

NEW PATENTS

METALS AND ALLOYS

Nickel Base Superalloy

UNITED TECHNOLOGIES CORP.

European Appl. 208,645A

A high strength Ni base superalloy contains Ru, Rh, Pd, Os, Ir, Pt, Re, plus many other metals. The superalloy is useful for cast single crystal articles such as gas turbine engine blades and vanes.

New Rhodium Alloys

STANDARD OIL CO. (OHIO) *European Appl.* 209,264A

Novel amorphous Rh alloys may contain B, P, As or mixtures; or Ir, Pd, Ru, Ti, Zr, Nb, Ta, Y, Hf or mixtures. The alloys are useful as highly corrosion resistant halogen-evolution anodes, with high selectivity to Cl₂, or can be used as H₂ permeable membranes.

Nickel-Palladium-Beryllium Alloy

I.B.M. CORP.

U.S. Patent 4,636,251

An alloy consisting of Ni, Pd and Be is useful as a base material for electrical contacts, especially electrodes and lead frames for packaging electronic components. No barrier layer is required to prevent diffusion, and the alloy is less expensive than conventional materials.

Thin Film Membrane

UOP INC.

U.S. Patent 4,636,314

A thin film membrane consists of electrically conductive particles, typically Pt, Pd or a Pt/Ni alloy, deposited on a support, and dispersed in a single phase blend of a heteropoly acid or salt and a compatible polymer. The membrane is strong, transparent, and useful for the separation of gases, especially H₂, in sensors and solid state thin film electrolytes.

Thick Film Conductor Composition

DU PONT DE NEMOURS CO. *U.S. Patent* 4,636,332

A thick film conductor composition comprises a fine particle mixture of a noble metal alloy, a binder, and a glass bleed-out inhibitor which may contain Ru, Ir, Rh or Pt. The composition has good solderability and adhesion, and has a short firing time.

Photographic Material Containing Rhodium

FUJI PHOTO FILM K.K.

Japanese Publ. Appl. 61/238,049

A Ag halide photographic material contains Rh in the halide particles in the emulsion layer, and a hydrazine derivative in the emulsion layer or hydrophilic colloid layer. The product can be treated under a bright safe light without inhibiting curing, and provides superhard photographic characteristics.

Light Transmitting Conductive Film

SUMITOMO ELEC. IND. K.K.

Japanese Publ. Appl. 61/253,722

A light transmitting conductive film having superior light transmittance and conductivity is produced by forming a film of Pt, Pd, Ir, Au, Ag on a metallic backed transparent substrate, and irradiating with ionising radiation.

Photomagnetic Recording Media

MITSUBISHI CHEM. IND. K.K.

Japanese Publ. Appl. 61/258,387

A photomagnetic recording medium consists of a Pt-Mn-Sn thin film which is crystallographically stable on temperature rise and has good stability to oxidation and chemical reaction.

Platinum or Palladium Colloid

SEIKEN KAGAKU K.K.

Japanese Publ. Appl. 61/272,026

A high purity Pt or Pd colloid is produced by mixing H₂ and a sprayed aqua regia solution of Pt or Pd, burning in a flame, and blowing into a liquid medium. The colloids are useful as oxidation or reduction catalysts, or as a drug for detoxification/cell activation.

Metallising Composition

MATSUSHITA ELEC. IND. K.K.

Japanese Publ. Appls. 61/289,691/292,394

A metallising composition contains an inorganic component with at least one of Pt, Pd and Ni powders, Cu oxide powder, optionally Mn oxide powder, vehicles and a solvent composition. The metallising composition is used as high density packaging boards for mutual wiring of mounted ICs, LSIs, etc.

CHEMICAL COMPOUNDS

Noble Metal-Surfactant Adducts

AGENCY OF IND. SCI. TECH.

Japanese Publ. Appl. 61/243,091

An anionic noble metal complex of at least one metal of Pt, Ru, Rh, Pd, Ir, Au and Ag is reacted with a water-soluble cationic surfactant to form a precipitated noble metal-surfactant adduct. Such adducts are stable, can be stored for a long time and are useful for preparing supported noble metal catalysts.

