

## Nature, origins and thermal processing of carbonaceous material in chondritic meteorites

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We have been studying the distribution of carbonaceous material in situ in carbonaceous chondrites using energy filtered transmission electron microscopy. Extensive studies of carbonaceous materials in carbonaceous chondrites have provided a wealth of information about the types of compounds that are present as well as their isotopic composition. We now know that a significant proportion of the organic material in these meteorites is present as an insoluble organic material that has some similarities to terrestrial kerogen. However, significant questions still remain as to the exact location of this material within chondritic meteorites are still unanswered. For example, although the organic material is known to be concentrated in the fine-grained matrix of chondritic meteorites, the associations of this material with the mineralogic constituents of matrix have, until recently been unknown. Using energy filtered TEM, we have studied the distribution of carbonaceous material in CM and CR carbonaceous chondrites.