STABILITY AND RADIATION CHEMISTRY OF LOW TEMPERATURE PYRIDINE ICES. K. E. Smith[1], P. A. Gerakines[2], and M. P. Callahan[2], [1]NASA Postdoctoral Program Administered by Oak Ridge Associated Universities, Greenbelt, MD 20771, USA, [2]Astrochemistry Laboratory, NASA Goddard Space Flight Center, Greenbelt, MD 20771, USA, E-mail: karen.e.smith@nasa.gov

Numerous laboratory studies suggest that prebiotic organic compounds can be synthesized through energetic processing of ices in dense interstellar clouds [1]. This material was likely incorporated into comets and meteorites, which could have seeded early Earth with prebiotic organic compounds [2]. Among these organic compounds, nitrogen heterocycles may be of significance to astrobiology. Pyridine is the simplest, six-membered nitrogen heterocycle and can be found as a component of essential coenzymes, such as nicotinamide adenine dinucleotide.

We will present our latest research on the radiation stability of pyridine ices as well as the synthesis of complex organic compounds derived from pyridine under low-temperature radiation environments relevant to interstellar ices and comets. Fourier transform infrared spectroscopy and high resolution mass spectrometry were used for *in situ* analyses of ices and *ex situ* analyses of refractory organic material, respectively.

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