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(57) Abstract :

The inadequate drinking water treatment has been the root cause of most waterborne diseases a major cause that claims the lives of many infants of our country. Pollutants produced by anthropogenic activity are easily carried by runoff and exist in significant concentrations, making them unsuitable for human and livestock consumption. These reservoirs are also the main source of drinking water for most settlements. The formation of United Nation Sustainable Development Goals (SDG) had highlighted this problem, as UNSDGs 6 deals with clean water and sanitation. This has promoted many purification systems over a period, comprising, however, most of them are incapable either economically or technically to meet the need. Hence, the present innovation aimed to achieve the stated hypotheses in the concept of sustainability. The idea of developing Solar/LED based water purification system was proposed. Hence, a solar water purifier consisting of a photocatalytic reactor as a primary purifier that eliminates unwanted dissolved organic species along with microbial species. This was supplemented with 5-micron poly propylene commercial filtration unit for removing suspended matters and a carbon filter (adsorption) encompassing activated carbon obtain from bamboo for removing unwanted inorganic matters or any if unremoved organic matters from the primary unit.

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