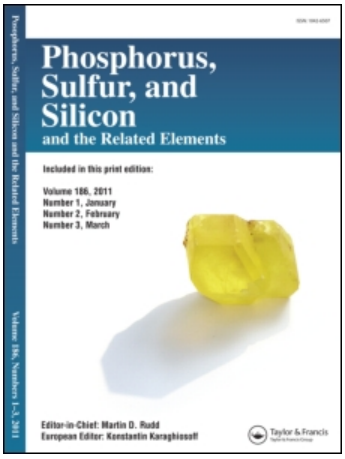

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Investigation of Bis(α-Phenylethylamido)Methylphosphonates by NMR Spectroscopy

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INVESTIGATION OF BIS(α-PHENYLETHYLAMIDO)METHYLPHOSPHONATES BY NMR SPECTROSCOPY

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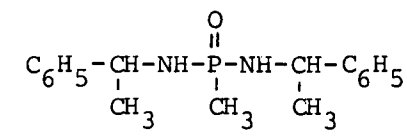
The influence of the relative location of chiral carbon and phosphorus atoms and the position of the aryl-group on diastereomeric anisochronity in non-racemic mixtures of enantiomers has been examined. The optical isomers of methanephosphonic acid bis(α-phenylethylamide) (I), which contain pro-chiral phosphorus atom, were synthesized by the reaction of methanephosphonic acid dichloride(II) with (+)- or (-)-α-phenylethylamine(III). The extent of chemical shift nonequivalence in ^{31}P and ^{1}H NMR spectra of non-racemic mixtures of RR- and SS-I was negligible. It can be explained by the absence of aryl-amino group, favouring intermolecular association, effect of SCADA[1], and the long distance between the chiral center and pro-chiral phosphorus. Phosphonylation of non-racemic mixtures of (+)- and (-)-III by II proceeds stereospecifically giving mixture of RR-, SS-I, and two meso-compounds analyzed by ^{31}P ^{1}H NMR.



(I)

1. T.A.Mastryukova, A.B.Ouryupin, M.I.Kadyko, P.V.Petrovskii, M.I.Kabachnik, A.Okruszek, R.Kinas, W.Stec. X International Conference on phosphorus chemistry (Bonn, FRG, 1986). Abstracts of papers, B-66.