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| Title: | Algal Nanotechnology for Wastewater Treatment |
| Authors: | Adak, Mrinal Kanti (/jspui/browse?type=author&value=Adak%2C+Mrinal+Kanti)<br>Das, Ajit (/jspui/browse?type=author&value=Das%2C+Ajit) |
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| Abstract: | Population overgrowth and rapid industrialization continuously lead to a serious concern to the safe drinking water and ecosystem across the globe. In this context, microalgae culture may be considered an alternative approach to resolve this issue; however, long period of time, laborious work, and large land area employing nanotechnology may be of high demand. Nontoxic stable metal nanoparticle formation through intracellular or extracellular pathway by microalgae shows affectivity for wastewater treatment. Gold and silver nanoparticles are largely investigated by the researchers for their stability, easy formation, and active catalytic response. Most of the synthesized nanoparticles show photocatalytic activity for pollutant degradation. Nanotechnology is also applied for the separation of algal cells from water phase for continuous supply of algal biomass. Magnetic seeds, nano-membranes, nanofibers, nano-chitosan, and nano-filtration play an important role for the separation and reuse of algal biomass. Microalgae-based nanotechnology gives a green, environmentally safe process for the wastewater treatment with the reduction of the toxicity of metal without formation of any hazardous compound. Further and large-scale researches are still necessary to measure its effectiveness on practical purpose. |
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