

7th World Nano Conference

June 20-21, 2016 Cape Town, South Africa

High performance super capacitor based on 3D graphene nano composite

S Khamlich^{1,2} and M Maaza^{1,2}

¹University of South Africa, South Africa

²Nano sciences African Network (NANOAFNET), South Africa

Three-dimensional (3D) graphene-based nano composites have attracted significant attention for energy storage and conversion applications. In this study, Simonkolleite nano platelets (SMNPs) were deposited on 3D nickel foam-graphene (NiF-G) by a rapid microwave-assisted hydrothermal method to form NiF-G/SMNPs nano composite electrode material. Field emission scanning electron microscope (FE-SEM) of the NiF-G/SMNPs electrode revealed that the SMNPs were evenly distributed on the surface of NiF-G and interlaced with each other, resulting in a higher electrochemical performance compared to NiF-G and NiF/SMNPs. Utilizing this composite material, a super capacitor with a specific capacitance of 836 F g⁻¹ at a current density of 1 A g⁻¹ has been achieved.

Biography

Dr S. Khamlich is a native of Morocco/North Africa. He is a scientific researcher at iThemba LABS-National Research Foundation, Western Cape, South Africa. He holds a Doctor of Technology (DTech) degree in chemistry from Tshwane University of Technology (TUT). Saleh has about 06 years of experience in the multidisciplinary field of nano science and nanotechnology with focus on energy storage applications and solar energy conversion/modulation.

skhamlich@gmail.com

Notes: