

State of the art

patent news archive 2006

US20060292302A1: Apparatus and method for growing a synthetic diamond

Applicant: -
Publication: 2006-12-28
Filed: 2005-06-24
Status: application

Disclosed herein is an apparatus and method for growing a synthetic diamond. The apparatus for growing a synthetic diamond comprises: a reaction area contained with a high pressure, high temperature apparatus; and a means for pulling a vacuum on the reaction area. The method for growing a synthetic diamond includes the steps of using a reaction area contained within a high pressure, high temperature apparatus; and pulling a vacuum on the reaction area.

US20060288927A1: System and high pressure, high temperature apparatus for producing synthetic diamonds

Applicant: -
Publication: 2006-12-28
Filed: 2005-06-24
Status: application

An apparatus for growing a synthetic diamond comprises a growth chamber, at least one manifold allowing access to the growth chamber, and a plurality of safety clamps positioned on opposite sides of the growth chamber; wherein the growth chamber and the plurality of safety clamps are comprised of a material having a tensile strength of about 120,000-200,000 psi, a yield strength of about 100,000-160,000 psi, an elongation of about 10-20%, an area reduction of about 40-50%, an impact strength of about 30-40 ft-lbs, and a hardness greater than 320 BHN.

JP2006208207A2: Indicating plate equipped with precious stone-like index parts

Applicant: Citizen Seimitsu Co Ltd
Publication: 2006-08-10
Filed: 2005-01-28
Status: application

PROBLEM TO BE SOLVED: To provide an indicating plate capable of performing diversifying of design and high-class feeling at low cost, by forming index parts by replacing the pedestal parts with high-class precious stone to the precious stone-like specification in indicating plate placing index parts on the top surface of a dial substrate.

SOLUTION: The index parts consist of a index substrate and a translucency decorating member (transparent resin, coloring transparent resin, clear glass, and coloring clear glass and the like). The index substrate is treated by applying cut pattern with precious stone cut geometry. Both the index substrate and the translucency decorating member are car-

WTOCD

ried out by surface processing. Since bulk production is possible, the indicating plate equipped with index parts can be provided with uniform quality at low cost.

JP2006206335A2: Method of producing diamond

Applicant: Takahashi Nobuyuki / Katsuyama Kouhachiro

Publication: 2006-08-10

Filed: 2005-01-25

Status: application

PROBLEM TO BE SOLVED: To provide a method capable of producing a diamond having a crystal structure similar to that of a natural diamond without using an expensive and special production device.

SOLUTION: The method of producing the diamond comprises: a step A for producing a cinder-like carbonized material by heating tar generated when burning timbers such as pine or cedar after pouring them into a kettle; a step B for crushing the cinder-like carbonized material obtained by the step A, charging the crushed material into methylene iodide to remove a supernatant liquid, taking out a precipitate sedimented in methylene iodide, washing by water, and selecting only black polyhedral crystals from the precipitate; and a step C for heating the polyhedral crystals obtained by the step B at a temperature of 400 to 600°C under normal pressures without pressurizing until obtaining a water-white crystal. When producing the diamond having a size of approximately one carat, the heating time of the step C is about two years.

JP2006181644A2: Cutting method for diamond and diamond obtained by the same

Applicant: Tokyo Shinju KK

Publication: 2006-07-13

Filed: 2003-02-13

Status: application

PROBLEM TO BE SOLVED: To provide a cutting method for diamond, exhibiting stronger brilliance and observing a heart-and-arrow phenomenon and diamond obtained by the same.

SOLUTION: Five pavilion main facets are formed so that a position shifted from the ridge line of a crystal shape on the pavilion formation side by about 15° is a ridge line in a diamond raw ore, and with reference thereto, ten pavilion main facets are formed. On the pavilion side of diamond, the ten pavilion main facets are formed around an acute angle culet, and twenty lower girdle facets are formed between them.

JP2006219370A2: Apparatus and method for diamond production

Applicant: Carnegie Institution of Washington / UAB Research Foundation

Publication: 2006-08-24

Filed: 2006-04-26

Status: application

PROBLEM TO BE SOLVED: To provide an apparatus and a method for producing a single-crystal diamond at a growth rate greater than about 1 μm per hour.

WTOCD

SOLUTION: The method for producing the diamond comprises a step wherein the diamond is arranged in a holder so that it makes a thermal contact with a side surface of the diamond adjacent to an edge of a growth surface of the diamond, a step wherein the temperature of the growth surface of the diamond is measured to provide temperature measurement values, a step wherein the temperature of the growth surface is controlled based upon the temperature measurement values and a step wherein the single-crystal diamond is grown by microwave plasma chemical vapor deposition on the growth surface. Here, the growth rate of the diamond is greater than 1 μm per hour

JP2006225208A2: Highly dispersible single crystal diamond fine powder and its producing method

Applicant: Ishizuka Hiroshi
Publication: 2006-08-31
Filed: 2005-02-18
Status: application

PROBLEM TO BE SOLVED: To provide a diamond fine powder which has excellent polishing performance and hardly forms rigid agglomerates and which has a D50 value of <50 nm.

SOLUTION: 1. The diamond fine powder is an assembly of single crystal diamond particles in which the D50 value is <50 nm. A portion of the surface of each particle is converted into carbon having a non-diamond structure, and the carbon having the non-diamond structure, which is formed in heating operation, is disposed between the particles. 2. A method for producing the diamond fine particles comprises pulverizing a single crystal raw material diamond with a mechanical impact-crushing means, then obtaining the diamond fine powder having a D50 value of <50 nm in a precise classification process, sticking a carbon generating agent on the particle surface by dipping the particles into a solution or a dispersion of the carbon generating agent, and heating the particles at 800-1,400°C in an inert atmosphere. At this time, the carbon having the non-diamond structure, previously formed or formed from the carbon generating agent in situ, is used as a separation agent between the diamond particles, and thereby, the agglomeration of the particles is effectively avoided.

US7122837: Structures formed in diamond

Applicant: Apollo Diamond, Inc
Publication: 17/10/2006
Filed: 11/07/2005

Contents: N-V centers in diamond are created in a controlled manner. In one embodiment, a single crystal diamond is formed using a CVD process, and then annealed to remove N-V centers. A thin layer of single crystal diamond is then formed with a controlled number of N-V centers. The N-V centers form Qubits for use in electronic circuits. Masked and controlled ion implants, coupled with annealing are used in CVD formed diamond to create structures for both optical applications and nanoelectromechanical device formation. Waveguides may be formed optically coupled to the N-V centers and further coupled to sources and detectors of light to interact with the N-V centers.

Granted

WTOCD

EP1315558B1: HIGH PRESSURE AND HIGH TEMPERATURE PRODUCTION OF DIAMONDS

Applicant: Bellataire International LLC

Publication: 18/10/2006

Filed: 08/08/2001

Contents: A method for changing the color of discolored natural diamond, wherein the discoloured natural diamond is selected from the group consisting of rough diamond, pre-cut diamond and polished diamond, the method comprising: a) blocking the natural diamond to streamline the shape of the natural diamond, such that near surface imperfections and non-uniformities of the natural diamond are removed; b) placing the streamlined natural diamond in a pressure transmitting medium; c) consolidating the pressure transmitting medium into a pill wherein the pressure transmitting medium is consolidated in excess of 90% of its theoretical density; d) exposing the pill to elevated temperature and elevated pressure within the graphite-stable range or within the diamond forming range of the carbon phase diagram for a time sufficient to change the color of the diamond; and e) recovering the diamond.

Granted

EP1712661A1: Single crystalline diamond and producing method thereof

Applicant: Sumitomo Electric Industries, Ltd.

Publication: 18/10/2006

Filed: 07/04/2006

Contents: The object of the present invention is to obtain a high quality single crystalline diamond that has less distortion and large area suitable for semiconductor device substrates or an optical component material. The present invention is a single crystalline diamond produced by chemical vapor deposition, wherein, when a linear polarized light which is composed of two linear polarized lights perpendicular to each other is introduced into one main face of the single crystalline diamond, a maximum value of a retardation between the two linear polarized lights perpendicular to each other which come out from an opposite main face is not more than 50 Åµm at maximum per a thickness of 100 Åµm across an entire of the single crystalline diamond, and also a method for producing the diamond.

