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Synthesis, characterization and application of Polyoxometalate-based Ionic Liquids

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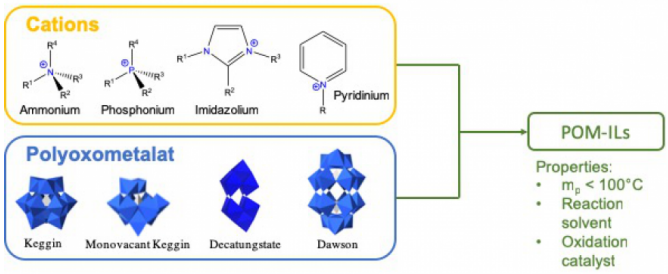
PURPOSE OF THE ABSTRACT

In the sustainable context, Ionic Liquids (ILs) were amongst the first green solvents used. These salts, liquid at room temperature, are composed of an organic cation and an inorganic or organic anion. There are virtually infinite combinations of ionic moieties and this allows ionic liquids to have many properties1 (solvent, negligible vapor pressure under ambient T and P, variable miscibility...) and applications (electrolyte, catalyst, reaction and biomass extraction solvent...).

On a different note, polyoxometalates (POMs) can be viewed as soluble molecular metal oxides with heavy molecular weight (10^2 to 10^5 g/mol). They are usually composed of Mo or W in their highest oxidation state and can include all the element of the periodic table, which confer to them plethora of properties in all domains (catalysis, medicine, depollution, optics...). Combined with appropriate organic cations, they can provide POM-based ILs liquid at room temperature.

In this contribution, we will present the synthesise and characterizations of some new POM-based ILs and their applications towards oxidation catalysis of organic molecules.

FIGURES



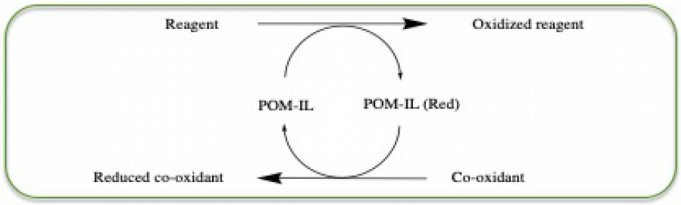


FIGURE 1

Figure 1:

POM-ILs synthesis and properties

FIGURE 2

Figure 2:

POM-ILs used in oxidation reaction

KEYWORDS

Polyoxometalate | Ionic Liquid | Catalyst | Oxidation

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