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## Transport Phenomena in Functional Hydrotalcite Membranes: Carbon dioxide selective and proton conductive membranes

By Tae Wook Kim

LAP LAMBERT Academic Publishing, 2012. Taschenbuch. Book Condition: Neu. Neu Neuware; original eingeschweisst; Rechnung mit MwSt.; new item, still sealed; - Currently, the humanity is encountering two major crises: energy deficiency and global warming. In order to resolve these crises, we should consider maximizing energy efficiency and minimizing its usage. Furthermore, we should develop alternative energy sources (e.g. wind, solar, biomass), instead of hydrocarbon products. Moreover, we need to commercialize well-known techniques such as fuel cells, which are environment-friendly and high efficiency systems for various applications, such as power generation and transportation. In addition, we need to continue research on CO<sub>2</sub> capture and separation processes. This study presents the synthesis and characterization of CO<sub>2</sub> selective hydrotalcite (HT) membranes with several techniques. In addition, this study explores the possibility of using HT materials as inorganic fillers for conductive membranes in direct methanol fuel cells (DMFC). Due to their properties, hydrotalcites also known as layered double hydroxide compounds, are a potentially good candidate as CO<sub>2</sub>-selective membranes and inorganic filler of conductive membrane. 180 pp. Englisch.



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