated with electro-purification processes, such as structural damage to CNTs due to long treatment times or decreased conductivity due to oxidation reactions. However, it could have gone into more detail about these risks and how they can be minimized or avoided altogether. Additionally, while the authors do mention that liquid phase oxidation can introduce functional groups and defects preferentially on CNT side walls, they do not discuss how this could affect other properties of CNTs such as their mechanical strength or electrical conductivity.

In conclusion, this article is reliable and trustworthy overall; however, it could benefit from further discussion on potential risks associated with electro-purification processes and how they can be minimized or avoided altogether. Additionally, more information on how liquid phase oxidation affects other properties of CNTs would also be beneficial for readers who are looking for a more comprehensive understanding of this topic.

# Topics for further research:

* Carbon nanotube structural damage
* Carbon nanotube conductivity
* Liquid phase oxidation effects
* Functional group introduction
* Defects on CNT side walls
* Mechanical strength of CNTs

# Report location:

<https://www.fullpicture.app/item/c678ba2bc52316fbcf5efdce5274f7da>