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FIG. 1

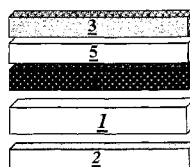
FIG. 1A
(prior art)

FIG. 1B

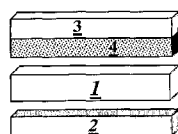


FIG. 1C

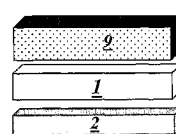
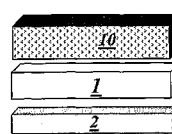


FIG. 1D



(57) Abstract: The present invention refers to an electrode comprised of a first layer which comprises a mesoporous nanostructured hydrophobic material; and a second layer which comprises a mesoporous nanostructured hydrophilic material arranged on the first layer. In a further aspect, the present invention refers to an electrode comprised of a single layer which comprises a mixture of a mesoporous nanostructured hydrophobic material and a mesoporous nanostructured hydrophilic material; or a single layer comprised of a porous nanostructured material wherein the porous nanostructured material comprises metallic nanostructures which are bound to the surface of the porous nanostructured material. The present invention further refers to the manufacture of these electrodes and their use in metal-air batteries, supercapacitors and fuel cells.