Phosphorene: a rising star in the 2D world

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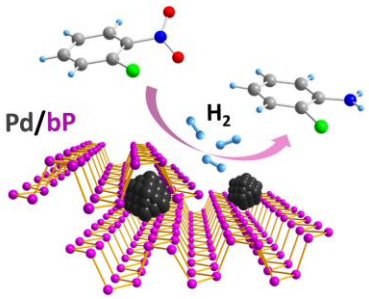
Since its discovery in January 2014, phosphorene, the new 2D-material prepared by exfoliation of black phosphorus and formed only by P atoms, has attracted scientists for its fascinating electronic and optical properties.[1] At variance with graphene, this new single layer material has free electron pairs onto its corrugated surface that in principle can interact with metal ions, metal-ligand fragments and organic molecules.
In our labs, the surface functionalization of phosphorene with transition metal nanoparticles[2] was studied, and in particular for the first time EXAFS analysis was carried out to elucidate the nature of the interaction between P atoms and metal nanoclusters. Afterwards, the application of the new nanohybrids, Pd/bP and Ni/bP, in selective catalytic hydrogenation was investigated.



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References

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