

## 学 位 論 文 の 要 旨

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学位論文題目: Studies on Analysis and Utilization of Ash in Vietnamese Coals			
(英訳又は和訳 ベトナム石炭中の灰の分析と利用に関する研究)			
<p>From conclusion of Chapter I to Chapter IV, the authors obtained these conclusions:</p> <p>1. The behavior of ash components in Argonne Premium Coal as a reference coal was analyzed by XRD and TEM. With the case of Upper Freeport bituminous calcination up to 1200°C under the air atmosphere, Anhydrite was observed. In contrast, with the case of Wyodak - Anderson coal, cubic like crystalline substances were observed in TEM image and were assumed to be crystalline of Gehlenite by referring to its XRD data. These observations should be due to the difference in CaO content.</p> <p>2. The behavior of ash components in Vietnamese QN, TN, LS coals was analyzed by XRD and TEM. Kaolinite in SiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub>-rich QN and LS coals was transformed to mullite through Illite after heat treatment under the air atmosphere. Calcite in CaO-rich TN coal is considered to change to anhydrite and lime after heat treatment under the air atmosphere.</p> <p>3. The mesopore surface area for QNCA-catalyst increased probably because the transition metal oxides Fe<sub>2</sub>O<sub>3</sub> and TiO<sub>2</sub> among coal ash components would remain in QNCA catalysts. The activity and the product selectivity were influenced by the crystallinity, SiO<sub>2</sub>/Al<sub>2</sub>O<sub>3</sub>, and the presence of alkali and alkaline earth metals in coal ash components. Gasoline fraction increased due to the presence of ash components in QNCA catalysts.</p> <p>Mesopores also increased in RQNCA catalysts because of the presence of remaining CaO, MgO and K<sub>2</sub>O as well as Fe<sub>2</sub>O<sub>3</sub> and TiO<sub>2</sub>. RQNCA catalysts exhibited lower activity and narrow product distribution probably because RQNCA catalysts had larger amounts of CaO, MgO and K<sub>2</sub>O, which would weaken the acidity of active acid sites, than QNCA catalyst.</p>			