Application

JP2006143561A2: LOW TEMPERATURE SYNTHESIS METHOD OF DIAMOND

Applicant: JAPAN SCIENCE & TECHNOLOGY AGENCY

Publication: 08/06/2006

Filed: 24/11/2004

Contents: The diamond is synthesized on the surfaces of substrates by generating a high frequency discharge plasma while heating and evaporating a metalloporphyrin complex which is oppositely arranged in the vicinity of the surfaces of the substrates.

Application

US7119683: Gemstone inventory and detection system

Applicant: none

Publication: 10/10/2006

Filed: 31/01/2005

Contents: A system for controlling gemstones employs RFID chips adhered to each stone. A display or storage area includes a radiator for generating activating emission for the RFID chips and an antenna for picking up the resultant RF signals including serial number. Both the radiator and antenna are connected to a computer supporting a database with an inventory of the chips and anti-collision circuitry for identifying the chips.

Granted

WTOCD

USD529836: Star diamond

Applicant: K.P. Sanghvi & Sons
Publication: 10/10/2006
Filed: 24/06/2005
Contents: Design. Round.
Granted

WO06082259A1: PERSONALISED SYNTHETIC DIAMOND OF DIFFERENT COLOURS, OBTAINED FROM (LIVING OR DEAD) HUMAN OR ANIMAL KERATIN AND PRODUCTION METHOD THEREOF

Applicant: INSTITUTO DE MONOCRISTALES, S.L.
Publication: 10/08/2006
Filed: 16/08/2005
Contents: The invention relates to a method of producing large diamond single crystals of different colours using carbon from the keratin to be found in the ectoderm of many living organisms. Carbon can be extracted from a human being by cutting off a lock of hair, carbonising said lock and subsequently subjecting same to a high pressure and temperature process.
Application

US20060224462A1: Automated jewelry exchange

Applicant: none
Publication: 05/10/2006
Filed: 29/03/2005
Contents: An information processing system for facilitating jewelry transactions is disclosed. The information processing system includes a first interface for receiving from suppliers information relating to a plurality of items of jewelry available for purchase and components related to the items and a database configured for storing the information relating to the items and related components. The information processing system further includes a second interface for presenting to buyers the information relating to the plurality of items of jewelry and for receiving from buyers a selection of an item for purchase and a search engine for searching the database for information relating to an item of jewelry and related components. The information processing system further includes logic for presenting to the buyer information associated with components related to an item of jewelry and options on constructing a jewelry assembly comprising the item and components selected by the buyer.
Application

EP1272264B1: HIGH TEMPERATURE/HIGH PRESSURE COLOUR CHANGE OF DIAMOND

Applicant: Element Six (Proprietary) Limited
Publication: 04/10/2006
Filed: 02/04/2001
Contents: Changing the color of brown type IIa diamond from brown to pink involves creating reaction mass by providing diamond in pressure transmitting medium, and subjecting the reaction mass to specified temperature and pressure
Granted

EP1272265B1: HIGH TEMPERATURE/HIGH PRESSURE COLOUR CHANGE OF DIAMOND

Applicant: Element Six (Proprietary) Limited
Publication: 04/10/2006
Filed: 02/04/2001

WTOCD

Contents: Changing the color of brown type IIa diamond from brown to colorless involves creating reaction mass by providing diamond in pressure transmitting medium, and subjecting the reaction mass to specified temperature and pressure
Granted

EP1272266B1: HIGH TEMPERATURE/HIGH PRESSURE COLOUR CHANGE OF DIAMOND

Applicant: Element Six (Proprietary) Limited

Publication: 04/10/2006

Filed: 02/04/2001

Contents: Changing of grey type IIb diamond from grey to blue or enhancing the color of type IIb diamond by creating reaction mass, and subjecting the reaction mass to specified temperature and pressure
Granted

USD528458: Queen cut jewel

Applicant: Gitanjali Gems Limited

Publication: 19/09/2006

Filed: 28/04/2005

Contents: Design. Octagon.

Granted

USD528459: Precious stone

Applicant: Rubel & Menasche, societate anonime

Publication: 19/09/2006

Filed: 03/06/2005

Contents: Design. Round.

Granted

USD528460: Diamond

Applicant: Zale Canada Co.

Publication: 19/09/2006

Filed: 15/06/2005

Contents: Design. Round.

Granted

USD528461: Gemstone

Applicant: Parikh; Mukesh Suryakant

Publication: 19/09/2006

Filed: 15/08/2005

Contents: Design. Three pointed petal partial design.

Granted

WO06098652A1: PERSONIFIED GROWN JEWELLERY DIAMOND AND A METHOD FOR THE PRODUCTION THEREOF

Applicant: OBSHESTVO S OGRANICHENNOI OTVETSTVENNOSTIU "BRILLIANT DUSHI"

Publication: 21/09/2006

Filed: 14/03/2005

Contents: The invention relates to jewellery and is directed at producing a precious stone, in particular a diamond personifiable (identifiable) to a given human being or animal. The personified grown jewellery diamond comprises a set of microelements characterising the human being or animal and contained in the hair composition thereof. Said set of microelements comprises at least heavy metals such as Sr, Cd, In, Sn, Ba, Pb and Bi. Said invention also relates to a method for producing the personi-

WTOCD

fied grown jewellery diamond from the human being or animal hairs consisting in treating the hairs by mineralising at a temperature equal to or less than 550 °C, in spectrally determining the presence of the microelements containing at least heavy metals such as Sr, Cd, In, Sn, Ba, Pb and Bi in the hair mineralisation product and characterising said human being or animal, in forming a carbon source from a spectrally pure graphite supplemented with the hair mineralisation product for growing a diamond, in determining the microelement set in the grown diamond and in identifying said grown diamond according to the correspondence between the microelement set contained therein and the hair microelement set characterising the human being or animal.

Application

WO06098661A2: METHOD FOR PROCESSING DIAMOND-CONTAINING MINERAL CONCENTRATES AND FOR CHEMICALLY CLEANING THE DIAMOND SURFACES

Applicant: OBSHESTVO S OGRANICHENNOI OTVETSTVENNOSTIU "BRILLIANT DUSHI"

Publication: 21/09/2006

Filed: 16/03/2006

Contents: The invention relates to mineral dressing and can be used by diamond-mining companies. The inventive method consists in loading and chemically enriching a concentrate and in cleaning and unloading a target product. The concentrate enrichment is carried out by single or several treatments in an acid or acids, and afterwards in an alkali or in an alkali mixture by heating it up to a temperature ranging from 900 to 1000 °C and holding and agitating in an inert gas atmosphere at said temperature. Said invention makes it possible to increase the diamond cleaning degree.

Application

WO06097915A2: A GEMSTONE POLISHING DEVICE AND A METHOD OF POLISHING

Applicant: ISRAEL DIAMOND INSTITUTE

Publication: 21/09/2006

Filed: 28/02/2006

Contents: A method of polishing diamonds held by a tang having a predefined axis orthogonal to polishing surface. The axis returns to its original spatial orientation with respect to the polishing surface at the end of each facet of the diamond polishing.

Application

US7102742: Fluorescence measuring device for gemstones

Applicant: Gemological Institute of America, Inc.

Publication: 05/09/2006

Filed: 12/01/2004

Contents: A gemstone fluorescence measuring device according to the invention generally includes an ultraviolet ("UV") emission chamber, a UV radiation source, and a light meter assembly. The UV radiation source includes an upper light emitting diode ("LED") and a lower LED that radiate a gemstone under test from both above and below the gemstone. The UV radiation source provides both trans-radiation and direct radiation to the gemstone, and the UV radiation source has an adjustable intensity, thus facilitating calibration of the fluorescence measuring device. The light meter assembly includes a light detector that detects the visible light emitted from the gemstone under test in response to the UV radiation. The light detector is configured to simulate the spectral characteristics of the human eye. The fluorescence

WTOCD

measuring device converts the measured visible light into a numerical lux reading, which can then be converted into a fluorescence grade for the gemstone under test.
Application

EP1211503B1: A method and apparatus for locating inclusions in a diamond stone

Applicant: Diamcad; SivovoLenko, Serguei Borisovich

Publication: 05/09/2006

Filed: 12/01/2004

Contents: A method and apparatus to localizing inclusions in a diamond, wherein said diamond is fixed on a holder, said diamond on the holder is observed under a predetermined angle to obtain an image, further a second measurement is carried out to obtain two data to be calculated in a computer, said second data can be obtained by a depth measurement, or by changing the direction of observation to said diamond, in order to localize the inclusion with respect to the outer surface of said diamond.

Granted

USD527669: Gemstone arrangement

Applicant: Continental Jewelry USA, Inc.

