IR SPECTROSCOPIC STUDIES OF SIMULTANEOUS TRANSITIONS IN GAS AND LIQUID MIXTURES

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It was discovered the number of simultaneous transitions in IR absorption spectra of some gas and liquid mixtures. The frequencies, widths and absolute intensities of studied absorption bands were measured and calculated. We were the first, for the gas-solution phase transitions, which demonstrated the conservation of integral intensities of the bands of simultaneous transitions in the IR absorption spectra for a big number of binary mixtures. A new spectroscopic method for the definition of the quantity of the dissolved gases, including non-polar, based on measuring of the absolute intensities of the bands of simultaneous vibration transitions in the absorption spectra of different mixtures was offered. It is suggested also to define the dimer's concentration by integral intensities of simultaneous vibration transitions bands in absorption spectra of binary and ternary mixtures, which are capable to hydrogen bond formation.