

24.1-14 ELECTRON MICROSCOPY OF HUANGHOITE. By Li Fang-hua, Fan Han-jie and Yang Ta-yu, Institute of Physics, Academia Sinica, Beijing, China.

Huanghoite with the chemical formula $BaCe(CO_3)_2F$ found in China is a kind of barium-synchysite mineral. The structure of Huanghoite has been described previously in terms of different types of layers parallel to the (0001) plane (Fan Hai-fu et al., Acta Physica Sinica (1963) 19, 466). Electron diffraction, electron microscopy and energy dispersive X-ray micro-analysis techniques have been used for studying Huanghoite. The parameters of its hexagonal unit cell have been determined to be $a=5.1\text{\AA}$ and $c=38.6\text{\AA}$. The value of c is twice the parameter of the pseudo unit cell in the same direction. The lattice images with spacings 12.9\AA and 6.45\AA have been observed and they correspond to the interplanar spacings of (0003) and (0006) respectively. The faults have been found in the lattice fringe images. The results of energy dispersive X-ray micro-analysis show that, in general, in Huanghoite there are rare earth elements other than cerium.

24.1-15 A HIGH RATIO HYDRIDO METAL CLUSTER: $[Pt_5H_8(PBu_3)_2Ph]_5$. By David Gregson, Judith A.K. Howard, and John L. Spencer, Department of Inorganic Chemistry, The University, Bristol BS8 1TS, England.

The single crystal X-ray structure of the title complex has shown a distorted trigonal bipyramidal geometry in the solid state, whereas the solution n.m.r. gives a time-averaged D_{3h} symmetrical arrangement. 15,000 data were collected from the red-brown monoclinic crystal at ambient temperature, since cooling to 200 K unfortunately produced a phase change and crystal degradation. The molecular parameters for the "skeletal" atoms are given in Figure 1. Full details will be given in the paper.

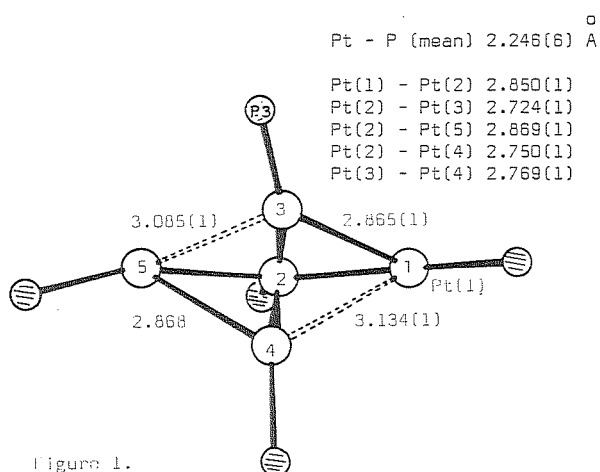


Figure 1.

24.1-16 КРИСТАЛЛОМОРФОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА СОСТОЯНИЯ ЛИКВОРА. Ю.Смирнов, Н.Морозова, Калининский государственный университет, г.Калинин, СССР.

В работе (Неретин, Кирьяков, Сов. медицина (1977) 7, 96) приведена методика визуальной предварительной диагностики болезней мозга. Нами выделены для исследований четыре основных группы заболеваний - злокачественные опухоли, воспалительные процессы, инсульты и травмы. В качестве реагента применен хлорид меди. На первом этапе морфология полученных осадков исследовалась визуально. В зависимости от состояния ликвора в поле преобладали различные формы кристаллов - вискеры, двойники прорастания, граничные формы, дендриты, сферолиты.

В последующем были применены методы стереометрической металлографии и статистической обработки результатов (Дрынчина, Ильина, Морозова и др., Физика кристаллизации, Калинин (1980) 87). Для выхода на клинические испытания подготовлены серии градуировочных кривых, характеризующие каждую группу заболеваний.

24.1-17 THE CRYSTAL STRUCTURE OF A SYNTHETIC HIGH SILICA ZEOLITE - Zsm-39. By J.L. Schlenker, F.G. Dwyer, E.E. Jenkins, W.J. Rohrbaugh and G.T. Kokotailo, Mobil Research and Development Corporation, Research Department, Paulsboro, NJ 08066, and W.M. Meier, Institute of Crystallography and Petrography, ETH, Soneggstrasse 8, CH-8092 Zürich, Switzerland.

The crystal structure of a high silica zeolite Zsm-39, unit cell composition excluding residual water and occluded materials $\sim (Na, tma^*, tea^*)_{0.4}(Al_2O_3)_{0.4}(SiO_2)_{135.6}$ was determined by X-ray powder diffraction. The framework is pseudo face-centered, pseudo cubic with $a = 19.36 \pm 0.02 \text{\AA}$ and ideal symmetry $Fd\bar{3}m$. The framework consists of a space-filling arrangement of pentagonal dodecahedra and hexakaidecahedra and is isostructural with the 17\AA cubic gas hydrate.

Zsm-39 has no sorptive or exchange properties because the framework is composed entirely of 5- and 6-rings. However, the large fraction of 5-rings and the high Si/Al ratio (> 40) impart a high thermal stability. Zsm-39 containing no aluminum constitutes the end member composition.

Although Zsm-39 is the only synthetic zeolite analog of a gas hydrate, two related hypothetical frameworks containing pentagonal dodecahedral cages are proposed.

* tetramethylammonium and tetraethylammonium ions