

Carbon and metal oxide composites for heavy metal removal from aqueous solution

임수익, 박지용, 이기봉[†]
고려대학교 화공생명공학과
(kibonglee@korea.ac.kr[†])

Due to increasing industrial activities such as mining, plating, and refinery, water contamination with heavy metals has been received more attention. With exceeding the acceptable level of heavy metals in water, heavy metals affect human health. Heavy metals have to be removed from water before being discharged into the environment. Conventionally, heavy metals are mainly removed by precipitation with hydroxide ion, but this method requires large amounts of hydroxide compounds and also forms sludge after the reaction. Therefore, the development of alternative methods is required. Recently, adsorption has been known to be one of alternative removal methods because of its simplicity and low cost. Among adsorbents, carbon-based material is promising owing to its stability and easy separation from water after use. However, carbon-based material has limits in heavy metal removal capacity which is caused by low affinity to heavy metals. In order to overcome the limitation of carbon-based materials, we synthesized carbon-metal oxide composites to improve adsorption capacity.