New Palladium or Platinum Containing Complexes

BASF A.G.

German Offen. 3,505,750

New camphor dithiolene complexes of Pt, Pd and Ni are claimed for use as stabilisers, antioxidants, corrosion inhibitors, catalysts or in optical recording media. They are readily available and readily soluble.

Complex Ruthenium Salts

HETEROORG. CPDS. *Russian Patent* 999,523

Salts of bis-arene Ru cations of formula $(C_6H_4RuR)^{2+}$, where R is the arene group, are produced by reacting the arene with benzene Ru dichloride dimer. The products are used as starting materials for the preparation of catalysts.

ELECTROCHEMISTRY

Electrochlorinator

R. GREAVES & SONS LTD. *British Appl.* 2,176,497A

An electrochlorinator has an inner tubular anode of Ti coated with Pt and Ir, which is concentrically surrounded by a tubular cathode. The electrochlorinator sterilises sea water by forming Na hypochlorite.

Cathode for Electrolysis Cell

ATOCEM *European Appl.* 209,427A

A cathode consists of an electrically conducting substrate coated with an oxide of a platinum group metal, and optionally other metal oxides. For example, it may consist of layers of RuO_2 , associated with one or more layers of TiO_2 and/or ZrO_2 . The cathode is used for electrolysis of water or halides.

Gas Diffusion Electrode

ASAHI GLASS K.K. *Japanese Publ. Appl.* 61/266,591

A gas diffusion electrode has a catalyst of Pt, Pd, Ag, Raney Ag or a spinel series oxide, and is produced by removing C powder from one side of a porous electrode sheet consisting of the catalyst, C powder and a F-containing polymer. The electrode can be used in a H_2 - O_2 fuel cell or gas sensor.

Electrode Material Production

TOYO SODA MFG. K.K.

Japanese Publ. Appl. 61/281,889

An amorphous alloy containing Ta, one or more of Ru, Rh, Pd, Ir and Pt, Ni and optionally other metals is used to produce highly corrosion resistant and active electrodes for electrolysis of acidic solutions.

Platinum Anode for Plating

SUMITOMO METAL IND. K.K.

Japanese Publ. Appl. 61/288,093

An anode for electrolytic plating consists of Pt coils placed next to an opening in a masking plate in such a way that the anode coils do not interfere with the plating liquid stream.

Platinum Alloy Electrode

V.E.B. MANSFELD-KOMB. PIECK

East German Patent 238,706

The electrode consists of Pt or a Pt-Rh alloy on a Ti, Ta, Nb or Zr substrate. It is especially useful as an anode in aqueous solution at which Cl_2 and O_2 are evolved; it is stable, has high electrical conductivity and is simple and inexpensive to manufacture.

ELECTRODEPOSITION AND SURFACE COATINGS

Palladium Alloy Electrodeposition

LEARONAL INC.

U.S. Patent 4,628,165

A Pd alloy is coated upon a substrate by dual phase electrodeposition of Pd and Ni or Co, followed by a thicker layer of Pd-Ag, to produce an electrical contact claimed to have increased ductility, reduced porosity and reduced tendency for cracking of the dual layer.

High Adherence Metal Conductor Films

NISSAN CHEM. IND. K.K.

Japanese Publ. Appl. 61/179,875

Metal conductor films and metal conductor circuits of printed circuit boards are formed by heating a Pd containing polymer film to deposit Pd on a substrate, followed by electroless plating. The metal conductor films so formed are highly adherent.

Platinum Group Metal Alloy Coating

MATSUSHITA ELEC. IND. K.K.

Japanese Publ. Appl. 61/281,028/29

A surface coating of a platinum group metal alloy containing additional metals such as Zr, Ti, Hf, or their oxides, is used in press-shaping moulds for the production of optical glass elements. The thin film exhibits improved wear resistance, and the element does not need polishing after press-shaping.

Platinum Alloy Plating Bath

YASUKAWA ELECTRIC MFG. K.K.