Publication: 05/09/2006

Filed: 05/10/2004

Contents: Design. Round made out of four.

Granted

USD527670: Diamond

Applicant: none

Publication: 05/09/2006

Filed: 18/04/2005

Contents: Design. Round.

Granted

USD527671: Jewelry setting/gemstone arrangement

Applicant: Continental Jewelry USA, Inc.

Publication: 05/09/2006

Filed: 05/05/2004

Contents: Design. Four petal flower setting.

Granted

USD527672: Jewelry setting

Applicant: none

Publication: 05/09/2006

Filed: 07/01/2004

Contents: Design.

Granted

EP1698426A1: Device for cutting material by means of a laser beam

Applicant: Bettonville, naamloze vennootschap

Publication: 06/09/2006

Filed: 04/03/2005

Contents: Device for cutting material by means of a laser beam, which device comprises a laser source for generating a laser beam with an optical axis and a focussing lens for focussing said beam, characterized in that between said laser source and said focussing lens are provided a first and a second retardation plate and a refrac-

WTOCD

tion element in between them, which is provided rotatable and tiltable with respect to said optical axis of the incoming light beam.

Application

WO06090378A2: GEMSTONE SETTINGS

Applicant: none

Publication: 31/08/2006

Filed: 22/02/2006

Contents: An ornamental gemstone setting for a gemstone comprising a UV light source coupled to a power supply, wherein the UV light source illuminates the gemstone causing attractive optical effects. The gemstone setting may be inset into a piece of jewelry or a luxury good such as a car, into an ornament, or into a piece of sculpture such as a Buddha for example.

Application

US20060196858A1: METHOD AND SYSTEM FOR LASER MARKING IN THE VOLUME OF GEMSTONES SUCH AS DIAMONDS

Applicant: Barron; Wes; International Gemstone Registry Inc.

Publication: 07/09/2006

Filed: 22/08/2005

Contents: A method and an apparatus for laser marking indicia in the volume of gemstones such as diamonds, the indicia being made up of a plurality of microscopic dot-shaped marks whose build-up can be initiated by exposing naturally-occurring internal defects or impurities in the volume of a gemstone to a tightly focused train of laser pulses. Authentication data is encoded in the gemstone from the relative spatial arrangement of the dot-shaped marks that form the indicium. Taking advantage of the presence of otherwise invisible defects in the gemstone allows for inscribing indicia with laser pulses carrying energies substantially lower than the threshold energy required for inscribing in the volume of a perfect gemstone material. The marking process is then much less susceptible to inflict damages to the surface of the gemstone, and the marking can be performed using a broad variety of femtosecond laser systems. The dot-shaped marks engraved at a depth below the surface of a gemstone can be made undetectable with the unaided eye or with a loupe by limiting their individual size to a few micrometres, while devising indicia made up of only a few marks. As a result, the marking does not detract from the appearance and value of the gemstone. The procedure for laser marking accounts for the random spatial distribution of the defects present in natural gemstones as well as for their strongly localized character. The presence of an indicium can be detected by using a dedicated optical reader that can be afforded by every jewellery store.

Application

WO06093473A1: LIGHTING APPARATUS FOR A RETAIL DISPLAY OF DIAMONDS, JEWELLERY AND FINE HANDICRAFTS

Applicant: none

Publication: 08/09/2006

Filed: 01/03/2006

Contents: The invention concerns a lighting apparatus for a retail display of diamonds, jewellery and fine handicrafts. For instance, a jewellery display cabinet having the lighting apparatus installed. The invention provides a lighting apparatus and a method for controlling a lighting apparatus for a retail display of diamonds, jewellery and fine handicrafts. The electrical lights of the apparatus are each able to emit varying levels of illumination and the array of lights is able to display a repeating pattern of variable illumination that changes over time to simulate the appearance of movement of light along the array of lights. This produces a lively sparkling effect in

WTOCD

the items being illuminated. This has the benefit of enhancing the lustre, appeal and apparent beauty of diamonds, precious stones, silver and other items of jewellery or finely crafted items on display and lead to increased sales.

Application

US7105822: Characterization of clarity and color enhancement agents in gems

Applicant: American Gemological Laboratories, Inc.

Publication: 12/09/2006

Filed: 28/09/2001

Contents: Diffuse reflectance spectroscopy using near infrared and mid infrared radiation is used to detect the presence of organic chemical compounds in gems. Suitably, diffuse reflectance infrared Fourier transformation spectroscopy is employed to detect the presence of organic compounds in gems using mid infrared and near infrared radiation. The apparatus uses an integrating sphere or integrating cylinder with a probe that acts as both a source of near infrared radiation and a detector of reflected diffuse internal energy from the gem. Alternatively, the integrating sphere or integrating cylinder is replaced with a reflective fluid which surrounds the gem and causes total internal reflection.

Granted

US20060185583A1: Ultrahard diamonds and method of making thereof

Applicant: Carnegie Institution of Washington

Publication: 24/08/2006

Filed: 11/04/2006

Contents: A single crystal diamond grown by microwave plasma chemical vapor deposition annealed at pressures in excess of 4.0 GPa and heated to temperature in excess of 1500 degrees C. that has a hardness of greater than 120 GPa. A method for manufacture a hard single crystal diamond includes growing a single crystal diamond and annealing the single crystal diamond at pressures in excess of 4.0 GPa and a temperature in excess of 1500 degrees C. to have a hardness in excess of 120 GPa.

Application

US20060190292A1: Systems and methods for evaluating the appearance of a gemstone

Applicant: Gemological Institute of America, Inc.

Publication: 24/08/2006

Filed: 22/03/2006

Contents: Of the "four C's," cut has historically been the most complex to understand and assess. This application presents a three-dimensional mathematical model to study the interaction of light with a fully faceted, colorless, symmetrical round-brilliant-cut diamond. With this model, one can analyze how various appearance factors (brilliance, fire, and scintillation) depend on proportions. The model generates images and a numerical measurement of the optical efficiency of the round brilliant—called DCLR—which approximates overall fire. DCLR values change with variations in cut proportions, in particular crown angle, pavilion angle, table size, star facet length, culet size, and lower girdle facet length. The invention describes many combinations of proportions with equal or higher DCLR than "Ideal" cuts, and these DCLR ratings may be balanced with other factors such as brilliance and scintillation to provide a cut grade for an existing diamond or a cut analysis for prospective cut of diamond rough.

Application

WTOCD

USD527301: Rectangular-shaped gemstone arrangement

Applicant: none

Publication: 29/08/2006

Filed: 06/02/2004

Contents: Design. Made up out of 4 stones.

Granted

WO06087702A1: MEANS AND METHOD OF COMPUTER-AIDED MANUFACTURING OF POLISHED GEMSTONES FROM ROUGH OR SEMI PROCESSED GEMSTONES

Applicant: DIALIT LTD.

Publication: 24/08/2006

Filed: 13/02/2006

Contents: By means of a gemstones' processing system adapted to produce a faceted gemstone from a rough or half-processed gemstone (raw material) wherein said processing system comprising a processing tool adapted to provide said faceted gemstone with a plane facet of predetermined three-dimensional (3D) coordinates (coordinated facet), and a holder adapted to both immobilize said raw material and further to introduce it to said processing tool in 3D coordinated manner such a facet is provided; a method comprising calculating a 3D coordinates of at least one reference indicium (origin) located within or on the surface of said faceted gemstone; providing a 3D coordinated model of the faceted gemstone (coordinated model) wherein 3D coordinates of the facets are determined in respect to said origin; and, processing said facets in a sequence of processing steps in the manner that each processing step is terminate wherein the 3D coordinates of the facet processed by said processing tool is identical to the 3D coordinates of the corresponding facet provided in the coordinated model.

Application

WO06083878A2: A METHOD AND SYSTEM OF MARKETING DIAMONDS

Applicant: none

Publication: 10/08/2006

Filed: 31/01/2006

Contents: A method and system of marketing diamonds that came from a single rough diamond is described. A single rough diamond is cut into at least two smaller diamonds. The smaller diamonds are provided for sale in sets, each set having at least two diamonds. Documentation stating that the diamonds in a set came from a single rough diamond is provided with each diamond set. In another embodiment, the method further comprises packaging a set of the smaller diamonds in one or more jewelry boxes. The diamonds may be loose or mounted onto at least two distinct pieces of jewelry. The consumers buying the sets of diamonds made in accordance with this invention will wear their diamond, - knowing that a diamond from the same rough is also worn by their loved one. Thus, the method and system of the invention provide added appeal of diamonds to consumers.

