

ABSTRACT :

FIXED BED MIXED GAS/LIQUID PHASE REACTOR AND MIXED GAS/LIQUID PHASE REACTION PROCESS USING THE SAME

The present invention provides a fixed bed reactor for carrying out a mixed gas/liquid phase reaction, wherein the reactor has a piping structure composed of microchannels, the cross-sectional area of the fixed bed is 0.0001 cm^2 to 0.008 cm^2 and a single or parallelly arranged two or more fixed beds, and the reactor has, in addition to the fixed beds, a gas phase distribution portion, a portion for introducing the gas phase to the fixed bed, a liquid phase distribution portion, a portion for introducing the liquid phase to the fixed bed, a packing material introduction portion and a fluid merging portion, a gas/liquid mixed phase reaction process for carrying out a gas/liquid mixed phase reaction using the fixed bed reactor described above, and further a process for producing hydrogen peroxide in which the reaction is started and stopped in a reducing atmosphere, and the present invention further provides a novel fixed bed gas/liquid mixed phase reactor which makes it possible to carry out gas/liquid mixed phase reactions stably and under steady state conditions by using microchannels.

Figure 1.