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An Examination of the Photochemistry of Nitrous Acid

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Poster Presentation P76

AN EXAMINATION OF THE PHOTOCHEMISTRY OF NITROUS ACID

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With our increased use of fossil fuels, there has been a major increase in emissions of atmospheric pollutants. Featured among these are oxides of nitrogen (NO_x) formed primarily by internal combustion engines (automobiles). NO_x reacts in the environment to form various compounds, including nitrous acid, HONO. Nitrous acid is photolyzed by UV light from the sun, forming radicals that can react with a myriad of volatile organic compounds in the atmosphere, especially unsaturated hydrocarbons. This investigation has two objectives: (1) a study of the thermal stability of aqueous nitrous acid, monitored by UV Vis spectroscopy and pH; and (2) a study of ethylene (H₂C=CH₂, a simple model for unsaturated compounds) as a radical scavenger used during the photolysis of aqueous nitrous acid.