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## SUBSTITUTENT EFFECTS IN HYDRAZIDES OF FLUOROCARBOXYLIC ACIDS

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Intramolecular interaction in hydrazides of fluorocarboxylic acids,  $R_F^1CON^1R^2N^2R^3R^4$  ( $R_F^1$  = fluoroalkyl and pentafluorophenyl substituents,  $R^2, R^3, R^4$  = H, Alk) was studied by UV and IR spectroscopy. The long wavelength absorption (230-250 nm) in the UV spectra of alkanefluorocarboxylic acids is mainly caused by electron transitions in N-N-C=O groups. The absorption corresponds to the p, $\pi$ -conjugation and interaction of lone electron-pairs in the molecule. Different substitution at nitrogen atoms changes the electron transition energy. The  $\nu_{C=O}$  band intensity and frequency reflect the change in the resonance interaction in CON group.

The ability of hydrazides to self-association via NH---O=C and NH---N bonds also depends on the substitution in the N-N fragment. A remarkable stability of fluoroacyl-N<sup>1</sup>,N<sup>2</sup>-dimethylhydrazine associates present as NH---N bonded trimer structures even in the gas phase has been established. At the same time, the relative basicity of the oxygen atom of the compounds studied ( $\Delta\nu_{OH}$ ) is poorly susceptible towards substitution at the nitrogen atom. The  $\Delta\nu_{OH}$  value is considerably lower in fluorocarboxylic hydrazides than that of their non-fluorinated analogs.

The intramolecular mutual effect of C<sub>6</sub>F<sub>5</sub> and CONN groups in pentafluorophenylhydrazides manifests itself by lower  $\pi$ -order of the C<sub>6</sub>F<sub>5</sub>-CO bond and higher torsion angle  $\gamma$  as compared with hydrocarbon analogs.