

Graphene-based supercapacitors for flexible and harsh environments application

Original

Graphene-based supercapacitors for flexible and harsh environments application / Zaccagnini, Pietro. - (2021 Mar 02), pp. 1-112.

Availability:

This version is available at: 11583/2875757 since: 2021-03-23T09:48:05Z

Publisher:

Politecnico di Torino

Published

DOI:

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Summary

This work concerns the study and development of new Supercapacitor technologies for applications in flexible and harsh environment. The work is focused on the development of a flexible elastomeric micro-supercapacitor, the study of micro-supercapacitor devices for high temperature applications and finally the study of a technological problem in current collectors in commercial devices where graphene can be also the active material. The first two studies are focused on devices obtained with laser writing conversion techniques, which is a well known process starting from the 60s, and recently demonstrated to be exploited to produce graphene like materials. The latter one consists in the starting study of standard anodes in supercapacitors electrolytic environment with some attempt in reducing the effects of anodic dissolution.