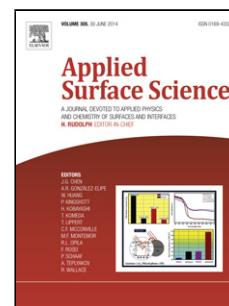


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**In situ one-pot synthesis of graphene-polyaniline nanofiber composite for  
high-performance electrochemical capacitors**

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**Abstract :**

In this work, graphene-polyaniline nanofiber (G/PANI-F) composite is prepared through a new and one-pot method that includes the reduction of graphene oxide (GO) by aniline and then followed by in-situ polymerization. Aniline plays the two roles in this method: as a chemical reducing agent to reduce GO to graphene and as a monomer to prepare polyaniline nanofiber (PANI-F). Fourier transform infrared spectroscopy, X-ray diffraction, Raman spectra, X-ray photoelectron spectroscopy and transmission electron microscope are employed to confirm that GO can be reduced by aniline and PANI-F can be deposited on the surface of graphene. The electrochemical properties of G/PANI-F composite electrode are measured by using cyclic voltammetry, galvanostatic charge-discharge test and electrochemical impedance spectroscopy. The G/PANI-F composite electrode exhibits enhanced specific capacitance of 965 F g<sup>-1</sup> at 0.5 A g<sup>-1</sup> and the capacity retention is 90 % after 2000

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