Reimer-Tiemann and domino Reimer-Tiemann / Cannizzaro reactions on polyhydroxylated graphene layers

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Objectives

- Functionalization of graphene layers, introducing oxygen containing functional groups, without substantially affecting the sp² hybridization of carbon atoms.[1,2]
- Preparation of stable water suspensions of few layers graphene and green carbon composites. [2]

Characterization

- FT-IR on diamond crystal
- X-ray diffraction patterns

Conclusions

It is here reported the first example of Reimer-Tiemann and Reimer-Tiemann/Cannizzaro domino reaction, obtained by mixing polyhydroxilated graphene layers with CHCl₃ and KOH.

Such Reimer-Tiemann and the domino reaction allowed the preparation of:
- Functionalized few layer graphene, carbon papers, monolithic aerogels with substantially unaltered structure of the sp² carbon allotrope.

References: