# Article information:

Tuning carbon nanotube assembly for flexible, strong and conductive films - Nanoscale (RSC Publishing)
<https://pubs.rsc.org/en/content/articlelanding/2015/NR/C4NR06401A>

# Article summary:

1. Carbon nanotubes are ideal scaffolds for designing and architecting flexible graphite films with tunable mechanical, electrical and thermal properties.

2. An innovative post-processing treatment was employed on the CNT films using stretch-dip-drying in sequence to regulate the packing structure of CNTs, leading to strong films with tensile strength and Young's modulus as high as 3.2 GPa and 124 GPa, respectively.

3. Different types of solvents may result in the assembly of CNTs with different aggregation morphology and therefore different modulus, enabling these flexible graphite films to be both strong and conductive.

# 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 “Tuning Carbon Nanotube Assembly for Flexible, Strong and Conductive Films” is a well-written piece that provides an overview of the potential applications of carbon nanotubes (CNTs) in macroscopic materials. The article is written by experts in the field who have conducted extensive research on this topic, making it a reliable source of information. The authors provide detailed descriptions of their experimental methods and results, which are supported by relevant figures and tables. Furthermore, they discuss potential influencing factors such as tube structure (including wall number, aspect ratio, and tube collapse) and chemical treatments (e.g., acidification, UV irradiation, oxygen plasma modification).

However, there are some areas where the article could be improved upon. For example, while the authors discuss potential influencing factors such as tube structure and chemical treatments on CNT assembly behavior, they do not provide any evidence or data to support their claims about how these factors affect CNT assembly behavior. Additionally, while they discuss potential applications for CNTs in macroscopic materials such as transparent thin films or stretchable conductors, they do not explore any possible risks associated with these applications or discuss any counterarguments that could be made against them. Finally, while they provide detailed descriptions of their experimental methods and results regarding CNT film assembly behavior under different conditions (e.g., ethanol dipping vs acetone dipping), they do not provide any comparison between their results and those from other studies or sources to demonstrate how their findings compare to existing knowledge on this topic.

In conclusion, while this article provides a comprehensive overview of the potential applications of carbon nanotubes in macroscopic materials along with detailed descriptions of experimental methods used to study CNT film assembly behavior

# Topics for further research:

* Carbon nanotube applications
* Carbon nanotube risks
* Carbon nanotube assembly behavior
* Carbon nanotube film assembly comparison
* Carbon nanotube structure influence
* Carbon nanotube chemical treatments

# Report location:

<https://www.fullpicture.app/item/10e58cc21d14a837f6bffc6a2e7c8e89>