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A NEW ROUTE TO PREPARE GRAPHENE/IRON OXIDE COMPOSITE ELECTRODE FOR BATTERIES.

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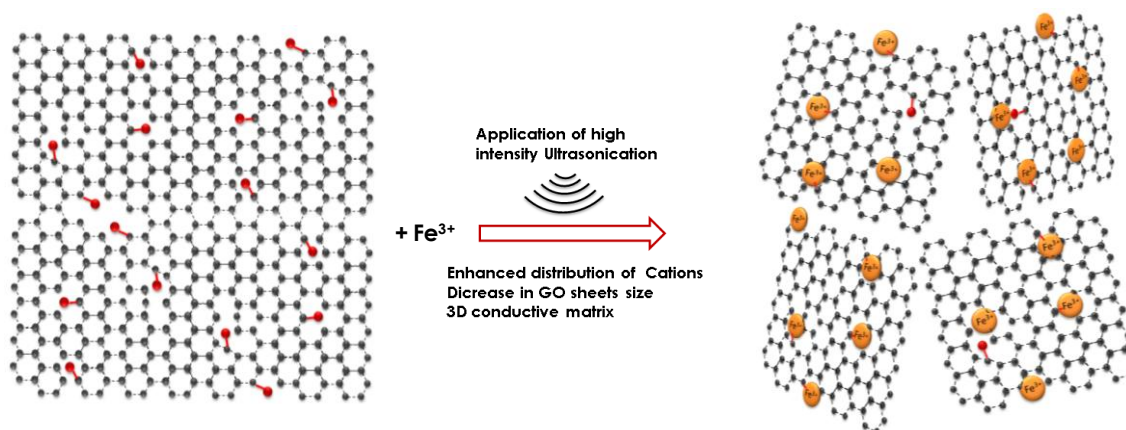
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We have recently used high-intensity ultrasonication to prepare a composite material containing graphene and amorphous nanoparticles of FeO(OH).¹ The procedure is particularly useful to achieve the anchoring of very small nanoparticles of iron oxyhydroxide to the graphene layer (Scheme 1). In addition, the ultrasonication treatment enhances the dispersion of the nanoparticles.

Besides lithium,¹ we have observed that this composite is also able to react reversibly with sodium.

These results open a wide range of possibilities to prepare new composite materials for both lithium and sodium batteries.



Scheme 1. Representation of graphene layers with dangling bonds and anchoring of iron ions after high-intensity ultrasonication.

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