Application

USD526593: Precious stone

Applicant: Rubel & Menasche, societate anonime

Publication: 15/08/2006

Filed: 11/07/2005

Contents: Design. Round brilliant, 10 symmetry.

Granted

WTOCD

US20060182883A1: Abrasion resistant coatings with color component for gemstones and such

Applicant: none

Publication: 17/08/2006

Filed: 17/02/2006

Contents: In accordance with the present invention, there are provided methods for imparting abrasion wear resistant color to "gemstones" by providing an integrated coating consisting of the color imparting agent and the abrasion wear resistant agent. The color imparting agent may provide the perception of color via interference phenomena or via bulk absorption phenomena. Abrasion wear resistance may be provided by integrating any of the materials such as DLC (diamond-like carbon), CVD diamond (CVDD), alumina, polymer-based materials, nitrides and carbonitrides. Abrasion wear resistant properties of DLC or CVDD may be further improved, in addition to improvement of other mechanical properties and inducing hydrophobicity, by incorporating certain elements into the deposited film.

Application

USD526924: Diamond or gemstone

Applicant: The Stuckey Company

Publication: 22/08/2006

Filed: 30/08/2004

Contents: Design. Round.

Granted

USD526925: Artificial gemstones, natural gemstones, ornamental objects made of glass

Applicant: Swarovski Aktiengesellschaft

Publication: 22/08/2006

Filed: 06/05/2005

Contents: Design.

Granted

USD525902: Diamond cut

Applicant: none

Publication: 01/08/2006

Filed: 28/02/2005

Contents: Design. Hexadecagon.

Granted

US20060173738A1: Method and system of marketing diamonds

Applicant: none

Publication: 03/08/2006

Filed: 02/02/2005

Contents: A method and system of marketing diamonds that came from a single rough diamond is described. A single rough diamond is cut into at least two smaller diamonds. The smaller diamonds are provided for sale in sets, each set having at least two diamonds. Documentation stating that the diamonds in a set came from a single rough diamond is provided with each diamond set. In another embodiment, the method further comprises packaging a set of the smaller diamonds in one or more jewelry boxes. The diamonds may be loose or mounted onto at least two distinct pieces of jewelry. The consumers buying the sets of diamonds made in accordance with this invention will wear their diamond, knowing that a diamond from the

WTOCD

same rough is also worn by their loved one. Thus, the method and system of the invention provide added appeal of diamonds to consumers.

Application

WO06081304A2: BORON-DOPED DIAMOND SEMICONDUCTOR

Applicant: APOLLO DIAMOND, INC.

Publication: 03/08/2006

Filed: 26/01/2006

Contents: First and second synthetic diamond regions are doped with boron. The second synthetic diamond region is doped with boron to a greater degree than the first synthetic diamond region, and in physical contact with the first synthetic diamond region. In a further example embodiment, the first and second synthetic diamond regions form a diamond semiconductor, such as a Schottky diode when attached to at least one metallic lead.

Application

US7088434: Apparatus and method for providing spot lighting for gemstone observation

Applicant: Gemological Institute of America, Inc.

Publication: 08/08/2006

Filed: 13/08/2003

Contents: An apparatus, system and method for providing spot lighting for observing a gemstone is presented. In particular, the spot lighting provided by the invention allows for observing of the fire of a gemstone, i.e. the visible effects of light dispersion into separate colors. The apparatus includes a tube for receiving a portion of a multi-spectral light source, and a mask coupled to the tube for blocking other portions of the light source. By selecting the proper tube dimensions and aligning the tube with both the light source at an inlet and a gemstone at an outlet, the spot lighting source provides direct lighting for isolating and accentuating the effects of fire.

Granted

USD526237: Precious stone flower design

Applicant: Rosy Blue, N.V.

Publication: 08/08/2006

Filed: 10/04/2003

Contents: Design. Flower.

Granted

US20060157713A1: STRUCTURES FORMED IN DIAMOND

Applicant: Apollo Diamond, Inc

Publication: 20/07/2006

Filed: 11/07/2005

Contents: N-V centers in diamond are created in a controlled manner. In one embodiment, a single crystal diamond is formed using a CVD process, and then annealed to remove N-V centers. A thin layer of single crystal diamond is then formed with a controlled number of N-V centers. The N-V centers form Qubits for use in electronic circuits. Masked and controlled ion implants, coupled with annealing are used in CVD formed diamond to create structures for both optical applications and nanoelectromechanical device formation. Waveguides may be formed optically coupled to the N-V centers and further coupled to sources and detectors of light to interact with the N-V centers.

Application

WTOCD

US20060163584A1: Boron-doped diamond semiconductor

Applicant: none

Publication: 27/07/2006

Filed: 26/01/2005

Contents: First and second synthetic diamond regions are doped with boron. The second synthetic diamond region is doped with boron to a greater degree than the first synthetic diamond region, and in physical contact with the first synthetic diamond region. In a further example embodiment, the first and second synthetic diamond regions form a diamond semiconductor, such as a Schottky diode when attached to at least one metallic lead.

Application

US20060164623A1: Method and system for online evaluation of gemstones

Applicant: none

Publication: 27/07/2006

Filed: 17/06/2006

Contents: An online method and system for evaluating a gemstone is provided that enables a consumer to use a personal computer to evaluate the visual appearance and measurement data of the gemstone by emulating the laboratory instruments that previously collected the data for the gemstone. The computer is connected to the internet and a website that is linked to a gemstone database, emulation software and graphical user interface. The consumer identifies the specific gemstone he or she wants to evaluate, and an interactive gemstone certificate screen is displayed. The consumer separately selects and then emulates a variety of lab instruments, such as color and clarity grading, geometric measuring, and light performance and light ray tracing instruments. Graphical images and data pertaining to the selected gemstone are displayed on the computer monitor, and selected portions of the database are downloaded and saved on the computer memory.

Application

US20060164625A1: Fluorescence measuring device for gemstones

Applicant: Gemological Institute of America, Inc.

Publication: 27/07/2006

Filed: 23/03/2006

Contents: A gemstone fluorescence measuring device according to the invention generally includes an ultraviolet ("UV") emission chamber, a UV radiation source, and a light meter assembly. The UV radiation source includes an upper light emitting diode ("LED") and a lower LED that radiate a gemstone under test from both above and below the gemstone. The UV radiation source provides both trans-radiation and direct radiation to the gemstone, and the UV radiation source has an adjustable intensity, thus facilitating calibration of the fluorescence measuring device. The light meter assembly includes a light detector that detects the visible light emitted from the gemstone under test in response to the UV radiation. The light detector is configured to simulate the spectral characteristics of the human eye. The fluorescence measuring device converts the measured visible light into a numerical lux reading, which can then be converted into a fluorescence grade for the gemstone under test.

Application

WO06076354A2: DIAMOND MEDICAL DEVICES

Applicant: APOLLO DIAMOND, INC.

Publication: 20/07/2006

Filed: 11/01/2006

Contents: Masked and controlled ion implants, coupled with annealing or etching are used in CVD formed single crystal diamond to create structures for both optical ap-

WTOCD

plications, nanoelectromechanical device formation, and medical device formation. Ion implantation is employed to deliver one or more atomic species into and beneath the diamond growth surface in order to form an implanted layer with a peak concentration of atoms at a predetermined depth beneath the diamond growth surface. The composition is heated in a non-oxidizing environment under suitable conditions to cause separation of the diamond proximate the implanted layer. Further ion implants may be used in released structures to straighten or curve them as desired. Boron doping may also be utilized to create conductive diamond structures.

Application

USD525164: Natural or artificial gemstone or ornamental object made of glass

Applicant: Swarovski Aktiengesellschaft

Publication: 18/07/2006

Filed: 28/12/2004

Contents: Design. Square.

Granted

USD525165: Diamond

Applicant: none

Publication: 18/07/2006

Filed: 06/04/2005

Contents: Design. Round.

Granted

USD525559: Precious stone

Applicant: Tokyo Pearl Co. Ltd.

Publication: 25/07/2006

Filed: 17/06/2005

Contents: Design. Round.

