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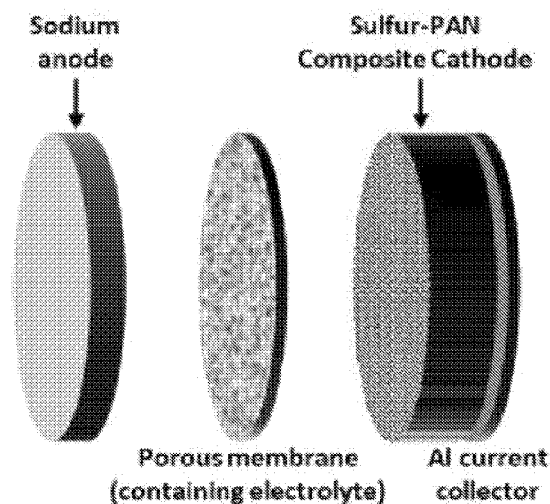
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(54) Title: COMPOSITE FOR SODIUM BATTERIES

Figure 1



(57) Abstract: The present disclosure relates to a carbonized composite comprising a sulfur chain and a conductive network such as polyacrylonitrile (PAN), wherein said sulfur chain is covalently bonded to said conductive network via one or more C-S bonds. The carbonized composite is also substantially free of elemental sulfur, S₈. A method of preparing the carbonized composite is also disclosed. The method comprises grinding elemental sulfur and said conductive network to form a homogeneous mixture, heating the mixture to form a composite and heating the composite under inert conditions under a temperature sufficient to remove bulk or unbonded sulfur, thereby obtaining said conductive network. An electrochemical cell comprising a sodium anode, a cathode comprising said carbonized composite and an electrolyte is also disclosed herein.

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