

# Photofunctionalization of carbon surfaces with organic molecules

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We have devised a simple method to functionalize carbon surfaces with a variety of organic moieties, from small molecules to proteins or enzymes using UVC and/or Vis light. Irradiation of heterogeneous solutions of the solid in the presence of the organic molecules to be inserted leads to successful photoinsertion of the organic moiety onto the solid surface. The procedure has been tested with different carbonaceous materials: graphite, carbon nanotubes, graphene and their oxidized forms. The nature of the functionalized surface has been characterized through different techniques, such as total carbon analysis, ion chromatography, thermogravimetric analysis (TGA) coupled with FTIR, XPS and solid state <sup>13</sup>C-NMR, showing enough evidences to confirm the success of the photoinsertion. Relevant reactivity differences have been found when using oxidized and reduced surfaces.

Here, we will give some examples of the obtained results: kinetics, chemical and spectroscopic characterization, and a proposal of a suitable mechanism for the process.

## References.

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