CARBON SUPPORTED METAL CATALYST FROM SEAWEED-DERIVED BIO-CHAR PREPARATION AND CHARACTERIZATION VIA CHEMISORPTION

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Over the past two decades, an increase of nutrient levels in marine coastal waters has resulted in a surplus of primary production, which is defined by either massive phytoplankton blooms or opportunistic macroalgae. Seaweeds that become stranded can cause hypoxia, discharge harmful hydrogen sulfide into the water, cause animal mortality, and decrease biodiversity in marine and estuarine ecosystems. Seaweed is already harvested for food and hydrocolloid production; however it could also be used as a feedstock for the production of biochar – a carbon-rich "biological charcoal". It is possible to get biochar with 1.15–1227 m^2/g specific surface area measured by BET method, which is in line with many traditional catalysts. In this work, researchers aim to propose a method of producing iron and copper metal supported catalysts from seaweed found in the Baltic Sea processed via pyrolysis. The catalysts were characterized by temperature-programmed desorption (TPD), temperature-programmed reduction (TPR), H_2 and CO chemisorption.