
We report on a method for identifying carbon-rich nanoglobule targets in carbonaceous chondrites for C and N isotope analysis by SIMS, together with the results of that analysis.

Remusat L. Palhol F. Robert F. Derenne S. *Hydrogen Isotopic Composition of Aliphatic Linkages in Carbonaceous Chondrites Insoluble Organic Matter* [#1350]

Ruthenium tetroxide oxidation allowed us to study the aliphatic linkages in Orgueil and Murchison Insoluble Organic Matter. The recovered products were analysed by GC-irMS to determine their D/H isotopic ratio.

Wang Y. Huang Y. Alexander C. M. O’D. Fogel M. Cody G. *Molecular and Compound-Specific Hydrogen Isotope Analysis of Insoluble Organic Matter from Different Carbonaceous Chondrite Groups* [#1010]

We have conducted the first systematic analyses of molecular distribution and δD values of individual compounds in pyrolysates of insoluble organic matter from different carbonaceous chondrite groups, using flash pyrolysis coupled to compound-specific D/H analysis.

Yabuta H. Williams L. Cody G. Pizzarello S. *The Insoluble Carbonaceous Material of CM Chondrites as Possible Source of Discrete Organics During the Asteroidal Aqueous Phase* [#1367]

The hydrothermal treatment of Murray insoluble organic material may release water and solvent soluble organic compounds.

Wirick S. Cody G. Flynn G. J. Jacobsen C. Keller L. P. Nakamura K. Zolensky M. *Detection of a Water Soluble Component of the Tagish Lake Meteorite* [#1662]

A soluble component was detected in a pristine sample of the Tagish Lake meteorite using X-ray absorption spectromicroscopy and spectra collected from the soluble component matched spectra collected from a micromotom thin section.


Using pyrolysis-GC×GC-TOFMS to analyze organic carbon in carbonaceous chondrites gives a massive increase in both sensitivity and structural information from samples when compared to traditional Py-GC-MS.

Macromolecular Organic Acids in the Murchison Meteorite [#1829]

This study has detected bound organic acids within the Murchison meteorite organic macromolecule. Benzoic acid was the most abundant compound; other abundant compounds include C1 and C2 benzoic acids. Their origin and significance will be discussed.

Keto-Acids in Carbonaceous Meteorites [#2381]

Keto-acids (pyruvic acid homologs) have been identified in carbonaceous chondrites by GC-MS. All compounds were identified as their trimethylsilyl (TMS), isopropyl ester (ISP), and tert-butyldimethylsilyl (tBDMS) derivatives.
TEM and EELS reveal two C-clay associations in the CI CCs. Carbon occurs with fine-grained clays and in coarse-grained phyllosilicates. The data show the nanometer-scale chemical heterogeneity and structural diversity of the C materials with clays.

We present results obtained by Raman spectroscopy of various organic residues of primitive chondrites in order to better characterize the microstructural state of the organic matter. These results will be correlated with the petrographic classification of the chondrites.