Granted

US20060164624A1: Apparatus and method for providing spot lighting for gemstone observation

Applicant: Gemological Institute of America

Publication: 27/07/2006

Filed: 21/03/2006

Contents: An apparatus, system and method for providing spot lighting for observing a gemstone is presented. In particular, the spot lighting provided by the invention allows for observing of the fire of a gemstone, i.e. the visible effects of light dispersion into separate colors. The apparatus includes a tube for receiving a portion of a multi-spectral light source, and a mask coupled to the tube for blocking other portions of the light source. By selecting the proper tube dimensions and aligning the tube with both the light source at an inlet and a gemstone at an outlet, the spot lighting source provides direct lighting for isolating and accentuating the effects of fire.

Application

US20060153994A1: High-speed diamond growth using a microwave plasma in pulsed mode

Applicant: Centre National De La Recherche Scientifique-CNRS; Universite Paris Nord(Paris X111) Institut Galilee

Publication: 13/07/2006

Filed: 18/06/2003

WTOCD

Contents: Method for manufacturing a diamond film of electronic quality at a high rate using a pulsed microwave plasma, in which, in a vacuum chamber, a plasma of finite volume is formed near a substrate by subjecting a gas containing at least hydrogen and carbon to a pulsed discharge, which has a succession of low-power states and of high-power states, and having a peak absorbed power P_c , so as to obtain at least carbon-containing radicals in the plasma and to deposit the said carbon-containing radicals on the substrate in order to form a diamond film thereon. Power is injected into the volume of the plasma with a peak power density of at least 100 W/cm³, while maintaining the substrate to a substrate temperature of between 700° C. and 1000° C.

Application

USD524689: Diamond

Applicant: M. Fabrikant & Sons, Ltd.

Publication: 11/07/2006

Filed: 09/08/2005

Contents: Partial design. Round.

Granted

USD524688: Diamond

Applicant: M. Fabrikant & Sons, Ltd.

Publication: 11/07/2006

Filed: 02/08/2005

Contents: Design. Cut cornered square.

Granted

USD524687: Diamond cut

Applicant: Chester Industries, Inc.

Publication: 11/07/2006

Filed: 18/07/2005

Contents: Design. Cut cornered square.

Granted

USD524686: Diamond design

Applicant: none

Publication: 11/07/2006

Filed: 27/04/2005

Contents: Design. Octagon.

Granted

USD524685: Diamond

Applicant: Wieder & Shifman; Golan Yossi

Publication: 11/07/2006

Filed: 25/03/2005

Contents: Design. Oval.

Granted

USD524684: Diamond

Applicant: Wieder & Shifman; Golan Yossi

Publication: 11/07/2006

Filed: 25/03/2005

Contents: Partial design. Twin square.

Granted

WTOCD

USD524683: Diamond

Applicant: none
Publication: 11/07/2006
Filed: 25/03/2005
Contents: Partial design. Twin marquise.
Granted

USD524682: Diamond

Applicant: M. Fabrikant & Sons, Ltd.
Publication: 11/07/2006
Filed: 07/02/2005
Contents: Partial design. Emerald.
Granted

USD524186: Precious stone

Applicant: Nippon Star, naamloze vennootschap
Publication: 04/07/2006
Filed: 09/09/2004
Contents: Design. Hexadecagon.
Granted

USD524187: Diamond

Applicant: none
Publication: 04/07/2006
Filed: 25/03/2005
Contents: Partial design. Pear shape.
Granted

US20060144322A9: ULTRAHARD DIAMONDS AND METHOD OF MAKING THEREOF

Applicant: Carnegie Institution of Washington
Publication: 06/07/2006
Filed: 13/07/2004
Contents: A single crystal diamond grown by microwave plasma chemical vapor deposition annealed at pressures in excess of 4.0 GPa and heated to temperature in excess of 1500 degrees C. that has a hardness of greater than 120 GPa. A method for manufacture a hard single crystal diamond includes growing a single crystal diamond and annealing the single crystal diamond at pressures in excess of 4.0 GPa and a temperature in excess of 1500 degrees C. to have a hardness in excess of 120 GPa.
Application

US20060144821A1: Method for engraving irreproducible pattern on the surface of a diamond

Applicant: Academia Sinica
Publication: 06/07/2006
Filed: 04/01/2005
Contents: The present invention provides a method for engraving desired irreproducible patterns on the surface of gemstones including diamond by the use of an energetic ion beam. The pattern has a characteristic topological texture, which is irreproducible even using the same ion beam to engrave onto the same location of the same diamond.
Application

WTOCD

WO06061707A2: A METHOD OF IMPROVING THE CRYSTALLINE PERFECTION OF DIAMOND CRYSTALS

Applicant: ELEMENT SIX TECHNOLOGIES (PTY) LTD

Publication: 15/06/2006

Filed: 19/12/2005

Contents: This invention relates to a method of improving the crystalline perfection of IIa diamond crystals by heating the grown diamond crystals at an elevated temperature and an elevated pressure. The invention extends to grown diamond material having a low extended defect density with low nitrogen concentration.

Application

WO06061672A1: SYNTHESIS OF DIAMOND

Applicant: ELEMENT SIX TECHNOLOGIES (PTY) LTD

Publication: 15/06/2006

Filed: 09/12/2004

Contents: In a method of synthesising diamond, a reaction mixture of a carbon source and a solvent/catalyst is pre-treated at a high temperature and a high vacuum to remove substantially all of the atmospheric gases and other light volatile atoms. Then, at a reduced temperature, the removed gas is replaced with a desirable process gas. The pre-treated reaction mixture is then subjected to elevated temperature and pressure conditions in the diamond stable region of the carbon phase diagram in the presence of the process gas to produce the diamond. The process gas is selected to enhance the diamond growth rate, reduce solvent/catalyst inclusions, shift the morphology of the synthesised diamond (grown crystals) towards major crystal faces and blockier shape, reduce cracking and strain in the grown crystals, preferably at a desirably high growth rate, and permit the controlled and uniform doping of the diamond crystal with a hetero-atom such as P (phosphorus) or S (sulphur).

Application

US20060124119A1: Method for cutting diamond

Applicant: none

Publication: 15/06/2006

Filed: 15/02/2006

Contents: To provide a diamond rendering reflective light off the table goldenly brilliant by making a proportion thereof symmetry at any place viewed from an upper face, a side face or a bottom face, first reference lines, second reference lines crossing the first reference lines at right angles and third reference lines equally dividing the first reference lines and the second reference lines into four equal parts, respectively are provided. A first arc line is made by intersections of the reference lines. The approximately regular hexadecagon shaped table is established by connection of the intersections of the reference lines with the first arc line. Fourth reference lines dividing the third reference lines into two equal parts and a second arc line with a circle concentric with and larger than the first arc line is made. Star facets are established by connection of the intersections among the fourth reference lines and the second arc line with the top of the table. Upper main facets are established by connection of intersections of a diamond outward appearance and the first and the third reference lines with intersections of the fourth reference lines and the second arc line.

Application

US20060123846A1: Method for setting a stone in a metal element

Applicant: none

Publication: 15/06/2006

WTOCD

Filed: 08/06/2004

Contents: The invention relates to a method for setting a girdle in a piece of metal, said method comprising the following steps: at least one hole is pierced in the piece of metal for receiving the stone, a stone is placed in each hole, a tool is applied perpendicularly to the surface of the piece of metal and close to the periphery of each hole, the end of said tool having a tip for pushing back a lip of metal onto the girdle of the stone, and forming at least one imprint comprising at least one light-reflecting.

Application

US20060137674A1: Diamond cutting method and diamond provided by the method

Applicant: none

Publication: 29/06/2006

Filed: 12/02/2004

Contents: Ten of pavilion main facets are formed with reference to the previously formed five of first pavilion main facets in which an initial first main facet is formed in a position centered on a line shifted approximately fifteen degrees from the ridge of the row diamond on the pavilion side. Ten of pavilion main facets radiate from the culet and twenty of lower girdle facets are formed between the adjacent pavilion main facets on the pavilion side of the diamond.

Application

USD523373: 81 facet decagonal cut diamond

Applicant: Dimexon Diamonds, Ltd.

Publication: 20/06/2006

Filed: 25/04/2005

Contents: Design. Decagon.

Application

USD523772: Diamond

Applicant: Wieder & Shifman; Golan Yossi

Publication: 29/06/2006

Filed: 25/03/2005

Contents: Design. Round. Partial design.

Application

USD522907: Gemstone (I)

Applicant: none

Publication: 13/06/2006

Filed: 31/01/2005

Contents: Design. Cushion.

Granted

USD522908: Gemstone

Applicant: Horowitz Trading, Inc.

Publication: 13/06/2006

Filed: 23/03/2005

Contents: Design. Cut cornered square.

