

Tuesday, March 20, 2012
POSTER SESSION I: CHEMICAL PROCESSES
IN THE SOLAR NEBULA AND LATEST GENESIS RESULTS
6:00 p.m. Town Center Exhibit Area

Yamada A. Nanbu S. Ozima M.

[Quantum Chemical Calculations on Photo-Dissociation of CO: \$E^1\Pi \leftarrow X^1\Sigma^+\$ with Non-Adiabatic Transition](#) [#2714]

We report fractionation factors using calculated cross section for photo-dissociation of CO isotopologues by using quantum chemical calculations.

Wirström E. S. Charnley S. B. Geppert W. D. Persson C. M.

[Observations of Carbon Isotopic Fractionation in Interstellar Formaldehyde](#) [#1611]

While solar system organics exhibit small fluctuations in $\delta^{13}\text{C}$ as compared to $\delta^{15}\text{N}$ and δD , an interstellar origin cannot be excluded. This study of ^{13}C fractionation in the cold, dense ISM reveals an enrichment in H_2CO that remains to be explained.

Contreras C. S. Salama F.

[Laboratory Simulation of the Formation and Destruction Processes of Extraterrestrial Carbonaceous Materials](#) [#2853]

Experimental mass spectral studies of the formation of PAHs under conditions that simulate circumstellar and interstellar mediums.

Lyons J. R.

[Isotope Signatures in Organics due to CO and \$\text{N}_2\$ Self-Shielding](#) [#2858]

CO and N_2 self-shielding models are used to predict enrichments in simple organic compounds. Methanol and formaldehyde are both depleted in ^{17}O due to formation from CO. HCN is enriched in ^{15}N due to formation from N_2 .

Rodriguez M. C. Allton J. H. Burkett P. J.

[Using Image Pro Plus Software to Develop Particle Mapping on Genesis Solar Wind Collector Surfaces](#) [#2750]

The Genesis curatorial facility at JSC provides optical analysis of collector array surfaces as cleaning steps progress in an updated master cleaning plan coordinated by the Genesis mission PI Don Burnett.

Schmeling M. Burnett D. S. Choi Y. Eng P. J. Stubbs D. E. Tripa C. E. Veryovkin I. V.

[Study of Genesis Solar Wind Samples by Laboratory Based Total Reflection X-Ray Fluorescence Spectrometry and Synchrotron Based Grazing Incidence X-Ray Fluorescence](#) [#2209]

Genesis solar wind samples were analyzed by TXRF and GI-XRF for evaluation of cleaning procedures and discrimination between surface contamination and solar wind.

Baryshev S. V. Zinovev A. V. Tripa C. E. Pellin M. J. Burnett D. S. Veryovkin I. V.

[Fine Structure of Near-Surface Solar Wind Depth Profile by SNMS/SEM Imaging](#) [#2909]

In this work, we report results of Genesis Si coupons investigations conducted by laser post-ionization secondary neutral mass spectrometry (LPI SNMS) based on dual beam depth profiling with low energy normal incidence sputtering (lenisDB).

Wiens R. C. Olinger C. T. Reisenfeld D. B. Heber V. Burnett D. S.

[Ion Trajectory Simulations of the Genesis Solar Wind Concentrator: Li, C, Mg, S](#) [#1369]

The Genesis Solar Wind Concentrator may be used to analyze Li, C, Mg, and S isotopes. We have performed ion trajectory simulations to determine instrumental fractionation for these elements.

Heber V. S. Jurewicz A. J. G. Janney P. Wadhwa M. McKeegan K. D. Burnett D. S.

[Magnesium Isotopic Composition of Solar Wind as Test for Sun-Solar Wind Isotopic Fractionation: A Progress Report](#) [#2921]

We present preliminary data on the solar wind Mg isotopic composition in Genesis collectors to quantify the isotopic fractionation between solar wind and the Sun's photosphere.

Wimpenny J. Yin Q. Z. Burnett D. S. Jurewicz A. J. G. Woolum D. S.

[Measuring the Mg Fluence of the Solar Wind Using LA-ICP-MS Depth Profiling](#) [#1857]

We investigate the Mg fluence in the solar wind by analysing Genesis flight samples by LA-ICP-MS. This technique allows us to depth profile slowly through the silicon or sapphire samples, and to measure a wide range of elements very rapidly.

Veryovkin I. V. Baryshev S. V. Burnett D. S. Pellin M. J. Tripa C. E. Zinovev A. V.

[Dual Beam Sputter Depth Profiling of Genesis Solar Wind Collectors by RIMS](#) [#2296]

We achieved a breakthrough in accuracy of the RIMS method applied to analyses of Genesis solar wind (SW) samples. For the first time, we measured depth profiles of Mg, Ca, and Cr corresponding to different SW regimes and determined their fluences.

Veryovkin I. V. Baryshev S. V. Becker N. G. Burnett D. S. Choi Y. Eng P. J. Stubbs J. E.

Schmeling M. Toyoda N. Tripa C. E. Yamada I. Zinovev A. V.

[Cleaning Genesis Samples with Gas Cluster Ion Beams: Method Evaluation by Comparative Studies with RIMS, GI-XRF and Other Surface Characterization Techniques](#) [#2732]

We conducted concerted and all-rounded evaluation of the efficiency of Gas Cluster Ion Beam technology applied to cleaning of contaminated surfaces of Genesis Solar Wind samples. We compared results obtained with RIMS, GI-XRF and other techniques.