DIRECT MEASUREMENTS OF AMMONIA IN ZANTAC BY A K-BAND MOLECULAR ROTATIONAL RESONANCE (MRR) SPECTROSCOPY

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Zantac is a pharmaceutical drug commonly used for treating gastroesophageal reflux disorder, and stomach ulcers. This drug has been recently removed from the US market due to the presence of impurities of nitrosamine that contributes to an increased risk of liver, gastric and pancreatic cancers. In this work, a K-Band molecular rotational resonance spectrometer, which operates in 18-26GHz, has been examined for the fast detection of polar impurities in Zantac by measuring the rotational signatures of heated samples of Zantac at 100°C. The initial analysis of the observed MRR spectrum confirms the presence of ammonia and water due to the current sensitivity of a K-Band MRR to small polar species. The present measurements have been further used to determine the content of ammonia using Henry constant and measured partial pressure. The work to improve the sensitivity, reproduce the data and validate MRR for the measuring impurities in Zantac is underway and the progress will be reported in this talk.