Granted

USD522909: Gemstone

Applicant: none

Publication: 13/06/2006

WTOCD

Filed: 18/04/2005
Contents: Design. Square.
Granted

USD522910: Artificial gemstones, natural gemstones, ornamental objects made of glass

Applicant: Swarovski Aktiengesellschaft
Publication: 13/06/2006
Filed: 06/05/2005
Contents: Design.
Granted

USD522911: Diamond design

Applicant: Atit Diamond Corporation
Publication: 13/06/2006
Filed: 06/07/2006
Contents: Design. Nonagon.
Granted

USD521897: Precious stone

Applicant: Nippon Star, naamloze vennootschap
Publication: 30/05/2006
Filed: 09/09/2004
Contents: Design.
Granted

USD521896: Stone cut

Applicant: none
Publication: 30/05/2006
Filed: 31/12/2003
Contents: Design.

USD521409: Gem stone

Applicant: H. Stern Comerico E Industria S.A.
Publication: 23/05/2006
Filed: 08/01/2004
Contents: Design.
Granted

US20060107692A1: Method and apparatus for a gemstone setting

Applicant: none
Publication: 25/05/2006
Filed: 19/11/2004
Contents: The present invention relates to the field of gemstone casting and gemstone setting using a variation of the lost wax method. That is, the present invention is directed towards making a setting wherein a gemstone is set in the center a wax mold. Prong members are then formed around the gemstone. A cast is then made having the exact measurements of the gemstone to be set. This gives the prong members a strong hold around the gemstone. A plurality of smaller gemstones are then evenly distributed around the main gemstone thus provide for better dispersion, scintillation and brilliancy coefficients of the main gemstone.
Application

WTOCD

US20060107890A1: One hundred millimeter single crystal silicon carbide wafer

Applicant: none

Publication: 25/05/2006

Filed: 12/10/2005

Contents: A method is disclosed for producing a high quality bulk single crystal of silicon carbide in a seeded growth system. The method includes positioning a seed crystal on the seed holder with a low porosity backing material that provides a vapor barrier to silicon carbide sublimation from the seed and that minimizes the difference in thermal conductivity between the seed and the backing material to minimize or eliminate temperature differences across the seed and likewise minimize or eliminate vapor transport from the rear of the seed that would otherwise initiate and propagate defects in the growing crystal. The technique is also useful in the manufacture of near colorless gemstone material.

Application

GB0605618A0: Method to control light in diamonds, gem stones and other transparent faceted objects

Applicant: SHERRIFF, DAVID R

Publication: 26/04/2006

Filed: 21/03/2006

Contents: NA.

Application

WO06048957A1: SINGLE-CRYSTAL DIAMOND

Applicant: SUMITOMO ELECTRIC INDUSTRIES, LTD.

Publication: 11/052006

Filed: 26/05/2005

Contents: A single-crystal diamond grown according to a vapor-phase synthesizing method characterized in that a phase difference between two linearly polarized lights orthogonal to each other which as a result of irradiating of one main plane of crystal with a linearly polarized radiation regarded as being synthesized from two linearly polarized lights orthogonal to each other, have been emitted from the opposite main plane is a maximum of 50 nm or less per 100 μm of crystal thickness throughout the crystal. This single-crystal diamond is an unprecedented single-crystal diamond of large size and high quality that has properties extremely desired in semiconductor device substrates and optical part applications requiring low strain.

Application

WO06050375A2: JEWELRY ARRANGEMENT

Applicant: CONTINENTAL JEWELRY USA, INC.

Publication: 11/052006

Filed: 01/11/2005

Contents: A jewelry arrangement is described having a base and first and second gemstones connected to the base arrangement, and a method for creating the same. The first and second gemstones may each have a tapered pavilion. The pavilion of the second gemstone points outwardly from the base arrangement, and in a different direction than the pavilion of the first gemstone. The jewelry arrangement may have the second gemstone positioned between the first gemstone and the wearer of the ring, such that the pavilions of the first and second gemstones are positioned in an adjacent, spaced-apart orientation relative to each other. The jewelry arrangement may further be provided with first and second gemstone connection arrangements adapted to hold first and second gemstones to the base arrangement.

Application

WTOCD

USD520902: Diamond

Applicant: My Diamond Place Ltd
Publication: 16/052006
Filed: 23/08/2004
Contents: design. Round
Granted

USD520901: Precious stone

Applicant: Nippon Star, Naamloze Vennootschap; F.N. Service Co. LTD
Publication: 16/052006
Filed: 07/11/2003
Contents: Design. Octagon.
Granted

USD520903: Gemstone

Applicant: Nippon Star, Naamloze Vennootschap; F.N. Service Co. LTD
Publication: 16/052006
Filed: 31/01/2005
Contents: Design. Cushion.
Granted

EP1210171B1: HIGH PRESSURE/HIGH TEMPERATURE PRODUCTION OF COLORED DIAMONDS

Applicant: Diamond Innovations, Inc.
Publication: 19/04/2006
Filed: 25/08/2000
Contents: The present invention is directed to a method for treating discolored natural diamonds, especially Type IaB diamond and Type IaA/B diamonds with platelets for improving their color. The method includes placing a discolored natural diamond in a pressure transmitting medium which is consolidated into a pill. Next, the pill is placed into a high pressure/high temperature (HP/HT) press at elevated pressure and elevated temperature within the graphite stable or diamond stable range of the carbon phase diagram for a time sufficient to improve the color of said diamond. Finally, the diamond is recovered from said press. Attractive yellowish-green, greenish-yellow and neon yellow-green diamonds can be made by this method.
Granted

US20060086143A1: Round cut gemstone

Applicant: none
Publication: 27/06/2006
Filed: 27/10/2004
Contents: The invention provides an improved round cut gemstone, comprising a girdle, a crown above the girdle, and a pavilion below the girdle. The crown is located between the girdle and a substantially flat surface defining a table, and has two steps including a first step from the girdle to a crown break and a second step from the crown break to the table. The crown includes eight first step top corner facets, eight second step top corner facets, eight star facets, and sixteen upper girdle facets. The gemstone has a pavilion having a plurality of bottom facets and a centrally located culet at the bottom of the pavilion, and includes eight pavilion or lower corner facets, sixteen outside lower girdle facets and sixteen lower inside girdle facets.
Application

WTOCD

US20060086802A1: Gemstone-carrying items, methods of its fabrication, and uses of such items

Applicant: none

Publication: 27/06/2006

Filed: 27/10/2004

Contents: A carrier associated with a certain item is presented. The carrier has a pattern formed by a plurality of gemstones affixed to the carrier with at least part of each gemstone being directly exposed to view. This technique allows for configuring the item to present added value to the item provider and/or item holder and/or gemstone provider. The technique is particularly useful with plastic identification cards, such as credit cards.

Application

US20060087306A1: Gem tester using electrical photo conductivity

Applicant: none

Publication: 27/06/2006

Filed: 18/10/2005

Contents: Diamond look-alikes like cubic zirconium, moissanite and other synthetic stones, are distinguishable from natural diamonds based on their thermal and/or electrical conductivities. Gem testers that are on the market are capable of evaluating these two parameters as is the present invention. Electrical resistance of moissanites reaches hundreds of thousands megohms. Existing gem testers use test voltage of 1000 volts, to be able to detect electrical conductivity in most moissanites. Still, reliable detection of high resistance moissanites is difficult. Proposed invention uses significant photo conductivity of moissanites, which was observed by the inventors, to facilitate measurement of electrical conductivity in the toughest gems, to reduce test voltage applied to gems to 300 volts, and to limit electrical test current through a gem to no more than a few micro-amps. Other refinements include: multistep evaluation of electrical conductivity, which avoids applying excessive or unnecessary test voltage and current to a gem, circuit design, which efficiently attenuates AC noise, signal processing, which eliminates industrial pick-up, usage of reference temperature sensor, which improves sensibility and repeatability of thermal measurements.

Application

USD519876: Precious stone

Applicant: Nippon Star, naamloze vennootschap

Publication: 02/05/2006

Filed: 09/09/2004

Contents: Design. Octagon.

Granted

EP1648259A1: PRECIOUS STONE CUT AND METHOD OF MAKING

Applicant: SO, DAVID

Publication: 26/04/2006

Filed: 12/07/2004

Contents: A stone cut and method for cutting a stone that increase the number of facets on the stone as well as the scintillation, brilliance, and light reflectivity of the stone. The cut and method includes cutting angles and increased number of facets that, either separately or together, manage the external and internal light flow dynamics of a round cut diamond to a higher level of efficiency, effectiveness, and performance. In accordance with another aspect of the invention, different cutting angles and proportions generate greater brilliance, dispersion, scintillation, and light reflectivity of the stone.

