

Graphene Electroactive Nanofluids for Energy Storage.

Pedro Gómez-Romero, Deepak P. Dubal

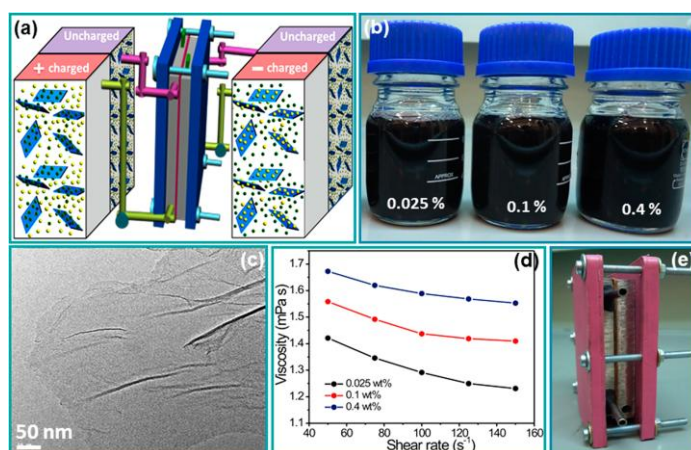
Catalan Institute of Nanoscience and Nanotechnology, ICN2 (CSIC-BIST), Campus UAB, 08193 Bellaterra (Barcelona), Spain

pedro.gomez@icn2.cat

Energy storage has never been so thriving as it is today, boosted by the need of a new and sustainable energy model. At the same time, graphene is witnessing an explosive growth both in fundamental research and applied developments, among which, energy storage is one of the most frequently considered for this unique material.

In our research group (NEO-Energy) we have developed several lines of work concerning graphene for energy storage. In particular, we have developed supercapacitors based on graphene and on their hybrid materials with polyoxometalates[1-2] and other molecular species as well as with extended phases.[3]

But, in addition to conventional solid-electrode batteries and supercapacitors, we have recently developed an alternative way to store electrical energy with solid electroactive species dispersed in electrolyte liquids. These electroactive nanofluids[4-5] can be used in flow cells broadening the potential applications of conventional Redox Flow Batteries.



In this conference we will present some of our most recent results along this line, in particular how graphene can be put to work for energy storage in a new way by making use of graphene nanofluids, which show a remarkably fast energy storage capability.[6]

References

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