ID 464

Synthesis, Crystal Strcture, Magnetic Property, and N2-gas-adsorption Property of Dinuclear Copper(II) Trimethoxybenzoate

Masahiro Mikuriya[1], Chihiro Yamakawa[1], Kensuke Tanabe[1], Daisuke Yoshioka[1], Ryoji Mitsuhashi[1], Hidekazu Tanaka[2], Makoto Handa[2]

[1] Kwansei Gakuin University

[2] Shimane University

Email: junpei@kwansei.ac.jp

Copper acetate [Cu2(O2CCH3)4]·2H2O is a famous copper(II) compound with a lantern- or paddle-wheel-like dinuclear core and has attracted much attention for a long period because of the unique structure and properties. There are so many analogous compounds with a lantern-like core as dinuclear metal carboxylates. Previously, we reported that copper(II) benzoate forms a chain compound with pyrazine and the assembled compound has a gas-occlusion property for N2. We found that the aromacity of the benzoate group plays an important role to construct a hydrophobic micropore. In order to understand the adsorption properties of these compounds, systematic investigations are needed for various types of metal carboxylates. In this study, we synthesized a series of copper(II) trimethoxybenzoates substituted with methoxy group at the three positions of the benzoate group in order to give variety to these compounds. The isolated compounds were characterized using elemental analysis and infrared and UV-vis spectra and temperature dependence of magnetic susceptibility. Crystal structure was determined by the single-crystal X-ray diffraction method for copper(II) 2,3,4-trimethoxybenzoate. Gas-adsorption behavior was investigated for N2. We will discuss on the adsorption property based on the crystal structure.

Keyword: Binuclear Complex, Adsorption Property, Crystal Structure, Magnetic Property

ID 466

An Investigation Into The Potential Of Diospyros Kaki L. Leaf In Adsorption Of Heavy Metal (Ni++) From Industrial Waste Water

Yunus Emre Şimşek, Melike Kale

Bilecik Şeyh Edebali University, Chemical and Process Engineering Department, Turkey

Email: yunusemre.simsek@bilecik.edu.tr

In the 21st century, the substantial increase in heavy metal contamination in nature is one of the most serious problems humankind confronts with and this problem continuous to rise with industrialization. So many industrial water bodies are polluted heavily with both organic and inorganic contaminants such as heavy metals and dyes discharged into them. Since heavy metals are non-biodegradable and cause irreversible damage to nature and habitat. İt is crucial to tackle this problem and to remove heavy metals from them. Adsorption is a simple but effective method to remove these metals. In this work, Diospyros Kaki leaves were used as biosorbent for the removal of heavy metal ion Ni (II). Adsorption, to be more precise, biosorption experiments were carried out at different pH levels. The effect of biomass dosage, contact time and initial concentrations on the removal of Ni (II) from the industrial waste water were also investigated. Different isotherm models such as Langmuir and Freundlich isotherm models were used to clarify the adsorption mechanism. The experimental results obtained cast hopeful light on disposing of heavy metals.

Keywords: Diospyros Kaki, Heavy metal, Waste management