

## **Wesley T. Huntress, Jr** **Scientific Publications**

### **First Publication**

R. L. Carlin, J. S. Dubnoff, and W. T. Huntress, Jr., "Reactions of Planar Nickel Chelates with Pyridine," Proc. Chem Soc. 228 (1964).

### **Nuclear Magnetic Resonance**

W. T. Huntress, Jr., "The Effects of Anisotropic Molecular Rotational Diffusion on Nuclear Magnetic Relaxation in Liquids," J. Chem. Phys. 48, 3524 (1968).

W. T. Huntress, Jr., "An NMR Study of Anisotropic Molecular Rotation in Liquid Chloroform and in Chloroform-Benzene Solution," J. Phys. Chem. 73, 103 (1969).

D. Wallach and W. T. Huntress, Jr., "Anisotropic Molecular Rotation in Liquid N,N-Dimethylformamide by Nuclear Magnetic Resonance," J. Chem. Phys. 50, 219 (1969).

W. T. Huntress, Jr., "A Method for the Study of Anisotropic Molecular Rotational Diffusion in Liquids by NMR Quadrupolar Relaxation," in Advances in Magnetic Resonance, Vol. IV (J. Waugh, Ed.) (1970).

### **Ion Cyclotron Resonance**

W. T. Huntress, Jr. and J. L. Beauchamp, "Application of Ion Cyclotron Resonance to the Study of Ionizing Reactions of Metastable Molecules," Int. J. Mass Spectrom. Ion Phys. 3, 149 (1969).

W. T. Huntress, Jr., "Ion Cyclotron Resonance Power Absorption: Collision Frequencies for  $\text{CO}_2^+$ ,  $\text{N}_2^+$ , and  $\text{H}_3^+$  Ions in Their Parent Gases," J. Chem. Phys. 55, 2146 (1971).

W. T. Huntress, Jr., and W. T. Simms, "A New Ion and Electron Detector for Ion Cyclotron Resonance Spectroscopy," Rev. Sci. Instrum. 44, 1274 (1973).

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### **Gas Phase Ion-Molecule Reactions**

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W. T. Huntress, Jr., M. Mosesman, and D. D. Elleman, "Relative Rates and Their Dependence on Kinetic Energy for Ion-Molecule Reactions in Ammonia," J. Chem. Phys. 54, 843 (1971).

W. T. Huntress, Jr., D. D. Elleman, and M. T. Bowers, "Dependence of the Rates on Ion Kinetic Energy for the Reactions  $D_2^+ + D_2$  and  $HD^+ + HD$ ," J. Chem. Phys. 55, 5413 (1971).

W. T. Huntress, Jr., "Hydrogen Atom Scrambling in Ion-Molecule Reactions of Methane and Ethylene," J. Chem Phys. 56, 5111 (1972).

W. T. Huntress, Jr., "On Ion Molecule Reactions in Ammonia," Int. J. Mass Spectrom. Ion Phys. 11, 495 (1973).

W. T. Huntress, Jr. and M. T. Bowers, "Reactions of Excited and Ground State  $H_3^+$  Ions with Methyl-Substituted Hydrides," Int. J. Mass Spectrom. Ion Phys. 12, 1 (1973).

M. T. Bowers, W. J. Chesnavich, and W. T. Huntress, Jr., "Formation and Dissociation of the Excited Protonated Species  $[CH_3NH_2^+]^*$ ,  $[CH_3OH_2^+]^*$  and  $[CH_3SH_2^+]^*$  in the Gas Phase; Quasiequilibrium Calculations," Int. J. Mass Spectrom. Ion Phys. 12, 357 (1973).

W. T. Huntress, Jr. and R. F. Pinizzotto, Jr., "Product Distributions and Rate Constants for Ion-Molecule Reactions in Water, Hydrogen Sulfide, Ammonia, and Methane," J. Chem. Phys. 59, 4742 (1973).

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L. P. Theard and W. T. Huntress, Jr., "Ion-Molecule Reactions and Vibrational Deactivation of  $H_2^+$  Ions in Mixtures of Hydrogen and Helium," J. Chem. Phys. 60, 2840 (1974).

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W. T. Huntress, Jr., S. E. Buttrill, J. K. Kim, P. R. LeBreton, and A. D. Williamson, "Photoionization and Ion Cyclotron Resonance Studies of the Reaction of Vibrationally Excited  $C_2H_2^+$  Ions with  $H_2$ ," J. Chem. Phys. 61, 2122 (1974).

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W. T. Huntress, Jr., J. K. Kim, and L. P. Theard, "ICR Studies of Some Hydrogen Atom Abstraction Reactions: X<sup>+</sup> + H<sub>2</sub> → XH<sup>+</sup> + H," J. Chem. Phys. 62, 45 (1975).

J. K. Kim and W. T. Huntress, Jr., "Ion Cyclotron Resonance Studies of the Reactions of H<sub>2</sub><sup>+</sup> and D<sub>2</sub><sup>+</sup> Ions with Some Simple Molecules and Hydrocarbons," J. Chem. Phys. 62, 2820 (1975).

P. R. LeBreton, A. D. Williamson, W. T. Huntress, Jr., and J. L. Beauchamp, "Photoionization and Ion Cyclotron Resonance Studies of the Reaction C<sub>2</sub>H<sub>4</sub><sup>+</sup> + C<sub>2</sub>H<sub>4</sub> → C<sub>3</sub>H<sub>5</sub><sup>+</sup> + CH<sub>3</sub>," J. Chem. Phys. 62, 1623 (1975).

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W. T. Huntress, Jr., D. K. Sen Sharma, K. R. Jennings, and M. T. Bowers, "Metastable Peaks in Chemical Ionization Mass Spectrometry: Unimolecular Decomposition of Protonated Methanol Ions," Int. J. Mass Spectrom. Ion Phys. 24, 25 (1977).

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## **Astrochemistry**

### Chemistry in Interstellar Clouds

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#### Chemistry in Planetary Atmospheres

K. M. Monahan, W. T. Huntress, Jr., A. L. Lane, J. M. Ajello, T. E. Burke, P. LeBreton, and A. D. Williamson, "Cross-Section for the Dissociative Photoionization of Hydrogen by 584Å Radiation: The Formation of Protons in the Jovian Ionosphere," *Planet. Space Sci.* 22, 143 (1974).

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## **Earth Atmospheric Science**

J. M. Ajello, W. T. Huntress, Jr., and P. Rayermann, "A Photoionization Mass Spectrometer Study of  $\text{CFCl}_3$ ,  $\text{CF}_2\text{Cl}_2$ , and  $\text{CF}_3\text{Cl}$ ," J. Chem. Phys. 64, 4746 (1976).

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