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AROMATIC COMPOUNDS WITH NEW FLUORINE-CONTAINING SUBSTITUENTS

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The introduction of the strong electron-accepting fluorine-containing substituents into the aromatic moiety allows obtaining the compounds with unique properties.

Determination of the electronic nature of the grouping $(R_f)_2PO$ in the recently prepared arylbis(perfluoroalkyl)phosphine oxides has shown that this substituent is comparable with R_fSO_2, one of the most electron-accepting groups.

A general principle for the construction of the new superstrong electron-accepting substituents through the replacement of oxygen atoms for trifluoromethylsulphonylimino group is proposed. For example, when the oxygen atoms in CF_3SO and CF_3SO_2 groups are replaced for $CF_3SO_2N=$, the new stable and more electron-accepting than all ever known substituents are formed.

	σ_i	σ_R	σ_p		σ_i	σ_R	σ_p
NO_2	0.57	0.20	0.77	$(C_3F_7)_2PO$	0.79	0.31	1.10
CF_3SO	0.66	0.12	0.78	$CF_3S{=}NSO_2CF_3$	1.08	0.20	1.28
CF_3SO_2	0.76	0.29	1.05	$CF_3S(O){=}NSO_2CF_3$	1.06	0.34	1.40

The grouping $CF_3S(O){=}NSO_2CF_3$ corresponds to two nitro groups. The similar growth of electron-accepting ability is observed as well in the groupings derived from other elements in the case of replacement of oxygen stoms for $CF_3SO_2N=$ group.