

## Abstract

A series of fluorinated phenylacetanilides have been synthesized and characterized to unravel the importance of interactions involving fluorine in the presence of strong hydrogen bond donors and acceptors. The effect of fluorine substitution on the molecular solid-state organization and conformation in the crystalline lattice has been discussed in terms of changes in supramolecular aggregation. It is interesting to note that among the compounds studied various compounds have displayed isostructurality. There were also some instances of positional disorder being exhibited by fluorine due to the rotational freedom of benzene ring. It was also observed that most of the compounds displayed intramolecular C–H...O interactions. The aniline ring was found to be active participant in hydrogen bonds involving fluorine compared to the acid ring.