

Preparation of graphite nanoplatelets from graphite intercalation with microwave

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Natural flake graphite was exfoliated into expanded graphite by an acid intercalation procedure with microwave. Instead of sulfuric acid and nitric acid conventionally used in graphite intercalation, we used perchloric acid as an intercalation agent. The resulting exfoliated graphite had a bellows-like structure composed of graphite sheets with thickness in the nanometer scale. Expanded graphite was characterized by X-ray diffraction, Scanning electron microscope, BET, Transmission electron microscope, Fourier transform infrared spectroscopy.