Japanese Publ. Appl. 61/288,090

A Ag-Zn-Pt alloy plating bath contains cyanide and chloride compounds and produces a plating layer with excellent resistance to sulphiding, and which is suitable for the production of electrical contacts, etc.

Palladium-Nickel Plating Bath

KOJIMA KAGAKU YAKUH

Japanese Publ. Appl. 61/288,091

A Pd-Ni alloy plating bath with excellent stability is prepared by blowing gaseous sulphurous acid into Pd sulphate solution, then adding NH_3 and a Ni salt. The Pd-Ni alloy plating layer obtained has excellent white brightness and corrosion resistance.

LABORATORY APPARATUS AND TECHNIQUE

Air Flow Measurement

POTTERTON INT. LTD.

British Appl. 2,176,292A

A heated filament of Pt-Ni or nichrome wire, having approximately linear change of resistance with temperature, is used in an air flow measurement apparatus for an anemometer. This type of filament avoids the need for a second non-heated temperature-dependent resistance.

Surface Ion Sensor

UKR TOWNS SERVICING

World Patent Appl. 87/276A

An improved surface ionisation sensor for a halogen leak detector consists of a Pt anode wound spirally around a central cathode wire, inside a tubular holder of white sapphire. The sensor has a longer life, less thermal inertia, and improved sensitivity.

Electrokinetic Measurements of Fibrous Material

FORSCHUNGSANWENDUNG

World Patent Appl. 87/285A

Perforated Pd electrodes are included in a unit for simply and exactly measuring the electrokinetic potential of fibrous materials. Information about washability and contamination resistance of the material is also provided.

Palladium Alloy Hydrogen Purifier

ULVAC CORP. *Japanese Publ. Appls.* 61/157,323/26/27

A stable, high purity H₂ purifier consists of a Pd alloy tubular membrane welded to a stainless steel body, etc., which allows only H₂ to pass through when heated.

Hydrogen Detecting Element

NOMI BOSAI KOGYO K.K.

Japanese Publ. Appl. 61/223,642

A stannic oxide based gas detecting element containing Pt and Sb is treated in a silane atmosphere to produce a H₂ gas detecting element, which can be used selectively, at relatively low temperature, and which has an improved response time of 100–150s.

Platinum Alloy Gas Sensor

SANEI SEIKO K.K.

Japanese Publ. Appls. 61/246,659/60

A catalytic combustion type gas sensor has Pt alloy coils, for example Pt-Ni or Pt-Rh, which may be coated by Pd oxide or Cu oxide layers, depending on the application. It can be used to detect CH₄ or CO with high sensitivity, and has high durability (CH₄) and low cost (CO).

Flame Ionisation Detector

HORIBA LTD.

Japanese Publ. Appl. 61/265,562

A heated combustion catalyst such as Pt is present in the gas blowing nozzle and/or passage leading to the combustion chamber of a flame ionisation detector. The Pt can be linear, mesh, or fibrous-shaped.

Dewing Inhibitor Sensor

NIPPON MINING K.K.

Japanese Publ. Appl. 61/269,054

A dewing inhibitor sensor includes a humidity sensing element with a parallel external short circuit, preferably made up of a RuO₂, CuO₂ and NiO₂ paste. The sensor has definite switching characteristics and is stable.

Ruthenium (Oxide) Powder Production

SHINGIJUTSU KAIHATSU

Japanese Publ. Appl. 61/270,222

Ru oxide powder and/or Ru metal powder are produced by reacting a Ru compound—preferably a halide—with an alkali metal alkoxide, and hydrolysing the resulting product. Using this method fine powders of 1 μm diameter can be produced for hybrid integrated circuits, without high energy grinding.

JOINING

Activating Layer for Welding

KERNFORSCHUNGS JULICH *European Appl.* 209,672A

A thin activating layer of maximum thickness 0.1–1 μm comprises at least one carbide and/or silicide forming element, which may consist of Pd, Pt, Ag, Au and other metals. The layer is used to coat fitting surface(s) of SiC parts to be bonded together by welding. Stable, gas-tight welding seams are obtained, which are resistant to corrosion, oxidation and temperature changes.

