Tata Institute of Fundamental Research
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Internal Webinar

Sterically Hindered Phosphates: Synthesis and Metalation

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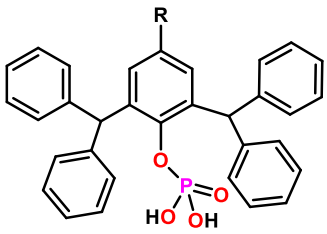
A series of bulky aryl-substituted phosphate monoesters were interacted with a variety of organic bases or Lewis acids and the supramolecular structures of the compounds that were obtained were studied. To explore the interaction of these phosphorus-based acids, their interaction with various types of metal ions involving *s*-block [Mg(II)], *d*-block [Zn(II)] and *p*-block [Sn(IV)] elements were investigated and compounds with varying nuclearity (one-dimensional polymer, dimer, tetramer, and hexamer) were isolated. The nuclearity of these compounds was modulated by a variety of factors including the steric bulk of the phosphate monoesters, ancillary ligands as well as solvents of coordination. The synthesis and structures of these metallophosphates will be discussed in the seminar.



R = Me, Et, ^{i}Pr, ^{t}Bu

Figure: Structure of bulky aryl phosphate ligand

References:

(a) *ACS Omega.* 2019, *4,* 2118-2133. (b) *Dalton Trans.* 2019, *48,* 8853-8860.
(c) *Polyhedron.* 2019, *172,* 216-225. (d) *Cryst. Growth Des.* 2020, *20,* 3034-3043.

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