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(54) Title: SYSTEM FOR REDUCING ALGAE BLOOM AND MICROBIAL GROWTH IN AQUEOUS SYSTEMS AND A  
METHOD THEREFOR

(57) Abstract: The present invention relates to a system for reducing algae bloom and microbial growth in aqueous systems and a method therefor. The system according to the invention comprises at least one influent filtration unit comprising an ingress and an egress; - at least one adsorption vessel which is operatively coupled with the at least one influent filtration unit, the adsorption vessel comprising an ingress, an egress and a phosphate adsorption element, wherein the phosphate adsorption element is configured for adsorption of phosphates and removing the adsorbed phosphates from a phosphate rich containing influent water flow; and - a regeneration system which is operatively coupled with the at least one adsorption vessel and, comprises an ingress and an egress, wherein the regeneration system is configured for holding a regeneration solution, and is configured to regenerate the at least one adsorption vessel, wherein the regeneration system further comprises: - a regeneration filtration unit, which is operatively coupled with the regeneration system configured to separate the phosphate and regeneration solution; and - a recycling loop configured to recycle the regeneration solution.

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