Crown ether- functionalized SBA-15 Prepared via Click Chemistry for Metal Ion Sequestration

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One of the factors affecting the efficiency of crown ether (CE)-based metal ion adsorbents is CE loading. Meanwhile, because CEs are expensive, their application in adsorbent systems could be justified only if sustained optimal performance after repeated use can be demonstrated. One approach to deal with these requirements is to covalently immobilize CEs onto mechanically and chemically robust materials with high concentration of surface functionalities for attachment. In this study, CE immobilization onto azido-functionalized SBA-15 using click chemistry was performed. Preparation strategies and results of material characterization (XRD, TGA, BET, FTIR, SEM-EDX, TEM and elemental analysis) are hereby reported. This research was supported by the National Research Foundation of Korea (NRF) funded by the Ministry of Science and ICT (No. 2018R1D1A1B07047503 and No. 2017R1A2B2002109) and by the Ministry of Education (No. 2009-0093816).