

ABSTRACT

A method utilizing an industrial flue gas for removing metal ions from rice hulls. A gas dispersion apparatus used for discharging the industrial flue gas is arranged at the bottom of a water-filled reaction tank. The rice hulls are bagged and thrown into the water-filled reaction tank. The bagged rice hulls are pressed into water. Then, the industrial flue gas is injected into the tank by the gas dispersion apparatus. The water pressure in the water-filled reaction tank is utilized to increase the water solubility of carbon dioxide in the industrial flue gas. A carbonate solution produced reacts with the metal ions in the rice hulls to produce a precipitate. When the reaction is completed, the rice hulls are rinsed then rinsed and pressed with salt water to remove the metal ions that are attached onto the rice hulls. The method introduces into water the industrial flue gas to dissolve carbon dioxide contained therein into water to produce carbonic acid, and utilizes the carbonic acid to react with the rice hulls immersed in water, thus achieving the goal of removing the metal ions from the rice hulls. The method has the circular economy features of low pollution, low energy consumption, and high efficiency.