
ANDREW L. MATTIODA - NASA AMES RESEARCH CENTER

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Related Experience Summary

My primary role for the past several years has been that of a Research Scientist focused on understanding the prebiotic and organic chemistry taking place in outer space. My background includes numerous types of instrumental methods aimed at understanding the spectroscopy of molecular compounds as well as identifying organic and inorganic contaminants present at potential hazardous waste sites. At present I have over seven years of experience investigating the spectroscopy of organic molecules (especially Polycyclic Aromatic Hydrocarbons or PAHs) under interstellar conditions. My current work includes the spectroscopic investigation of the chemical processes occurring in interstellar ices. The results of these laboratory investigations are then compared with astronomical observations.

Employment History

Space Scientist, NASA Ames Astrochemistry Laboratory, 08/2007 - Present

Carl Sagan Center/SETI Institute Principle Investigator, 09/2003 – 08/2007

National Research Council Fellow, NASA Ames Astrochemistry Laboratory, 09/2000-09/2003

Environmental Chemist, U.S. Army Corps of Engineers, 09/1995 – 02/1999

Education

Ph.D. in Physical Chemistry, December 1995, University of Oklahoma, Norman, OK.

Advisor: Dr. Roger Frech

M.S. in Physical Chemistry, December 1993, University of Oklahoma, Norman, OK.

B.S. (Highest Honors) in Mathematics and Chemistry, 1989, East Central University, Ada, OK.

A.A. in Science, 1987, Eastern Oklahoma State College, Wilburton, OK

Professional Societies

American Chemical Society (ACS), Divisions of Physical Chemistry and Environmental Chemistry, 19 year member; American Association for the Advancement of Science

Awards and Honors

Marquis Who's Who in America 2007; Arkansas Traveler, Governor Mike Huckabee, 2004; Group Achievement Award, NASA, 2002; National Research Council Fellowship, 2000; Performance Evaluation Award, USACE, 1998; Achievement Award for Special Service, USACE, 1997; Performance Evaluation Award, USACE, 1997; Superior Performance Award, USACE, 1996; Karcher Fellowship, University of Oklahoma, 1989; Top Engineer & Science Graduate, EOSC, 1987

Selected Relevant Publications

Near Infrared Spectroscopy of Nitrogenated Polycyclic Aromatic Hydrocarbon Cations from 0.7 to 2.5 microns, A.L. Mattioda, L. Rutter, J. Parkhill, M. Head-Gordon, T.J. Lee and L.J. Allamandola, Ap.J. (accepted).

Polycyclic Aromatic Hydrocarbons and the 5.25 & 5.7 mm Interstellar Emission Features, C. Boersma, A.L. Mattioda, C.W. Bauschlicher Jr, E. Peeters, A.G.G.M. Tielens, and L.J. Allamandola, Ap.J. (submitted).

Electronic and Vibrational Spectroscopy of Diamondoids and the Interstellar Infrared Bands between 3.35 and 3.55 microns, C.W. Bauschlicher, Jr., Y. Liu, A. Ricca, A.L. Mattioda, and L.J. Allamandola, Ap.J., 671, 458 (2007).

Near- and Mid-Infrared Laboratory Spectra of PAH Cations in Solid H₂O, M.P. Bernstein, S.A. Sandford, A.L. Mattioda and L.J. Allamandola, Ap.J., 664, 1264(2007).

Infrared Spectroscopy of Matrix-Isolated Polycyclic Aromatic Compounds and Their Ions. 7. Phenazine, a dual Substituted Polycyclic Aromatic Nitrogen Heterocycle, A.L. Mattioda, D.M. Hudgins, C.W. Bauschlicher, and L.J. Allamandola, Adv. Space. Res. 36, 256 (2005).

Experimental Near Infrared Spectroscopy of Polycyclic Aromatic Hydrocarbons between 0.7 to 2.5 μ m, A. L. Mattioda, D. M. Hudgins, L. J. Allamandola, Ap.J. 629, 1188 (2005).
