

isomerization catalyst by contacting an alkali metal with catalyst support particles in a fluidized bed. After the alkali metal is uniformly dispersed on the support particles, oxygen is added to the fluidizing gas to oxidize a portion of the alkali metal.

**5625104**

**ALKALI METAL ION EXCHANGED  
SELECTIVATED ZEOLITE  
CATALYST**

Beck Jeffrey S; Stern David L Princeton, NJ, UNITED STATES assigned to Mobil Oil Corporation

There is provided a zeolite catalyst, which is first selectivated with a siliceous material and then treated with an aqueous solution comprising alkali metal ions under ion exchange conditions.

**5626826**

**ZIRCONIUM/CERIUM MIXED OXIDE  
CATALYST/CATALYST SUPPORT  
COMPOSITIONS HAVING  
HIGH/STABLE SPECIFIC SURFACES**

Chopin Thierry; Vilmin Gabriel Saint Denis, FRANCE assigned to Rhone-Poulenc Chimie

Zirconium/cerium mixed oxides (optionally including thermally stabilizing dopant values), comprising solid solutions thereof, having contents of zirconium of up to 99% by weight, and having high specific surface areas, are well suited as catalysts and/or catalyst supports, notably for the treatment/conversion of vehicular exhaust gases; such ZrO<sub>2</sub>/CeO<sub>2</sub> mixed oxides are conveniently prepared by (i) intimately admixing a zirconium sol with a cerium sol, the ratio  $r$  of the mean diameter  $r_1$  of the particles of the zirconium sol to the diameter  $r_2$  of the particles of the cerium sol being

at least 5, (ii) adding a precipitating amount of a base thereto, (iii) recovering the precipitate thus formed, and (iv) calcining the recovered precipitate.

**5629257**

**SOLID SUPERACID CATALYSTS  
COMPRISING PLATINUM METAL**

Umansky Benjamin S; Bhide Manoj; Hsu Chao-Yang; Huang Chen-Sh Wilmington, DE, UNITED STATES assigned to Sun Company Inc (R&M)

A sulfated solid catalyst is provided which comprises (1) oxide or hydroxide of Group III or Group IV element, e.g. zirconium, and (2) a first metal comprising a metal or combination of metals selected from the group consisting of platinum, palladium, nickel, platinum and rhenium, and platinum and tin. The catalyst may further comprise (3) a second metal selected from the group consisting of Group VIII elements, e.g. iron. One embodiment of the invention further comprises (4) a third metal selected from the group consisting of Group V, VI and VII elements, e.g. manganese. The catalyst of the invention is useful for the isomerization of normal alkanes having 4 to 40 carbon atoms per molecule, for the naphtha upgrading of a hydrocarbon feedstock and for the hydrocracking of a hydrocarbon feedstock.

**5629474**

**PRODUCTION OF A SENSOR FOR  
CARBON MONOXIDE OR WATER  
VAPOR INCLUDING A SEMI  
CONDUCTOR METALLIC OXIDE,  
CATALYST, AND RHEOLOGICAL  
AGENT**

Williams Edward W Keele, UNITED KINGDOM assigned to Keele University