THE INFRARED SPECTRUM OF $NN\cdots CO^+$ TRAPPED IN SOLID NEON

WARREN E. THOMPSON and MARILYN E. JACOX, *Optical Technology Division, National Institute of Standards and Technology, Gaithersburg, MD 20899-8441*.

When a mixture of N_2 and CO in a large excess of neon is codeposited at 4.3 K with a beam of neon atoms that have been excited in a microwave discharge, the infrared spectrum of the resulting deposit includes absorptions which are contributed by the NN- and CO-stretching fundamentals of the cation complex. Detailed studies of the absorption pattern obtained in experiments using isotopically substituted N_2 and CO support this assignment. Intensity anomalies observed when ^{13}CO is present are attributed to Fermi resonance between the NN-stretching fundamental and a combination band involving the ^{13}CO-stretching vibration and a totally symmetric low frequency fundamental.