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(54) Title: COATED METALLIC PARTICLES, METHODS AND APPLICATIONS

(57) Abstract: New magnetic materials and new metallic particles, new methods of making and using same, for example, to prepare magnetically modified electrodes and fuel cells, and coated metallic particles in general. The present invention discloses methods of preparation of cheaper and more uniformly sized magnetic and metallic microparticles formed from the exemplary materials magnetite, nickel, samarium cobalt and neodymium iron boron. In addition, the present invention discloses methodology for preparation and use of coated magnetic and metallic microparticles, in particular, exemplary siloxyl coating of magnetic particles, metallic particles, and magnetic and metallic microparticles with an exemplary silane, 3-aminopropyltrimethoxysilane, that is cross linked thereon. In addition, methods and results are described for preparing and using larger siloxyl coated samarium cobalt milliparticles. Coated magnetic milliparticles and magnetic microparticles are useful as component of composites that are applied to electrodes to alter electrochemical fluxes across those electrodes, as well as to alter chemical reactions on surfaces of those electrodes, when magnetically susceptible reactions occur there.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/19368

A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Y	US 4 680 140 A (KAGEYAMA YOSHITERU) 14 July 1987 (1987-07-14) column 4, line 6 - line 48 ---	1-3
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A	US 5 786 040 A (LEDDY JOHNA ET AL) 28 July 1998 (1998-07-28) cited in the application column 28, line 30 - column 30, line 41; claims 1,6,7 ---	1-3
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☒ Patent family members are listed in annex.

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