

## Neutral Tris(Azoly)Phosphanes: An Intriguing Class of Molecules in Chemistry, Arunabha Thakur\* and Dipendu Mandal, Department of Chemistry

Azoles and poly(azoles), in their neutral or anionic forms, have emerged as potential ligands since more than forty years and, due to their versatility, they still play a vital role in coordination chemistry. Although a variety of versatile ligand systems based on azoles for example tris(azolyl)methane or tris(azolyl)borate have been synthesized, phosphane-based neutral tris azolyl ligands are more advantageous over its methane and anionic borate analogues in terms of their synthetic methods and yields. This review summarizes the advances produced so far in the use of nitrogen containing five member tris(azolyl)phosphane ligands in coordination chemistry. In the course of time, the publications on this topic have grown significantly but to the best of our knowledge, there is no review to systematize the existing information on the coordination chemistry of neutral tris(azolyl)phosphane ligands and to highlight some perspectives in the synthesis and applications of their metal complexes. The present review comprehensively surveys not only the synthesis, spectroscopic and structural characterization but also pays special attention to their applications and their reaction chemistry. We believe that the collection and comparison of this literature will facilitate the development of new azolyl phosphane chemistry and their potential applications. More in *Coordination Chemistry Review* 329 (2016) 16–52

