



SDI Review Form 1.6

Journal Name:	<u>British Journal of Applied Science & Technology</u>
Manuscript Number:	Ms_BJAST_18853
Title of the Manuscript:	Formation of Magnetic Semiconductor Carbon Nanotubes via Iron Incorporation
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

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SDI Review Form 1.6

PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
Compulsory REVISION comments	1. It has NOT been established throughout the work that the synthesized CNTs are semi-conducting nature. Therefore, the title of the paper "Formation of Magnetic semiconductor" is not apt. The authors only mention about the "possibility" of synthesis of magnetic semiconducting CNT-Fe composites in the study. This represents contradiction as there are no experimental evidences of the semi-conducting nature of the CNT yield. Calculation of Band-gap from the measured diameter of the tubes or Raman spectroscopic measurements (if available) MUST be reported to exemplify the semi-conducting nature of the nanotubes. 2. The study also lacks experimental evidence to ascertain any quantitative values on the magnetic properties of the CNT/Fe composites. The authors need to insert Magnetization curves to substantiate the claim/title of the paper. 3. The introduction section of the papers lacks the "uniqueness" of the work done. How is the pursued arc-discharge method better/beneficial as opposed to the existing synthesis techniques of CNT/Fe composites	- Actually we have not tested experiments on behaviour of magnetization and hysteresis curves. However, we are suggesting that there is possibility of magnetic semiconductors in similar way to magnetic ion from magnetic elements doped II-VI and III-V materials. This work is still open for further experimental investigation. - The benefit of this work is that it is very simple as far as we used the deionized water environment and locally devised instrument. We explained observed experimental and measured results including spherical phenomenon. - We have revised the figures also to make them more readable. - We have obtained more spherical phenomenon with nickel doping also. - The formation of magnetic semiconductors is for the purpose of data processing because of the semiconductor part and storage due o the presence of magnetic ions. This miniaturizes size where ata processes and storage facilities are



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	(please refer to my notes in the paper for further details) 4. Where is Fig 7a and 7b as mentioned in the paper? 5. The authors have indicated about the presence of spherical C- structure in the CNT yield and referred it as a “new” phenomenon. Is this phenomenon reproducible? If yes, what can be the possible reasoning of this phenomenon? Has any further spectroscopic investigation (e.g. RS) been performed on this spherical structure to investigate its properties? 6. Please mention in details about the target applications of this work. The applications of the composites “for the purpose of data storage beside optical and transport facilities” are just briefly/vaguely mentioned in the paper. This needs enough elaboration.	in the same device.
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<u>Minor</u> REVISION comments	1. The applied voltage during the arc-discharge experiment should lead to “electrolysis” of the de-ionized water resulting in profuse evolution of H₂/O₂ gas bubbles in the medium. a. Has this phenomenon been noticed during arcing? b. Did the authors consider the use of “alcohol” medium (e.g. IPA) to minimize agitation in the system? c. Did the authors investigate about the possible influence of the experimental parameters (e.g. inter-electrode distance, voltage ranges etc.) on the yield and quality of the nanotubes? 2. Please mention if the synthesized nanotubes are single-walled or Multi-walled in nature and an approximate % if both are obtained? 3. Please elaborate/explain about “the temperature limits “in Section 4. Conclusions. It is difficult to comprehend the meaning of the limits here.	We have done corrections following comments.
<u>Optional/General</u> comments	The communication presents synthesis and spectroscopic/imaging characterization of CNT-Fe nano-composites. Extensive characterization from XRD spectrum and supporting TEM/SEM images depicted in the work reveal interesting material yield from the work. The authors are requested to improve on general representation of the paper (images, labelling, sentence construction) to the benefit of the readers. The major and minor revision, as pointed above, should substantiate the over-all quality of this technical study.	