

Drug Residues Disposal from Wastewater Using Carbon Nanomaterials

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Abstract : In the context of the accelerated expansion of urban agglomerations and the exponential development of industry, a huge amount of water is used, and a crisis of drinking water may occur any time. Classic wastewater treatment removes most pollutants but, for some chemical residues, special methods are needed. Carbon nanotubes and other carbon materials might be used in many cases [1-2], especially for heavy metals removal but also on pharmaceutical products such as paracetamol [3]. Our research has confirmed the better efficiency of nanotubes compared to graphene on paracetamol removal from water, but even better results were obtained on single-walled nanotubes (SWCNTs) and graphene nanoplatelets. This can be due to their better dispersion in water which leads to an increased contact surface, so we propose a filtration system of membranes and carbon materials that can be used for paracetamol removal from wastewater but also for other drugs that affect the aquatic life as well as terrestrial animals and people who use this contaminated water.

Keywords : applied physics, wastewater, nanomaterials, environmental science

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