

apicophilicity

In trigonal bipyramidal structures with a five-coordinate central atom, the stabilization achieved through a *ligand* changing its position from equatorial to apical (axial). The apicophilicity of an atom or a group is evaluated by either the energy difference between the *stereoisomers* (permutational isomers) containing the ligand in apical and equatorial positions or the energy barrier to permutational isomerization (see also Berry *pseudorotation*). In general, the greater the electronegativity and the stronger the π -electron-withdrawing properties of a ligand (as for Cl, F, CN), the higher is its apicophilicity. The notion of apicophilicity has been extended to four-coordinate bisphenoidal and three-coordinate T-shaped structures, which can be viewed as trigonal bi-pyramidal species where, respectively, one or two vertices are occupied by phantom ligands (lone electron pairs).

1999, 71, 1923