WTOCD

Application

US20060074588A1: System and method for gemstone cut grading

Applicant: GIA

Publication: 06/04/2006

Filed: 27/09/2004

Contents: A system for grading the cut of a diamond utilizes a number of appearance metrics to generate scores for a number of cut components that affect cut quality. These cut components include brightness, fire, scintillation, overweight, durability, polish, and symmetry. The cut grading system employs a cut grading algorithm that processes the individual scores obtained for the cut components to generate an overall cut grade for the diamond. The scoring methodology and the cut grading algorithm are designed to emulate actual observation grading such that the overall cut grade represents a fair indication of the cut quality of the diamond. In one practical embodiment, the cut grading system is fully automated and computer-implemented.
Application

WO06036937A2: SYTEM AND METHOD FOR GEMSTONE CUT GRADING See US20060074588A1

USD518752: Gemstone incorporating incised image of a dolphin

Applicant: Udco & Co.

Publication: 11/04/2006

Filed: 10/02/2005

Contents: The ornamental design for a gemstone incorporating incised image of a dolphin, substantially as described and shown.
Granted

USD518753: Gemstone incorporating incised image of sea ray

Applicant: Udco & Co.

Publication: 11/04/2006

Filed: 10/02/2005

Contents: The ornamental design for a gemstone incorporating incised image of sea ray, substantially as described and shown.
Granted

US20060062446A1: System and method for three-dimensional location of inclusions in a gemstone

Applicant: none

Publication: 23/03/2006

Filed: 21/09/2004

Contents: The present invention presents a non-destructive method and means of obtaining either the inner portion or the outer contour of a two-dimensional or three-dimensional model of the outer contours of a gemstone. The method comprising the steps of placing the gemstone on a holder such that the gemstone to be scanned is located in a radiation path comprising inter alia at least one emitter and at least one detector synchronized by a processor; radiating said gemstone by means of said emitter; detecting the emitted irradiation by means of said detector; processing said detection such that a two-dimensional in-scan of said gemstone is obtained by means of said processor; displacing the gemstone in respect to said emitter and said detector; repeating steps (b) through (e) for a plurality of predetermined displacements; and, if a three-dimensional model is required, integrating the obtained multiple two-dimensional in-scans into a three-dimensional model of the gemstone's outer contours; wherein the emitter is an irradiation delivery device, selected from a

WTOCD

group consisting of either monochromatic or white light, UV or IR emitters; X-ray radiation source and/or collimator of the same; NMR, CT, NQR and/or MIR scatters; beta radiation emission devices; gamma radiation emission devices; laser beam cannons; photons cannons; microwave or RF emitters; sonic or ultrasonic emitters or any combination thereof.

Application

WO06033102A1: A SYSTEM AND METHOD FOR THREE-DIMENSIONAL LOCATION OF INCLUSIONS IN A GEMSTONE cfr. US20060062446A1

US20060065187A1: Ultratough CVD single crystal diamond and three dimensional growth thereof

Applicant: This invention was made with U.S. government support under grant number EAR-0135626 from the National Science Foundation and instrument number DE-FC03-03NA00144 from the U.S. Department of Energy. The U.S. government has certain rights in the invention.

Publication: 30/03/2006

Filed: 09/09/2005

Contents: The invention relates to a single-crystal diamond grown by microwave plasma chemical vapor deposition that has a toughness of at least about 30 MPa m^{1/2}. The invention also relates to a method of producing a single-crystal diamond with a toughness of at least about 30 MPa m^{1/2}. The invention further relates to a process for producing a single crystal CVD diamond in three dimensions on a single crystal diamond substrate.

Application

US20060066877A1: Capture and display of image of three-dimensional object

Applicant: none

Publication: 30/03/2006

Filed: 30/09/2005

Contents: A system and method for modeling three-dimensional objects such as diamonds and other gemstones. A three-dimensional finite-element model obtained by, for example, analysis of boundaries of the object in photographs taken from multiple perspectives with frontal lighting or silhouette lighting, or by analysis of structured-light photographs of the object taken from multiple perspectives, is combined with color or grayscale information obtained from photographs of the object. Enhanced or "false" color can be used to improve the viewing experience or to emphasize particular features of the object. A computer can rotate the model about arbitrary axes according to the desires of a viewer.

Application

US20060065016A1: Coatings for gemstones and other decorative objects

Applicant: Azotic Coating Technology, Inc.

Publication: 30/03/2006

Filed: 16/11/2005

Contents: The invention provides a decorative object comprising a transparent or translucent substrate having a body and at least one surface bearing a thin film coating. The coating imparts in the substrate a body color that appears substantially constant at different angles of observation. This body color is imparted in the substrate at least in part by absorption of visible radiation that is transmitted through said coating. The coating includes a high absorption layer comprising film that is highly absorptive of visible radiation. Also provided are methods of coating gems and other

WTOCD

decorative objects, as well as methods of heat treating coated gems and other decorative objects.

Application

US20060068106A1: Methods for coating gemstones and other decorative objects

Applicant: Azotic Coating Technology, Inc.

Publication: 30/03/2006

Filed: 16/11/2005

Contents: The invention provides a decorative object comprising a transparent or translucent substrate having a body and at least one surface bearing a thin film coating. The coating imparts in the substrate a body color that appears substantially constant at different angles of observation. This body color is imparted in the substrate at least in part by absorption of visible radiation that is transmitted through said coating. The coating includes a high absorption layer comprising film that is highly absorptive of visible radiation. Also provided are methods of coating gems and other decorative objects, as well as methods of heat treating coated gems and other decorative objects.

Application

WO06025043A2: AN IMPROVED METHOD OF A GEMSTONE WORKING MEMBER BALANCING AND AN APPARATUS FOR THE SAME

Applicant: ISRAEL DIAMOND TECHNOLOGY LTD

Publication: 09/03/2006

Filed: 17/07/2005

Contents: Disclosed is a method and apparatus for balancing a gemstone working member. The method is a sequence of predefined operations that uses masses attached to the working member to introduce a certain unbalance and as balancing masses. The apparatus is part of a gemstone working machine and uses an accelerometer as a vibration sensor. It receives the amplitude of the introduced vibrations and provides the counterweight values and their angular positions.

Application

USD516939: Gemstone

Applicant: Mayflower Diamonds, Ltd.

Publication: 14/03/2006

Filed: 25/08/2003

Contents: Design. Round.

Granted

USD516940: Precious stone

Applicant: none

Publication: 14/03/2006

Filed: 17/11/2004

Contents: Design. Stone on a pin.

Granted

US7010938: Microinscribed gemstone

Applicant: Lazare Kaplan International, Inc.

Publication: 14/03/2006

Filed: 12/08/2004

Contents: A microinscribed gemstone such as a diamond is inscribed by a laser beam to graphitize a surface portion of the gemstone without damaging a bulk portion.

Granted

EP1097107B1: A METHOD OF ALTERING THE COLOUR OF A MATERIAL

Applicant: Sellschop, Jacques Pierre Friedrich

Publication: 01/03/2006

Filed: 23/06/1999

Contents: A method of altering the colour of a carbon material such as diamond includes the steps of exposing the material to irradiation of an energy suitable to cause the photonuclear transmutation of selected atoms into other atoms capable of producing a colour change in the material, the irradiation being such as to cause transmutation of sufficient of the selected atoms into the other atoms to produce a colour change in the material. The method can be used to impart a blue colour to diamond or bleach or reduce the colour of a yellow diamond. The irradiation will generally be achieved using photons.

Granted

US7009762: Gem microscope having a swivel base and a stationary power cord

Applicant: Gemological Institute of America, Inc.

Publication: 07/03/2006

Filed: 07/09/2004

Contents: A gem microscope includes a base structure that supports the microscope stage, focus column, and optical head. The base structure includes a lower component that receives a power cord; the lower component and the power cord remain stationary when the gem microscope is in use. The base structure also includes an upper component rotatably coupled to the lower component. The upper component can rotate around the lower component to enable convenient sharing of the gem microscope by a number of users. The base structure includes an electrical coupler assembly that maintains an electrical connection (for the gem microscope power supplies) throughout rotation of the gem microscope.

