

A study on HI decomposition reaction using Ta catalyst

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In the SI process, hydrogen iodide decomposition have been performed using various catalysts for producing hydrogen. Pt has shown great activity in hydrogen iodide decomposition in prior researchers. In economical aspect, the research regarding non-noble metal would be required. Ta is one of the non-noble metal and has strong acid resistantce. In this paper, by differently loading with active metal and by changing a variety of supports such as ZrO₂, Al₂O₃, SiO₂, HI decomposition was explored. In addition, HI decomposition activity and phisical properties of tantalum catalysts was compared to other transition metal, like Ni, Co, and Fe, HI decomposition reaction was performed under the conditions of 723 K, 1 atm. Analysis methods for instance, BET, XRD, CO gas chemisorption, and SEM were used for the characteristic of the catalysts.