Brazing Metallising Composition

KYOCERA CORP. *Japanese Publ. Appl.* 61/251,590

A metallising composition comprises W, Mo and/or Mn and at least one of Ru, Rh and Ir, or an alloy of Ru, Rh or Ir. It is useful for the formation of a metallised metal layer for brazing an external lead terminal or integrated circuit element onto a ceramic body. High bonding strength is realised.

Brazing Filler Material for Ceramics

TANAKA KIKINZOKU KOGYO

Japanese Publ. Appls.

61/279,395/283,491/92/286,088

A brazing filler material consists of a Ag and/or Cu alloy containing Pd, Ti and/or Zr, and possibly Ga. The filler is suitable for directly joining ceramics to ceramics, or to metals. The brazing time is decreased, and good brazed joints can be obtained.

Brazing Filler Material

NIPPON DENSO K.K.

Japanese Publ. Appl. 61/291,939

A metal composition containing at least one of Pt, Pd, Rh, Ir, Ru and Os, and at least one of Cr, Mn, Fe, Co, Ni and Cu, is effective as a brazing filler for joining non-oxide ceramics and metal, or as a metallising metal, in joining ceramic turbo-rotors and shafts.

HETEROGENEOUS CATALYSIS

Ruthenium Hydrogenation Catalyst

RHONE-POULENC CHIMI *European Appl.* 192,587A

A catalyst consisting of a Ru compound/SiO₂ gives good selectivity for the vapour phase hydrogenation of acetic acid to produce ethanol and/or ethyl acetate.

Waste Gas Catalyst

HITACHI K.K. *European Appl.* 208,434A

A catalyst containing at least one of Pt, Pd or Rh, Ti oxide, and at least one other metal oxide, is used to remove NO_x and CO from exhaust gas in the presence of steam and NH₃. The exhaust gas may be from power plant boilers, gas turbines, nitric acid plants.

Acetal Preparation

NATIONAL DISTILLERS CORP. *European Appl.* 210,453A

A noble metal selected from Rh, Pd or Pt, or preferably Ru, or a metal halide, preferably RuCl₃, is used to accelerate acetal preparation from an allylic ether and an organic hydroxy compound under anhydrous conditions.

Palladium Oxidation Catalyst

STAMICARBON (DSM SUBS.) *European Appl.* 210,705A

An improved catalyst for the gas phase oxidation of alkene(s) and cycloalkene(s) to ketones or aldehydes, in the presence of H₂O and O₂, consists of a Pd compound and a monolayer dispersion of V supported on γ -Al₂O₃. The catalyst does not lose its activity by clogging with V₂O₅.

Platinum Re-ignition Coating

WILLIAMS RES. CORP. *U.S. Patent* 4,603,547

Improved construction of a gas turbine combustion chamber includes a catalytic surface coating containing a noble metal, such as Pt, covering about 90% of the area. This facilitates relighting of the air:fuel mixture reliably and economically, minimising failure.

Palladium Hydrogenation Catalyst

PHILLIPS PETROLEUM CO. *U.S. Patent* 4,605,797

Selective hydrogenation of acetylenic compound with up to 30°C, to a cis-olefinic compound uses a catalyst of Pd supported on CaCO₃, Pb acetate, and an aromatic amine oxide. High selectivities are obtained, without costly low-temperature operation.

Platinum Zeolite Reforming Catalyst

CHEVRON RESEARCH CO. *U.S. Patent* 4,627,909

A Pt/zeolite catalyst is used during the second stage of an improved low pressure hydrocarbon reforming process in a dual recycle pressure-step reformer which uses a bifunctional catalyst containing one or more platinum group metals/Al₂O₃ in the first stage. The catalyst is protected by a desulphurisation stage in the process.

Sulphur Oxide Removal

PHILLIPS PETROLEUM CO. *U.S. Patent* 4,636,371

A catalyst containing Zn, TiO₂ and promoters which can be Ru, Pt, Pd, Rh, or Re or their compounds or mixtures, is used for the removal of S oxide from a gaseous stream, especially tail gas from S manufacture, in the presence of a H donor. S oxide is converted to H₂S and absorbed.

