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(54) Title: COMPOSITE MATERIALS AND THEIR USE IN ELECTROCHEMICAL APPLICATIONS AND ELECTRODE
COATINGS MADE THEREFROM

(57) Abstract: The present invention relates to composite materials having an elemental composition consisting of 30 to 70 wt.-% nickel, 5 to 20 wt.-% molybdenum, 2 to 10 wt.-% chromium, 2 to 10 wt.-% X, wherein X represents one or more elements selected from the group cerium, cobalt, copper, gadolinium, lanthanum, lithium, magnesium, niobium, praseodymium, samarium, scandium, strontium, tantalum, titanium, tungsten, ytterbium, yttrium and mixtures thereof, and optionally up to 30 wt.-% oxygen, wherein the balance of the composite metal and metal oxide material is made up of aluminium or zinc or mixtures thereof and inevitable impurities. The invention further relates to the use of the composite materials of the invention in the production of electrochemical catalyst systems, electrodes for energy storage or energy conversion applications. Finally, the present invention relates to electrodes comprising a substrate coated with the composite materials according to the invention.

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