

Interactive comment on “Carbon nanomaterials in clean and contaminated soils: environmental implications and applications” by M. J. Riding et al.

Anonymous Referee #2

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This review is relevant as it joins information about the fate and behaviour of one main types of nanomaterials, that is being produced and applied in large quantities. However the paper needs some structural reformulations that are highlighted in comments made in the PDF of the manuscript. Hence, I think that it could be accepted after major revisions.

The role of some soil properties in CNMs fate and behaviour was forgotten. For example the role of clay particles.

The toxicity section is very poor developed and only toxicity to soil microbial community

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was mentioned. Invertebrates and plants were not mentioned. If no information exists for this group of organisms, (but I know that some is available), at least this needs to be mentioned. This section should appear after the description of the effects of the biological activity on CNMs in soils. It remained unclear, if these CNMs can be degraded or not by soil microorganisms. Or at least the role of soil microorganisms in functional groups and in the subsequent stability of these CNMs. If this information does not exist, this should be mentioned in the manuscript. It would also be mentioned, or at least reinforced that studies available aimed to perceive the role of physical and chemical properties on the fate of CNMs in the soil, but any attempt was made to perceive how soil physical and chemical properties together with the biological activity determine the modification of such CNMs and its fate. This as to be made in more real environmental scenarios, and at least the authors should call the attention for this necessity.

Further through all the manuscript the most relevant results of several studies are described without any criticises, and some important aspects of the experimental design of the studies were not added. I have exemplified this also in some comments.

The pathways for the entrance of CNMs in the soils need to be clearly mentioned in the manuscript.

Please also note the supplement to this comment:
<http://www.soil-discuss.net/1/C82/2014/soild-1-C82-2014-supplement.pdf>

Interactive comment on SOIL Discuss., 1, 151, 2014.

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