Bioreactor device and methods

Abstract

An apparatus is provided for the production of biomass or a bioproduct, the apparatus comprising: at least one elongate bioreactor, the bioreactor comprised of at least one outer membrane layer that defines a substantially tubular compartment that is capable of being filled with a liquid or gel, wherein the membrane layer is comprised of a material that is permeable to gas transfer across the membrane layer. A chamber is provided comprising walls that define and enclose a gaseous atmosphere within. At least a part of the bioreactor is located inside the chamber. A control system controls the composition of the atmosphere within the chamber and gas transfer occurs across the membrane layer of the bioreactor between the tubular compartment and the atmosphere comprised within the chamber. Methods of using the apparatus in order to manufacture biomass are also provided.

Figure 4