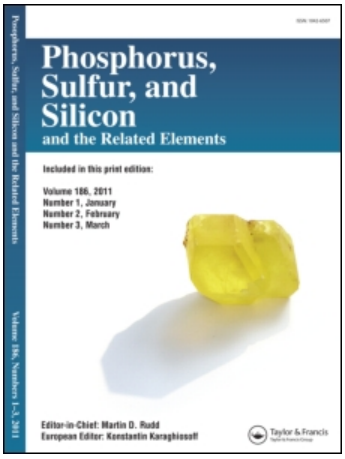

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DETERMINATION OF SPIN-SPIN COUPLING CONSTANTS J(PP) ON THE BASIS OF ^{13}C AND ^{31}P NMR DATA

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The diphosphine dioxides $Ph_2P(O)CH_2P(O)Ph_2$ (I), $Ph_2P(O)CH_2CH_2P(O)Ph_2$ (II), $Ph_2P(O)CH=CHP(O)Ph_2$-cis (III), -trans (IV), $[Ph_2P(O)]C=CH$ (V), $[Ph_2P(O)]_2C=PPh_3$ (VI), and also non-symmetric $Ph_2(P)OCH=CHP(O)PhEt$-trans (VII), $Et_2P(O)CH=CHP(O)PhEt$-trans (VIII), have been studied in CH_2Cl_2 and $CHCl_3$ solutions by means of ^{13}C and ^{31}P NMR.

The ^{13}C chemical shift values in ortho-, meta-, and para-positions of phenyl-groups and bridging carbon atoms are obtained. The spin-spin coupling constants J(CP) are found. On the basis of ^{13}C NMR spectra, the spin-spin coupling constants of compounds (I-V, VII) are calculated.

The J(PP) value for V is in good agreement with what was found from ^{1}H NMR spectra. The estimation of angle values between phosphoryl groups of dioxides is discussed.

Temperature dependence of ^{31}P relaxation times T_1 and T_2 of dioxides is studied.