PYRITE FRAMBOIDS IN THE LIGNITE DEPOSIT OF THE PLAKIA – LEVKOGIA AREA, GRETE

N. Koukouzas*, S. Skounakis**

*2 Fidiou Str, Maroussi, 15126 Athens
**University of Athens, Department of Geology, Panepistimioupoli, Ano Ilisia, 15784 Athens

The presence of sulfur in the lignite deposits of Greece, is a serious problem for their exploitation.

This is the reason that, in this paper, the iron sulfide minerals in coal seams of the Plakia-Levkogia area, Crete, are studied.

Pyrite occurs in framboids, euhedral pyrite crystals and in massive form.

Marcasite occurs in minor amounts and only occasionally.

The precipitation of pyrite, as framboids and euhedral pyrite crystals, is due to the bacterial activity and/or to chemical processes. Massive pyrite is observed as fillings or replacement forms of the organic material.

In this paper, the following conclusions can be drawn:

1. Pyrite is the prevalent form of the iron sulfide minerals and marcasite occurs in minor amounts and only occasionally.
2. The first stage of sulfide mineralization appears to be the formation of framboidal pyrite and euhedral pyrite crystals followed by the formation of massive pyrite
3. The iron sulfide minerals are presented into clay-rich zones.
4. The sulfides preferentially precipitate in some places, affected from the nature of the organic material.

BENTONITE AND RELATED DEPOSITS. WORLD ECONOMIC SIGNIFICANCE AND SITUATION IN GREECE

G. Lüttig, F. Wiedenbein

Chair of Applied Geology, University of Erlangen-Nuremberg, D-8520 Erlangen, F.R. Germany

Within the group of mineral resources, the industrial minerals have surpassed the metallics in world production value since 1950 and today achieve twice the value of the metallics. In the statistics on amounts of all resources, bentonite (elong with attapulgite) ranks 20th (before copper and zinc), in the statistics on value, it ranks 37th. The bentonite group covers about 200 areas of application with prices between 100 and over 100 US $/t.

Greece is one of the leading producers of bentonite, whereby almost all of the benloni-

te comes from the Cyclade Islands Milos and Kimolos. There we know of about 10 differe technical varieties, of which the best are autochthonous types originating by hydrotherm alteration but altered halmyrolytically by Quaternary transgression.

NEOFORMATION OF MINERALS AND GEOCHEMICAL CHARACTERISTICS OF PLIOCENE LAYERS OF AGIOS THOMAS, AEGINA ISLAND, GREECE

A.C. Magganas, M.G. Stamatakis

Department of Geology, University of Athens, Ano Ilissia, Panepistiomiopolis, 15784 Athens, Greece

In the NE part of the Aegina Island in the area of Agios Thomas – Alones siliceou sediments of Lower Pliocene (4.4 ± 0.2 m.y.) in age occur. These sedimentary rocks co tain biogenic opal (opal-A) and authigenic opal (opal-CT). Opal-CT has been derived fro diagenetic transformation of formerly biogenic sediment enriched in diatom frustules, spo ge spicules and radiolarian tests. Both opal-A and opal-CT-rich sedimentary rocks are inte bedded and covered by volcanic breccia. The diagenesis was taken place in shallow buri depths and primarily controlled by high heat flow in the region from the Pliocene up to Hol cene.

Besides the mineralogical conversion, a change in major and trace element concentra tion encountered during diagenesis. So, with the exception of silica, the content of all th other major, and trace elements present a depletion from the diatomaceous rocks to porc lanites (opal-CT-rich strata). Generally, the distribution of all the elements analysed depend on the mineralogical composition of the rock. Especially, boron values in diatom-rich laye are characteristic for marine depositional environment with normal salinity-alkalinity.

Finally, the transformation of opal-A to opal-CT is an unusual phenomenon in suc young sedimentary rocks, which were not deeply buried.

FE-CR-SPINELS AND ILMENITE MINERALIZATION IN THE METAMORPHOSED ULTRAMAFIC ROCKS OF ASKOS AREA, THESSALONIKI DISTRICT, N. GREECE

K.M. Michailidis

Aristotle University of Thessaloniki, Dept. of Mineralogy-Petrology-Economic Geology 54006 Thessaloniki, Greeca

The development of Fe-Cr-spinels and Fe-Ti-oxide mineralization in the ultramafi rocks of Askos area Serbo-Macedonian massif, during regional metamorphism is studie The meta-ultramafics are massive to sheared serpentinites consisting of coarse fibr