

Abstract

The hydrogen can be produced in a biological production process by dark and photo-fermentation of organic substrates. Under anaerobic conditions, hydrogen is produced during conversion of organic substrate into organic acids using fermentative bacteria and during conversion of organic acids into H₂ and CO₂ using photo-fermentative bacteria. This bioprocess has been studied with a number of microorganisms, it is a very complex process and influenced by many factors. In order dark and photo-fermentation process is an important approach for biohydrogen production. In this study, different factors have been examined to enhance biohydrogen production by these organisms, either as a combined or sequential using dark and photo-fermentation process. The effect of each factor on biohydrogen production efficiency is reported. A comparison of hydrogen production efficiency between dark-fermentation, photo-fermentation and two stage processes was investigated