Catalytic Combustion Apparatus

BABCOCK-HITACHI K.K. *Japanese Publ. Appl.* 61/168,725

A catalytic combustion apparatus contains a Pd honeycomb catalyst and has a peep-window of sapphire glass to monitor temperature.

Fixed Biocatalyst Preparation

MATSUSHITA ELEC. WORKS *Japanese Publ. Appl.* 61/187,792

The Pt support on which a crosslinked albumin film is formed is treated with aldehyde, to form aldehyde groups, which are used to fix the catalyst. A high activity biocatalyst can be prepared reliably.

Waste Gas Purification Catalyst

NIPPON SHOKUBAI KAGAKU *Japanese Publ. Appl.* 61/222,541

A catalyst containing Pd, Rh or Pt together with a V compound and a double oxide of P and Al, supported on a refractory structure, shows improved durability for purification of waste gas containing C.

Aldehyde Hydrogenation Catalyst

AGENCY OF IND. SCI. TECH. *Japanese Publ. Appls.* 61/230,738/741

Catalysts containing Pd, Fe and/or Mo, or comprising Ir, Fe and optionally Rh, show high conversion activity for aldehyde hydrogenation to alcohols.

Gamma-Ray Shield

TORAY SILICONE K.K. *Japanese Publ. Appls.* 61/240,197/241,699

A Pt catalyst with an organopolysiloxane, an organohydrogen polysiloxane fluid, a metal fine powder and organopolysiloxane raw rubber and/or silica powder, or C fine powder, are the components of a composition having excellent γ -ray shielding performance. The product can be used effectively in atomic power stations and flame retardancy.

Catalytic Combustion System

KIKAI SYST. SHINKO K. *Japanese Publ. Appls.* 61/252,408/9

A catalytic combustion system has an active catalyst layer containing Pd and Pt, or Pd, Pt and Ni dispersed on a monolithic support coated with a stabilised oxide layer. Methane-based fuels can be completely burned to give high temperature combustion gases, without NO_x, CO or unburned HC.

Catalyst Indicating Deterioration during Combustion

DODENSEI MUKIKAGO *Japanese Publ. Appl.* 61/274,748

A catalyst consisting of a complex oxide, a Sr containing oxide such as SrTiO₃, and/or Pd or Rh, is sprayed on an insulating refractory substrate, and is used to indicate deterioration during combustion by an abrupt increase in its resistance.

Hydrocarbon Isomerisation Catalyst

KEISHITSU RYUBUN SH.

Japanese Publ. Appl. 61/280,440

The catalyst is obtained by calcining a mixture of a S and halogen containing reagent, one of Pt, Ru, Rh, Pd, Os, Ir and Ni, etc., and a carrier of a Group IV metal hydroxide or oxide and/or a Group III metal hydroxide or oxide. The catalyst has a long life and gives a high isomerisation rate for linear paraffins and some cyclic hydrocarbons.

Palladium Oxidation Catalyst

NIKKI UNIV. K.K. *Japanese Publ. Appl.* 61/287,425

The catalytic oxidation of waste gas containing organic solvents and O₂ is achieved by using supported Pd catalysts operating at high temperature. Pd catalysts have higher resistance to heat and catalyst poisons than Pt catalysts; so the waste gas, such as toluene, can be treated at high temperature without air dilution.

Exhaust Catalyst

NGK INSULATORS K.K.

Japanese Publ. Appl. 62/4,441

Catalytic components such as Pt, Pd, Rh, rare earth metals or others, are deposited on a cordierite honeycomb structure which has been treated with acid and heated. The catalyst is used as an oxidation or three-way catalyst for the purification of automobile exhaust, or as an industrial deodorising catalyst. It has improved resistance to thermal shock.

Carbon Monoxide Oxidation Catalyst

NIKKI UNIVERSAL K.K.

