Modification of the surfaces of materials with functional organic layers

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Abstract

Tethering carbon (all types), metal, semiconductor and polymer surfaces with organic moieties ensuing the electrochemical reduction of vinylics, aryl diazonium salts and the oxidation of primary alkyl amines, carboxylates has shown the tremendous potential of different organic molecules to create thin organic coatings that change drastically the properties of the material. [1,2] Among these reagents, aryl diazonium salts are widely used due to wide substrate compatibility, strong adhesión to substrate surface and the modification is performed in organic and aqueous solvents. In most of the cases, the organic moieties bear different functional groups that serve as coupling agents for further post modification of the attached layer through many different ways, Figure 1.[3] This strategy has permitted to prepare new entities that are used for many applications like chemical and biosensors, catalysis, optoelectronics, molecular electronics, drug delivery etc.

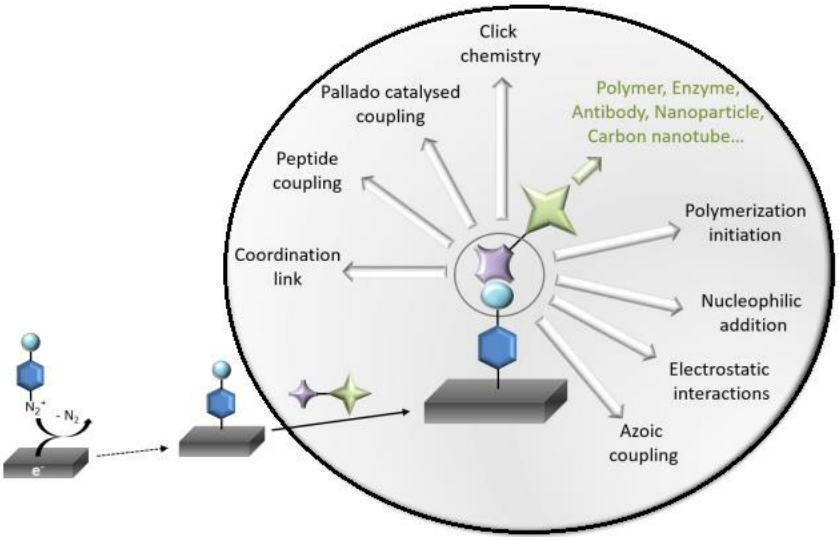

Fig. 1. Modification of material surfaces with functional organic moieties that unable further post-modification through different ways. [3]

References

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