

# FUNCTIONALIZATION OF SYNTHETIC CARBON ALLOTROPES

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Chemical functionalization of new C-allotropes is of fundamental interest and opens the door to unprecedented materials applications. In principle, the physical and chemical properties of fullerenes, carbon nanotubes (CNTs) and graphene are related to each other, although their levels of development vary considerably. In order to efficiently explore the reactivity of the less developed CNTs and especially that of graphene it is our goal to provide a unifying approach for the chemistry of all three new carbon allotropes. The fullerenes present the first family of synthetic carbon allotropes. Since their availability in macroscopic quantities numerous investigations with respect to their chemical functionalization have been carried out. The chemistry of CNTs, however, is much less developed. Although many protocols for covalent and non-covalent CNT functionalization have been published there are still many fundamental problems to be solved. Finally, the youngest representative in the list of new C-allotropes is graphene and the exploration of its chemistry has just begun to start. We will present a series of new results of covalent and non-covalent functionalizations of fullerenes, carbon nanotubes and graphene.