Ni-Mo Nanorod Bundles Grown within Nickel Foam for Excellent Electrochemical Performance

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In this work, nanorod bundles of Ni-Mo-O were synthesized within nickel foam (NF) using a conventional hydrothermal method, which was the further vulcanized to form Ni-Mo-S upon doping sulfur. The NF/Ni-Mo-O and NF/Ni-Mo-S materials were characterized in terms of their morphology, composition and electrochemical properties. NF/Ni-Mo-O showed excellent performance as a supercapacitor. In addition, NF/Ni-Mo-S catalyzed the electrochemical oxidation of glucose in alkaline medium, exhibiting its potential application as a new fuel cell. Their excellent electrochemical performances greatly benefited from the preferred activity of NF/Ni-Mo-O and NF/Ni-Mo-S, efficient electron transfer over the electrode and high conductivity of NF.

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