

Model Development and Light Effect on a Rotating Algal Biofilm [★]

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Abstract: The idea relying on attached culture for microalgae production has attracted many interest these past years due to their energy efficiency and low water usage. Microalgae can grow and attach to the surface of an appropriate material to form a biofilm. In this paper, a rotating algal biofilm (RAB) model is introduced. It is based on the Han model. How light affects the growth and productivity of microalgae and thus the formed biofilm will be discussed through model development, more importantly, it will be seen that taking into consideration light dilution factor can increase productivity. The benefit of the system is assessed when the conveyor velocity is fast enough. Simulation show an optimal folding of the conveyor.

Keywords: microalgae, rotating algal biofilm, biomass harvest

[★] Ademe Phyto'Recolt project and IPL algae in silico.

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