

Abstract Submitted
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Empirical Findings of Gas Exchange with Carbon Nanotubes using SRS RGA100¹ JAMES ROBERTS, AMAN ANAND, University of North Texas, DON HENLEY, Office of Research and Technology Transfer, UNT, JAI DAHIYA, Southeast Missouri State University — An ultrahigh Vacuum study on the emission of various atmospheric as well as inert gases from Single Walled Carbon Nanotubes have been studied using the SRS RGA 100 Analyzer. A 12.2 cm wavelength of microwaves was used to couple with ~30 mg of Single Walled Carbon Nanotubes subjected to a very high vacuum. Generation of plasma due to the quarter wavelength coupling of the intense microwaves was observed which followed with an increased percent emission of atmospheric gases. A wary study is required in interpreting the results of the residual gas analysis of the out-gassed molecular species from the surface desorbed carbon Nanotubes due to the microwave heating. The technique of molecular orbital excitations of the out gassed species of the gases from Nanotubes can have series of spurious results obtained through the electronic control unit of the Residual Gas Analyzer. The electronic ionization of these transient molecular species can have a dual meaning of the atomic mass units of the emitted gases. The Analog Mode plots of the emission obtained from the Residual Gas Analyzer can have a serious implication over the analysis of the results.

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