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DESIGNING A NANOSTRUCTURED DIPHOSPHATE FOR 2-AMINO-CHROMENES SYNTHESIS IN WATER

Mohamed Karkouri [1], Asmae Snik[1], Abdelhakim Elmakssoudi [1], Mohamed Zahouily[1], Mosto Bousmina[2], Abdelrrahim Solhy[2]
[1] Laboratoire de Catalyse, Chimiométrie et Environnement, URAC 24, Faculté des Sciences et Techniques, Université Hassan II, Mohammedia
[2]Institute of Nanomaterials & Nanotechnology (INANOTECH), MAScIR Foundation
*Corresponding author: m.zahouily@inanotech.mascir.com

With industry moving towards the lower-environmental-impact and lower-cost processes, the use of heterogeneous catalysis has become a key priority. However, this is often largely counterbalanced by the higher selectivity and lower energy requirements of the use of a catalytic technology. Recently, there has been an exponential growth in the development of catalysis by nanomaterials. This has been accompanied by an increased activity of engineered nanomaterials for academic and industry applications in the field of catalysis. In the present work,1 we demonstrated that grinding and heating, extremely slow, the reactants can lead to a nanostructured phosphate (Fig. 1). Indeed, we have developed, a versatile, alternative and environmentally benign one-pot three-component strategy to the synthesis of a series of 2-amino-chromenes in water, using this nanophosphate as a basic catalyst. The catalyst is waste-free, easily prepared, and efficiently re-used. The prepared 2-amino-chromenes, in presence of acetic anhydride, have been easily converted to benzo(a) anthracene derivatives.