



Perfluoropolyether-functionalized carbon-based materials and their applications in energy devices

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Carbon atoms can arrange to build nanostructures of different dimensionality, shape and properties that are nowadays extensively exploited in many technologies and applications, especially in the field of energy devices (Fig. 1). Even more interestingly, carbon nanomaterials can be efficiently modified with functional molecules, altering their structure and electronic features, broadening the range of properties and widening the fields of their application. In this work, our experience on chemical grafting of perfluoropolyether (PFPE) chains to carbon nanostructures is reviewed and purposed as approach for PFPE covalent functionalization to several carbon-based materials, focusing their application in the field of energy devices [1-3].

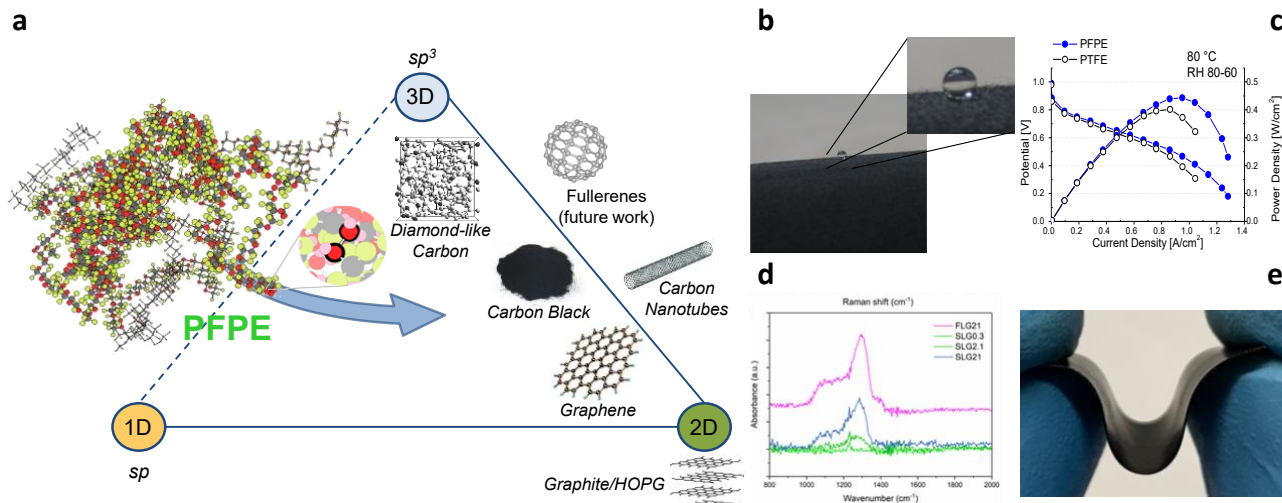


Figure 1. Scheme of (a) chemical grafting with PFPE chains to several carbon-based materials; superhydrophobic PFPE-functionalized carbon cloth (b) for GDLs and its polarization curve (c) in a PEM-FC; (d) FT-IR spectra of PFPE-functionalized graphenes; (e) flexible PFPE-functionalized CNTs-based electrode.

References

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