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The influence of fluorine and parahalogen substituents on the chemistry of some functional groups

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The influence of fluorine, trifluoromethyl, trifluoromethylsulfanyl or trifluoromethylselenyl on the chemistry of selected functional groups such as carbene, nitrene, C=X (X=O, S, Se, Te), =C=C=O and NSO will be presented. Starting with evidence for the existence of $(CF_3S)_2C$ and CF_3SN, their stability and reactivity will be compared with those of F- and CF_3-substituted carbenes and nitrenes. Tellurocarbonyldifluoride, $(CF_3)_2C{=}Se$, $(CF_3Se)_2CSe$, $(CF_3S)_2C{=}C{=}O$ and CF_3SNSO are other key compounds treated in the same manner. Their preparation and chemical and physical properties will be discussed in comparison with either their fluorine, CF_3, CF_3S or CF_3Se analogues. An attempt will be made to offer general rules for planning potentially successful syntheses.