

Abstract

The embodiments of the present application relate to a photosynthetic bioreactor system in the field of bioreactors. The system includes at least one bioreactor with a transparent cultivation region for photosynthetic microorganisms; a conditioning device for producing ideal liquid culture medium; a collection device for recovering organic matter from the bioreactor; and a nano-bubble generating device for converting carbon dioxide-containing gas into minute bubbles for liquid introduction. The bioreactor includes a culture medium inlet, a culture medium outlet, and a gas inlet communicating with the transparent cultivation region. The conditioning device connects to each bioreactor's culture medium inlet, the collection device connects to each culture medium outlet, and the nano-bubble generating device connects to each air inlet. The transparent cultivation region has a thickness less than a preset dimension to enable light penetration.

[FIG. 1]