

A study on HI decomposition using the Pt catalyst loaded on modified support

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In the SI(sulfur iodine) process for hydrogen production, it is efficient for HI(hydrogen iodide) decomposition reaction to operate under 400 ~ 500 °C. Thermodynamically, HI decomposition reaction has 20 ~ 22 % equilibrium conversion at 450 °C. However, in this temperature, HI decomposition reaction is too slow. It needs catalysts to get rapid reaction rate. Catalytic reaction for HI decomposition has been reported by prior other researches and we researched Pt catalyst based on their reports. In this study, we used Pt catalyst loaded on support whose surface is modified by zirconia. Also, their characteristics and catalytic activity were researched. Characteristics analysis such as XRD, CO gas chemisorption and BET was carried out. In addition, HI decomposition apparatus was used to evaluate catalysts activity.