



DEVELOPMENT OF EFFICIENT PROCESSES UNDER FLOW CONDITIONS BASED ON CATALYSTS IMMOBILIZED ONTO SUPPORTED IONIC LIQUID-LIKE PHASES (SILLPS)

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Catalytic applications represent a central subject in Green Chemistry. For the next future, research efforts need to be driven towards the development of practical catalytic processes for the preparation of Fine Chemicals and Farmaceutical products, which are areas that have the higher waste factors. One of the more straightforward approaches to implement the potential for practical use and to implement the “Green character” of catalytic processes is the immobilization of the catalyst onto a support as this facilitates the work-up, particularly the recycling and reuse, decreases the toxicity of catalytic materials and can significantly reduce the final amount of waste produced. In this context, we have prepared different advance materials that can acts as “Solid Solvents” being able to immobilise and stabilise of different catalytic species (nanoparticules,¹ organocatalysts,² enzymes,³ photocatalysts for photooxygenation processes,⁴ etc). Such materials are prepared introducing imidazolium ionic liquids-like fragments. This new class of advanced materials shares the properties of true ILs and the advantages of a solid support, in some cases, with an enhanced performance for the solid material.

Here, we report on our strategy for the immobilisation of ILs onto a support or structured materials leading to either monolithic or gel supported ionic liquid-like phase (*m*- or *g*-SILLPs) as well as their use in different catalytic processes.

[1] *Chem. Commun.* **2006**, 3095-3097

[2] *Green Chem.* **2008**, XX

[3] *Adv. Synth. Catal.* **2007**, 349,1077-1084

[4] unpublished results