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(54) Title: A METHOD TO SYNTHESIZE A POROUS CARBON-SULFUR COMPOSITE CATHODE FOR A SODIUM-SULFUR BATTERY

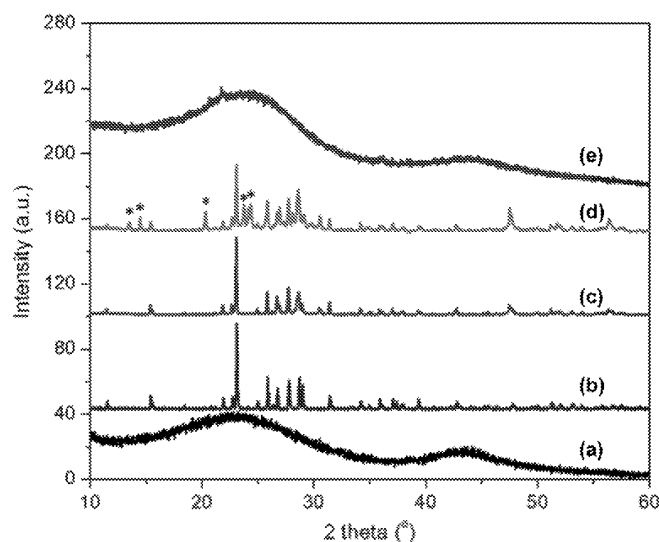


Fig. 1

(57) Abstract: There is provided a method of synthesizing a porous carbon-sulfur composite comprising the step of carbonizing a carbon material having a metal-organic framework (MOF) at a temperature of 800-1000 °C to produce a porous carbon, mixing and heating the porous carbon with sulfur to infuse the sulfur (melt diffusion) into the pores of the porous carbon and removing excess sulfur not infused into the pores or present on the surface of the porous carbon. There is also provided a cathode comprising the porous carbon-sulfur composite and a method of preparing the cathode by mixing with conductive carbon and a polymer binder. The cathode finds use in an electrochemical cell comprising a sodium or lithium anode.

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