

Planar Hypercoordinate Atoms

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Thinking about a planar tetracoordinate carbon atoms (ptC) (or even planar pentacoordinate carbon atom) may look like an aberration in organic chemistry or simply a figment of the imagination of a theoretician, but in the last forty years, a plethora of such compounds have been synthesized or detected experimentally. As mentioned by Roald Hoffmann, “the purpose of studying nonclassical molecules is to learn from the abnormal... the making of molecules that are untypical or abnormal test our understanding of that fundamental yet fussy entity –the chemical bond” and the ptC is one of the best examples.

Here I will discuss some of our contributions in this field and the computational tools used to analyse such type of compounds and the extension to other main group elements.

Key-words: Hypercoordination, multicenter bonding, nonclassical carbon systems

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