

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 ZrO₂/CeO₂ 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

PCT No. PCT/GB94/00658 Sec. 371 Date Nov. 2, 1995 Sec. 102(e) Date Nov. 2, 1995 PCT Filed Mar. 29, 1994 PCT Pub. No. WO94/23289 PCT Pub. Date Oct. 13, 1994. A sensor to detect gases and vapors, particularly carbon monoxide and water vapor, at relatively low concentrations includes a substrate having a layer on a face of the substrate. The layer comprises a semi conductor metallic oxide (such as stannic oxide), a catalyst (such as platinum black), and a rheological agent (such as kieselguhr or sepiolite). The rheological agent induces porosity into the surface of the layer. The rheological agent affects the mixing and processing of the layer, and aids binding, resulting in a sensor with greater sensitivity and faster response.

METHANE AND SYNGAS CATALYSIS

5599510

CATALYTIC WALL REACTORS AND USE OF CATALYTIC WALL REACTORS FOR METHANE COUPLING AND HYDROCARBON CRACKING REACTIONS

Kaminsky Mark P; Huff George A; Calamur Narasimha; Spangler Michael J Winfield, IL, UNITED STATES assigned to Amoco Corporation

Dual-flow chemical reactor cores containing catalytic heat-transfer walls comprising both a gas-impervious material and a suitable catalyst which allows oxidative coupling of methane into higher hydrocarbons, dual-flow reactors having these catalytic heat-transfer walls to control and facilitate simultaneously coupling of methane and cracking of hydrocarbon compounds in separate gas streams, and chemical processes which combine coupling of methane and cracking of hydrocarbon compounds to make olefins in a dual-flow reactor having catalytic heat-transfer walls.

5599517

CATALYST FOR STEAM REFORMING OF HYDROCARBONS

Ul-Haque Israr; Trimm David L Baulkham Hills, AUSTRALIA assigned to Haldor Tops

A process for the production of hydrogen and/or carbon monoxide rich gases by steam reforming of a hydrocarbon feedstock, the process comprising the step of contacting the hydrocarbon feedstock and steam with a catalyst comprising nickel as a main catalytic component, a refractory carrier material for the nickel, and at least one catalytic element for the steam reforming of the hydrocarbon feedstock, the element being selected from the group consisting of germanium, tin, lead, arsenic, antimony and bismuth.

5609845

CATALYTIC PRODUCTION OF HYDROGEN FROM HYDROGEN SULFIDE AND CARBON MONOXIDE

Cimini Ronald J; Marler David O; McCarthy Stephen; McVeigh Harry A; Teitman Gerald J Sewell, NJ, UNITED STATES assigned to Mobil Oil Corporation

There is provided a process for the catalytic production of hydrogen from the reaction of hydrogen sulfide and carbon monoxide with the elimination of the carbonyl sulfide and/or sulfur dioxide by-products. The carbonyl sulfide and the sulfur dioxide are combusted or reacted in one or more reaction steps with each other, oxygen and/or hydrogen sulfide to produce carbon dioxide, water, sulfur or sulfuric acid or a combination of these.