World Academy of Science, Engineering and Technology
International Journal of Chemical and Materials Engineering
Vol:10, No:02, 2016

Domestic Wastewater Treatment by Microalgae – Removal of Nitrogen

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Abstract : Domestic wastewater contains high concentrations of nitrogen, which can affect public health and cause harmful ecological impacts. The potential of microalgae as a source of renewable energy based on wastewater has received increasing interest worldwide in recent decades. The microalgae cultivation in wastewater has two advantages: wastewater treatment and algal biomass production. Our work aimed to remove nitrogen from municipal wastewater. Wastewater samples were taken from the wastewater treatment station located in Ouargla and used as a medium for the cultivation of chlorella microalgae strains inside a photobioreactor. Analysis of different parameters was done every 2 days along the period of the cultivation (10 days). The average removal efficiencies of nitrogen were maintained at 95%. Our results show the potential of integrating nutrient removal from wastewater by microalgae as a secondary wastewater treatment processes.

Keywords : biomass, microalgae, treatment, wastewater
Conference Title : ICCET 2016 : International Conference on Chemical Engineering and Technology
Conference Location : Paris, France
Conference Dates : February 22-23, 2016