Hydrogen generation using $NaBH_4$ - solid acid - alcohol metrix for fuel cell application

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This research presents and discusses work on hydrogen generation from sodium borohydride ($NaBH_4$) solid that could be applied to fuel cell system which requires a pure hydrogen as an energy source. Briefly, a system was designed into 3-channel flow reactor equipped with micropump, and solid acid as a catalyst was incorperated with sodium borohydride which then pressed to make square-type pellets. To increase the reactivity, alcohol-water mixture was fed into reactor at various flow rates. At given system, the conversion yields for hydrogen generation reached to high value (~94 %) and this study also showed the slow and controlled release of hydrogen which could be an attractable point for micro-portable fuel cell