CLAIMS

1. A ~~Method for preparing a supported metal catalyst~~process for the selective hydrogenation of ~~unsaturated hydrocarbons, characterized in~~hydrocarbon cuts containing alkenes and a substantial amount of dienes and / or alkynes having 2 to 12 carbon atoms, using a supported metal catalyst prepared by a method that ~~it~~ comprises the following steps:

a) electroplating a layer of nickel on a metallic support, and then

b) electroplating a top layer of platinum and/or palladium.

2. A ~~method~~ process according to claim 1, characterized in that the support consists of one or more metals selected from iron, chromium, nickel, copper, molybdenum, aluminum, zinc, and alloys of these metals.

3. A ~~Method~~ process according to the preceding claim, characterized in that the support contains at least 50% by weight of iron and / or iron alloy, and preferably the support is made of stainless steel.

4. A ~~method~~ process according to any one of the preceding claims, characterized in that the electroplating of step a) is carried out using an aqueous solution of one or more salts selected from nickel chloride ($NiCl_2$) , nickel sulfate ($NiSO_4$) and nickel sulfamate $Ni(NH_2SO_3)_2$, and preferably from an aqueous solution of nickel chloride ($NiCl_2$).

5. A ~~method~~ process according to any one of the preceding claims, characterized in that the thickness of the nickel layer ranges from 0.01 to 10 µm, and preferably from 0.05 to 2 µm.

6. A ~~method~~ process according to any one of the preceding claims, characterized in that the electroplating in step b) is carried out using an aqueous solution containing platinum and/or palladium, preferably under the form of salt(s) and/or complexe(s), preferably chosen from:

- The salts and complexes of platinum, including halogenated, amino or amino-nitro salts and complexes of platinum, and in particular: $Pt(NH_3)_2(NO_2)_2$, $Pt(NH_3)_4(NO_2)_2$, $Pt(NH_3)_4Cl_2$,

- The salts and complexes of palladium, including halogenated, amino or amino-nitro salts and complexes of palladium, and preferably palladium tetramine and palladium ethylenediamine salts, and in particular $Pd(NH_3)_2(NO_2)_2$, $Pd(NH_3)_4(NO_2)_2$, $Pd(NH_3)_4Cl_2$.

and preferably using an aqueous solution of one or more salts or complexes of palladium, and particularly preferably using an aqueous solution of palladium tetramine salt.

7. A ~~method~~ process according to any one of the preceding claims, characterized in that step b) consists in electroplating a layer of palladium.

8. A ~~method~~ process according to any one of the preceding claims, characterized in that the thickness of the layer of platinum and/or palladium ranges from 0.01 to 1 μm and preferably from 0.02 to 0.1 μm.

9. A ~~method~~ process according to any one of the preceding claims, characterized in that the electroplating of platinum and/or palladium according to step b) is performed directly on top of the nickel layer deposited in step a).

10. A ~~method~~ process according to any one of claims 1 to 8, characterized in that it comprises, between step a) and step b), an intermediate step e) consisting of electroplating a layer of one or more additional metal(s) that is (are) different from nickel and platinum group metals, and that is (are) preferably selected from gold, silver, zinc, manganese and copper.

11. ~~Method~~ A process according to the preceding claim, characterized in that said one or more additional metal(s) is (are) selected from colored metals, preferably from gold and copper, and more preferably copper.

~~12. Supported metal catalyst, obtainable by the method as defined in any one of the preceding claims.~~

~~13. A process for hydrogenating unsaturated hydrocarbons, preferably for the selective hydrogenation of hydrocarbon cuts containing alkenes and a substantial amount of dienes and / or alkynes having 2 to 12 carbon atoms carbon, using the catalyst of claim 12.~~

~~14~~12. A process according to any one of the preceding claims for the selective hydrogenation of light olefins, preferably for the selective hydrogenation of acetylene to ethylene~~, using the catalyst of claim 12~~.