

The pyritization of microfossils

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Foraminifera, diatoms, and micro-shellfish filled with or substituted by pyrite were found during sample preparations in the study of microfossils. The aggregations of minute raspberry-formed structure of pyrite were observed by the electron microscopy. A raspberry-formed pyrite, known as a framboidal pyrite, consists of a number of microcrystals. Diameters and average major axes of framboid and microcrystal respectively were measured and the results show the positive correlations. The results indicate that framboidal pyrite grows with growths of microcrystals. A pilot study about the formation of pyrite in the natural reductive environment was performed in the rice paddy field. This study confirmed that pyrite is formed within nine months. The result indicates that fossils filled with or substituted by pyrite could be formed in the reductive environment where sulfate-reducing bacteria inhabit.

Keywords: microfossils, framboidal pyrite, sulfate-reducing bacteria