

## Hydrogen production by catalytic decomposition of waste lubricating oil over various carbon black catalysts

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Carbon black was found as an effective catalyst for various hydrocarbons decomposition into hydrogen and solid carbon and to exhibit stable catalytic behavior despite of carbon deposition. In this work, catalytic characteristics of various carbon blacks for waste lubricating oil decomposition, were investigated and compared with those of activated carbon. The reaction was carried out under atmosphere pressure at 823 ~ 1,223 K. The catalytic activity of carbon materials for waste lubricating oil decomposition is determined by hydrogen yield. Change of the surface morphology after carbon deposition was observed by TEM. The specific surface area of sample was calculated applying the BET method to the N<sub>2</sub> adsorption isotherms using Micrometrics ASAP 2020 apparatus.