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Synthesis and electrochemical properties of MIL/Fe_2O_3/PANI/rGO nanocomposite electrode materials for supercacitor applications

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We have successfully synthesized a new nanocomposite made from four component including MIL(100)/Fe_2O_3/PANI/rGO (MFPG) and use them as electrode active materials for supercapacitor fabrication. MIL(101) as a well-known metal-organic frameworks (MOFs), benefits from the valuable properties of MOFs such as high porosity and potential high charge storage abilities [1]. The combination of MIL(100) with nanometal oxide, PANI as a conducting polymer and rGO led to new nanocomposite and it were were characterized by various techniques. The electrochemical properties of the materials were investigated in 1 M KOH as electrolytes. The capacitive properties of MIL-101(Fe) based composite electrodes were found to greatly depend on charge transfer processes, obtained by detailed analyses.

Keywords: Supercapacitor, Electrode material, Metal-Organic Farmeworks, Electrochemistry

References

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