

ABSTRACT

The present invention relates to a continuous direct synthesis and recovery method for hydrogen peroxide. The method is characterized by using a reaction tube having the inner wall of a hollow tube coated with a noble-metal thin film and synthesizing hydrogen peroxide directly and continuously from hydrogen and oxygen, then continuously recovering, as hydrogen peroxide water, synthesized hydrogen peroxide. The device includes: a reaction tube having an inner wall of a hollow tube coated with a noble-metal thin film; means for supplying a gas phase of hydrogen and oxygen or air of a starting material gas into the reaction tube; means for supplying an aqueous phase of a reaction catalyst; and means for continuously recovering synthesized hydrogen peroxide, immediately after synthesized inside the reaction tube in use of water or an acid aqueous solution. The present invention makes it possible to manufacture and provide ultrahigh-purity hydrogen peroxide for semiconductor applications and organic matter-free hydrogen peroxide suitable as a microanalytical reagent