

[Home](#) > [Nanotechnology](#) > [Nanostructures](#) > [Chemistry](#) > [Nanofibers](#)

Chapter

Carbon Nanofiber for Microwave Absorption

February 2021
DOI:[10.1002/9781119769149.ch8](#)
In book: Carbon Nanofibers (pp.211-234)

Authors:



Dattatraya E. Kshirsagar
Birla College

- Request full-text
- Download citation
- Copy link
-

To read the full-text of this research, you can request a copy directly from the author.

[Citations \(2\)](#) [References \(35\)](#)

Abstract

Microwave absorbers are used in both civil and military applications on account of their ability to eliminate electromagnetic wave pollution and to reduce radar signatures. With the development of radar, there has been a growing and widespread interest in radar-absorbing material technology. The microwave absorbers are categorized into various forms such as resonant absorber, broadband absorber, magnetic absorber, dielectric absorber and metal absorber. Microwave absorption is caused in carbon nanofiber (CNF) due to loss during its transmission through material; at that time the electromagnetic waves interact with free charge carriers present inside the material. The volume-to-weight ratio of absorber material is very important in microwave-absorbing materials for lightweight and strong absorption properties that can be achieved using nano absorber. The stimulating result of CNF films has created interest in fabricating its polymer composites, which can be useful for various applications.

Discover the world's research

- 25+ million members
- 160+ million publication pages
- 2.3+ billion citations [Join for free](#)

Sponsored videos



No full-text available



To read the full-text of this research, you can request a copy directly from the author.

Request full-text PDF

Citations (2)

References (35)

... Exploring the relationship and interaction between substrate and CNTs greatly favors unraveling the underlying mechanism of their EM responding synergy. Moreover, considering that complying with gradual tapering of impedance (Kshirsagar, 2021) , whether for micro-/nano-materials or flexible devices, is the golden principle of designing high-performance microwave absorber, so it actually goes against the rule to place CNTs with ultra-high impedance at the surface of composite. As a result, large dense electrically conductive network composed of CNTs formed upon the surface in these models severely retards the propagation of incident microwave into the inner medium, since such a tight and seamless structural layout of CNTs network will inevitably induce the intense shielding effect, which results in their limited MA performance. ...

Arncitecture inspired structure engineering toward carbon nanotube hybrid for microwave absorption promotion

Article [Full-text available](#)

Sep 2022

Can Zhang · Yuning Shi · Xueai Li · Haiyan Wang

[View](#) [Show abstract](#)

Nickel-coated carbon fillers for polyurethane foam with improved microwave absorption performance: A comparative analysis

Article

Nov 2023

Gökçe Kurt · Mehmet Korkmaz ·  Alper Kasgoz

[View](#) [Show abstract](#)

Recommended publications Discover more about: [Nanofibers](#)

Article

Influence of MnO₂ decorated Fe nano cauliflowers on microwave absorption and impedance matching of...

September 2016 · Materials Research Express

 Pritom Jyoti Bora ·  Mayuri Porwal ·  K. J. Vinoy · [...] ·  Giridhar Madras

In this work, a promising, polyvinyl butryl (PVB)-MnO₂ decorated Fe composite was synthesised and microwave absorption properties were studied for the most important frequency ranges i.e., X-band (8.2-12.4 GHz) and Ku-band (12.4-18 GHz). The microwave absorption of Fe nano cauliflower structure can be enhanced by MnO₂ nanofiber coating. 10 wt% Fe-MnO₂ nano cauliflower loaded PVB composite films ... [\[Show full abstract\]](#)

[Read more](#)



Company

[About us](#)
[News](#)
[Careers](#)

Support

[Help Center](#)

Business solutions

[Advertising](#)
[Recruiting](#)