

The kabachnik-fields reaction: Synthetic potential and the problem of the mechanism

Cherkasov R., Galkin V.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

The data published in the last decade concerning the mechanism of the Kabachnik - Fields reaction and its significance for the chemistry of organophosphorus compounds as a method for synthesis of α -amino phosphonates and its numerous functionally substituted derivatives and analogues (phosphinates, phosphine oxides) are generalised and described systematically. The discussion covers both the classical variant of the Kabachnik-Fields reaction and its modifications using phosphorus chlorides, neutral esters, and inorganic phosphorus-containing acids and also chemical processes modelling separate stages of the reaction (hydrophosphorylation of imines and amination of α -hydroxy phosphonates). Some information on the use of α -amino phosphonates is given.