Japanese Publ. Appl. 62/14,944

A catalyst which can oxidise CO at room temperature under atmospheric pressure consists of Pd, and one or more of Fe, Mn and Ce, supported on Al₂O₃. It is used for ventilation of combustion heaters, highway tunnels, chemical plants, etc., and also in gas masks.

Organosiloxane Preparation

WACKER CHEMIE G.m.b.H. *German Offen.* 3,518,605

A metallic Pd, Ru or Rh catalyst or one of these metals as a complex or comopound, is used to catalyse the preparation of organosiloxane compounds containing a halogen bonded to Si, by the reaction of a siloxane and allyl halide. Products are obtained rapidly with high yields using relatively small amounts of catalyst.

Exhaust Gas Purifier

R. EIGLMEIER

German Offen. 3,528,107

Perforated steel discs on an axial support are coated with a noble metal and glass catalyst; a first and second set of discs having a coating of Rh-glass and Pt-glass, respectively. The discs have a working temperature of 200°C. The purifier is used to react with CO, NO_x and hydrocarbons in exhaust gas from a vehicle using lead-free petrol.

Olefin Hydrogenation Catalyst

INST. FRANCAIS DU PETROLE

German Offen. 3,623,777

An active catalyst consisting of supported noble metals contains first metal(s) from Pd, Rh, Ir and Pt, and different second metal(s) selected from Au and Pt. It is useful for hydrogenating olefins in ethers for chemical and pharmaceutical use, it is active in the presence of S, and is used to increase the octane number of unleaded motor fuel.

HOMOGENEOUS CATALYSIS

Rhodium Hydroformylation Catalyst

EXXON CHEM. PATENTS *European Appl.* 195,656A

The hydroformylation of an internal olefin to the corresponding aldehyde uses a liquid Rh tri-organophosphine catalyst system, CO, H₂, and a sterically hindered tri-cycloalkylphosphine. Rapid reaction rates are achieved compared with conventional Rh systems; also high selectivity, catalyst stability, and negligible degradation are obtained.

Carboxylic Acid Preparation

HOECHST A.G.

European Appl. 206,054A

Carboxylic acids are prepared by Pt catalysed oxidation of primary alcohols in a mixture of water and glycol ether as solubiliser. The method enables almost insoluble primary alcohols to be oxidised easily and economically.

Platinum Catalyst for Silicone Foams

DOW CORNING CORP.

U.S. Patent 4,613,630

Water blown, low density, open cell silicone foams are produced by mixing a hydroxy or vinyl end blocked polydiorganosiloxane, a Si hydride compound, water, a Pt catalyst and optionally a profoamer. The low cost elastomeric foam produced is useful for cushioning and sealing applications.

Palladium-Phosphine or -Arsine Catalyst

TEXACO INC.

U.S. Patent 4,629,807

Pd-phosphine or Pd-arsine catalysts are used for the preparation of aliphatic dicarboxylic acids and ester(s) from alpha, omega-diene(s) and CO. The catalysts afford improved yields of these acids, especially the desired linear di-acids, which are corrosion inhibitors for antifreeze. Improved Pd catalyst recovery is possible, and temperature staging allowed.

Vinyl Phosphonic Acid Preparation

DAIHACHI KAGAKU KOGYO K.K.

Japanese Publ. Appl. 61/275,288

A catalyst containing a Pd halide and/or Pd acetate and at least one tertiary phosphine compound is used in the preparation of vinyl phosphonic acid from a P diester and an olefinic halide. The catalyst can be used repeatedly without treatment, is inexpensive, and gives a high purity product in high yield.

Rhodium Carbonylation Catalyst

A.S. U.S.S.R. CHEM. PHYS. *Russian Patent* 1,204,251
A catalyst system of enhanced stability for the carbonylation of methanol to acetic acid includes Rh triiodo-tris(dimethyl-sulphide), HI, CH₃I, water, acetic acid and methanol.

