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CHEMISTRY OF PHOSPHINIDENE INTERMEDIATES AND THEIR APPLICATIONS

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Phosphinidene tungsten pentacarbonyl complexes are extremely unstable, highly reactive and could be generated *in-situ* only. These intermediates could be trapped easily in presence of various reagents containing π -systems to afford a number of P-heterocycles. A number of compounds are known to give phosphinidene intermediates but 2H-azaphosphirene tungsten pentacarbonyl complex is the most stable precursor for the *in-situ* generation of terminal phosphinidene complexes. Recently, we found that terminal phosphinidene tungsten pentacarbonyl complex reacted efficiently with the reagents containing no π -systems. For example, a reaction of terminal phosphinidene complex with CCl_4 resulted in dehalogenation, which established the route for the selective insertion of phosphinidene complex into carbon-halogen bonds. Such reaction also resulted in dehydroiodination. A reaction of triethylamine with phosphinidene complexes resulted in the formation of primary phosphine complex via dehydrogenation.

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Biography

Arif Ali Khan has received his PhD degree in Chemistry from A M U, Aligarh (India) in 1994. Since then he has gained experience as Research Associate and Senior Research Associate at IIT-Delhi and as a Post-doctoral Fellow at Technical University of Braunschweig, Germany. He joined as Lecturer in Chemistry at GGSIP University, New Delhi in 2005. His research interests are in the area of Coordination Chemistry, Organophosphorus Chemistry, Organometallic Chemistry, Metal Ion Catalysed/Promoted Organic Synthesis and Synthesis of Biofuels/ Biodiesel. He has published several research papers in reputed journals. He has successfully completed a number of national projects and international research projects.

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