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Ecotoxicological effects of multi walled carbon nanotubes

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Other authors:

C. Piller, E. Gunter-Hoch, F. Ben-Ami, N. Vlachou, D. Perivoliotis, A.F. Trompeta, A. Skarmoutsou, Y. Benayahu, C.A. Charitidis

Now-a-days the need for the manufacturing of engineered nanomaterials increases due to their performance, efficiency and decrease of total weigh in the applications they are used. However, not always large scale manufacturers or even small scale pilot lines established in regional laboratories follow regulations/limitations for the disposal of engineered nanomaterials waste. Consequently, there is a great possibility of polluting water that will eventually result in the effect on ecosystems micro and macro-organisms. In this study we will present the effect of carbon nanotubes (CNTs), one of the most widely studied engineered- nanomaterial on the water fleas, unicellular algae some macrofoulers. CNTs were synthesized via a thermal chemical deposition process, characterized and functionalized with different end groups to render them less toxic. CNTs length was measured $\sim 5 \mu\text{m}$ and diameter ranged between 60-100 nm. Functionalization with different surfactants was conducted in order to render CNTs dispersal in polar and non-polar solvents and their effect on living organisms was assessed so as to estimate the potential effect in ecotoxicity and environment.

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Primary author: BENAYAHU, Yehuda (Tel Aviv University)

Presenter: BENAYAHU, Yehuda (Tel Aviv University)

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