

Detection and Removal of HiPco® Single Walled Nanotubes from Activated Sludge And Aqueous Systems

David Murphy, Athlone Institute of Technology, Ireland

Abstract. Nanotechnology is based on the production and manipulation of objects at the nano-scale, one billionth of a metre. It is considered by many to be the next milestone in scientific application. It has the potential to revolutionise several sectors and industries with innovations in medicine, diagnostics, agriculture, and engineering, all at the leading edge of a technology still in its infancy. (T. Andrew Taton, 2000) (Yi Cui, 2001) Today it has permeated these sectors and become a fixture in many everyday products. Their versatility in many applications is not in question, but our understanding of how they interact with living cells, both prokaryotic and eukaryotic is greatly limited. When the products which contain these nanoparticles are disposed of, the nanoparticles invariably find their way into our waste water treatment facilities. It is the purpose of this research project to determine the potential toxicological effect these discarded nanoparticles have on the microbial community present in the treatment centre and on organisms downstream of the facility with the ultimate goal of designing a filter capable of extracting them from the facility.