FUEL CELLS

Electrocatalyst for Fuel Cells

HITACHI K.K. *Japanese Publ. Appl.* 61/274,747
Catalysts consisting of noble metal particles, preferably Pt, highly dispersed on the surface of conductive particles, preferably C, are prepared by the reduction of complexes of noble metal ions in aqueous solution. When used for air electrodes in fuel cells they give higher initial output and long life.

ELECTRICAL AND ELECTRONIC ENGINEERING

Platinum Cathode for Laser

RAYTHEON CO. *British Appl.* 2,175,438A
The electrode assembly for a CO₂ waveguide laser comprises an anode, and a cathode with a portion preferably Pt with a small addition of Rh for emitting the electrical discharge towards the anode. Electrical discharge is constrained directly between electrodes.

Conductive Cable for Underwater and Space Application

MATERIAL CONCEPTS *U.S. Patent* 4,634,805
A conductive cable consists of polyaramid rows of parallel, untwisted filaments coated preferably with Pd, Ni, Au, Cu or Co. A second metal coating of Pt, Rh, Ru, Ag, In or other metals may be present. The cable has good strength and conductivity, and is used in underwater and space tether applications.

MEDICAL USES

Antimicrobial Noble Metal Layer

BECTON DICKINSON CO. *European Appl.* 206,024A
Microorganism growth on the surface of a medical device, such as a catheter, is inhibited by layers of Pt, Au or Ag, and Ag or Al in contact on its surface. The device is preferably used as part of a urinary catheter, and reduces the incidence of infection.

Biochemical Sensor

UNIV. OF CALIFORNIA *European Appl.* 206,531A
An electrochemical cell sensor capable of being implanted into an animal body has an electrode in a housing coated with biocompatible material. The housing is a hollow needle of Pt or stainless steel. The sensor is used to determine the concentration of certain biochemicals—glucose, alcohol or uric acid.

Microorganism-Propagation Inhibiting Sheet

UNITIKA K.K. *Japanese Publ. Appl.* 61/182,943
A metallic thin film of Pd, Pt, Au or Ag is formed in vacuo, on a sheet-form material, by vapour deposition. This article may be in the form of paper, fabric, film, etc., and is used as a microorganism-propagation inhibiting sheet on clothes, food packaging, filters, health and sanitary materials, etc.

Platinum Anti-Tumour Agent

TANABE SEIYAKU K.K. *Japanese Publ. Appl.* 61/249,993
N-substituted aspartato-trans-levo-diamino cyclohexyl Pt complexes are useful as anti-tumour agents effective in the treatment of ovarian, prostate and mammary cancers and leukaemia.

Palladium Alloy for Dental Use

DEGUSSA A.G. *German Offen.* 3,522,523
Ag-free Pd alloys containing Pd, Pt, Ru, Au and/or Re, Cu, Sn, In, one of W, Mo, Nb or Ta, and Co, are cheap, extra hard and compatible with dental ceramics.

Diagnostic Agents Containing Ruthenium

M. WENZEL *German Offen.* 3,523,262
Metallocene derivatives preferably containing ruthenocene and labelled with a radioactive metal isotope, such as Ru⁹⁷ or Ru⁹⁵, are useful as diagnostic agents for scintigraphic imaging of brain and lungs.

Lower Toxicity Platinum Anti-Tumour Agents

MEDAC GES. KLINISCHE *German Offen.* 3,524,841
New Pt crown ether complex compounds are useful as anti-tumour agents with comparable activity to cisplatin, lower toxicity, and higher water solubility.

New Platinum Anti-Tumour Complexes

ASTA WERKE A.G. *German Offen.* 3,605,191
New 3-aryl-1,2-propylenediamine Pt(II) complexes are prepared by reaction of, for example, 3-phenylpropylene-1,2-diamine with tetrahaloplatinic acid. The new compounds are well tolerated and show good anti-tumour activity.

Platinum Complex for Rubber Composition

CABLE IND. DES. BUR. *Russian Patent* 1,219,621
A Pt and ferrocene complex is included in a vinyl-siloxane-based rubber composition used in the manufacture of medical items. The Pt complex improves resistance to overcuring, while preserving physico-mechanical properties and hygiene.

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