Transition Metal doped $NaAlH_4$ for Hydrogen Storage

나이크 메라지우, 남기석*, 황상운, 렌주자차리아, 사미울라
전북대학교 공과대학
(nahmks@chonbuk.ac.kr*)

We perform the experimental investigation of sodium alanate (NaAlH4) for hydrogen storage by doping with different transition metal compounds. The commercial NaAlH4 was recrystallized and purified from different organic solvents and followed by the addition of 2 mole percent of titanium and vanadium chlorides as dopants. The kinetics and thermodynamic stability have been investigated by performing the thermogravimetric analysis (TGA). It has been observed that dopants enhances the hydrogen desorption kinetics of NaAlH4. Also the materials were characterized by FT-IR, Raman, X-Ray diffraction and FESEM techniques. In short, this study presents well comparative investigation of dopant effects on the hydrogen storage properties of sodium alanate.