Granted

EP1474273B1: LASER MACHINE FOR EXAMINATION, PLANNING AND MARKING RAW DIAMOND

Applicant: Patel, Arvindbhai Lavjibhai

Publication: 08/03/2006

Filed: 01/10/2002

Contents: A laser machine for examination, planning and marking a raw diamond characterised by comprising a laser scanning device, a 3-D scanning system, a specific die, a marking device, an electronic assembly with a computer program for accessing the weight of diamond in carat and availability of number(s) and size of diamond(s) in raw diamond.

Granted

USD516457: Round gemstone

Applicant: Diarough N.V.

Publication: 07/03/2006

Filed: 10/09/2003

Contents: Design. Round.

Granted

USD516585: Natural or artificial gemstone or ornamental object made of glass

Applicant: Swarovski Aktiengesellschaft

Publication: 07/03/2006

WTOCD

Filed: 28/12/2004

Contents: Design.

Granted

USD515968: Precious stone

Applicant: none

Publication: 28/02/2006

Filed: 03/11/2004

Contents: Design. Round.

Granted

JP2005261862A2: GEMSTONE HOLDER AND ACCESSORY USING THE SAME

Applicant: IRIKURA KIKINZOKU KOGEI

Publication: 29/09/2005

Filed: 22/03/2004

Contents: The gemstone holder is composed of a fine wire body. Claw parts are formed in an upper part of an annular member which has a smaller diameter than a girdle diameter of the cut gemstone. The annular member abuts on the pavilion of the cut gemstone, and the claw parts are so bent that the crown of the cut gemstone is pressed for holding the cut gemstone.

Application

US20060047585A1: Method and apparatus for viewing the visual properties of a gemstone on a packaging unit

Applicant: none

Publication: 02/03/2005

Filed: 24/11/2004

Contents: A method of displaying a visual representation of a product on a packaging unit arranged to contain the product, the packaging unit comprising a display device, a memory device and a memory port arranged to hold the memory device, the method comprising the steps of: storing information related to the product in the memory device; fitting the memory device into the memory port; and arranging the display device to display the stored information.

Application

EP1630770A1: Method and apparatus for viewing the visual properties of a gemstone on a packaging unit

Applicant: Overseas Diamonds Technologies N.V.

Publication: 01/03/2005

Filed: 26/08/2004

Contents: A method of displaying a visual representation of a product on a packaging unit arranged to contain the product, the packaging unit comprising a display device, a memory device and a memory port arranged to hold the memory device, the method comprising the steps of: storing information related to the product in the memory device; fitting the memory device into the memory port; and arranging the display device to display the stored information.

Application

EP1630549A1: Method for gemstone tracing

Applicant: Jacobs, Ivo

Publication: 01/03/2005

Filed: 26/08/2004

Contents: The present invention relates to a method for tamperproof relating a gemstone originating from a rough stone to said rough stone, comprising the steps of (1)

WTOCD

assigning to said rough stone a parental IDp; (2) cleaving or sawing a table facet to said rough stone; (3) assigning a first descendant IDd to said rough stone provided with a table facet; (4) processing said rough stone provided with a table facet into a gemstone; (5) assigning a further descendant IDd to said gemstone; and (6) tamperproof relating each descendant IDd mutually and to the parental IDp.

The present invention further relates to a method for tamperproof relating at least two gemstones originating from one rough stone to said rough stone, comprising the steps of (1) assigning to said rough stone a parental IDp; (2) splitting, e.g. by cleaving or by sawing, said rough stone in at least two parts for further processing into at least two gemstones, thereby forming a table facet to each of the at least two parts; (3) assigning a first descendant IDd to each of said at least two parts; (4) processing said at least two parts into at least two gemstones; (5) assigning a further descendant IDd to each of said at least two gemstones; and (vi) tamperproof relating each descendant IDd mutually and to the parental IDp.

Application

JP2005288071A2: STRUCTURE AND METHOD FOR INSTALLING PRECIOUS STONES

Applicant: BEAKOORU JAPAN

Publication: 20/10/2005

Filed: 31/03/2004

Contents: A short tubular member is provided with a diameter-reduced section in the middle and is formed integrally by a rim section that flares out at the top and a diameter-widened section at the bottom. A precious stone is fixed by compulsorily impacting it at the position of the diameter-reduced section inside the short tubular member and the short tubular member is implanted and fixed by compulsorily impacting it into an installing hole bored on a mounted member such as watch cases and watch bands.

Application

US20060037360A1: Stone cut and method of making

Applicant: none

Publication: 23/02/2006

Filed: 17/10/2005

Contents: A stone cut and method for cutting a stone that increases the number of facets on the stone as well as the scintillation, brilliance, and light reflectivity of the stone. The stone cut and method includes cutting angles and increasing the number of facets that, either separately or together, manage the external and internal light flow dynamics of a round cut diamond to a higher level of efficiency, effectiveness, and performance.

Application

US20060037361A1: Jewelry made of precious a morphous metal and method of making such articles

Applicant: none

Publication: 23/02/2006

Filed: 21/11/2003

Contents: Jewelry and methods of making jewelry containing a precious metal-base alloy component in bulk-solidified amorphous phase are provided.

Application

US7000607: Gemstone and corresponding method of cutting

Applicant: none

Publication: 21/02/2006

WTOCD

Filed: 02/03/2004

Contents: A gemstone having a crown, a girdle and a pavilion, wherein the girdle is shaped such that, when viewed in plan view, it is primarily bounded by four pairs of parallel straight edges. Three of the four pairs of edges are spaced by roughly equal spacing D1, while the remaining pair of edges is spaced by a spacing D2, wherein D2 is greater than D1 by between 10% and 40%. Also provided is a method for cutting such a gemstone.

Granted

USD514471: Diamond

Applicant: M. Fabrikant & Sons, Ltd.

Publication: 07/02/2006

Filed: 22/04/2004

Contents: Design. Cut cornered square.

Granted

USD514472: Diamond

Applicant: Diamintangibles International, Ltd

Publication: 07/02/2006

Filed: 07/06/2004

Contents: Design. Round.

Granted

USD514977: 73 Facet butterfly gem

Applicant: Rosy Blue, N.V.

Publication: 14/02/2006

Filed: 01/07/2004

Contents: Design. The ornamental design for a 73 facet butterfly gem, as shown.

Granted

USD514978: Gem stone

Applicant: none

Publication: 14/02/2006

Filed: 29/07/2004

Contents: Design. Round.

Granted

US20060026991A1: Method for cutting diamond and diamond proportion

Applicant: none

Publication: 09/02/2006

Filed: 20/07/2004

Contents: To provide a diamond rendering reflective light off the table goldenly brilliant by making a proportion thereof symmetry at any place viewed from an upper face, a side face or a bottom face, first reference lines, second reference lines crossing the first reference lines at right angles and third reference lines equally dividing the first reference lines and the second reference lines into four equal parts, respectively are provided. A first arc line is made by intersections of the reference lines. The approximately regular hexadecagon shaped table is established by connection of the intersections of the reference lines with the first arc line. Fourth reference lines dividing the third reference lines into two equal parts and a second arc line with a circle concentric with and larger than the first arc line is made. Star facets are established by connection of the intersections among the fourth reference lines and the second arc line with the top of the table. Upper main facets are established by connection of intersections of a diamond outward appearance and the first and the third

WTOCD

reference lines with intersections of the fourth reference lines and the second arc line.

Application

USD514013: Victoria cut jewel

Applicant: Gitanjali Gem Limited

Publication: 31/01/2006

Filed: 28/04/2004

Contents: Design. Round.

Granted

USD513714: Gemstone

Applicant: K.P. Sanghvi & Sons

Publication: 24/01/2006

Filed: 19/05/2004

Contents: Design. Marquise.

Granted

US20060020524A1: System and method for enabling jewelry certification at local jeweler sites

Applicant: none

Publication: 26/01/2006

Filed: 29/07/2005

Contents: A system and method for managing retail sales of jewelry items and providing customers with warranties concerning their purchased jewelry items is disclosed. In at least some embodiments, the system includes means for recording information relating to the retail sales of jewelry items by a primary company to customers. The system also includes means for providing customers with certificates relating to their respective purchased jewelry items, where each of the certificates represents a warranty with respect to at least one of the purchased jewelry items, and where the warranty is backed by a secondary company. The system further includes means for allowing access to at least some of the recorded information subsequent to purchase transactions, where the recorded information in at least some circumstances includes pertinent certificate information.

Application

USD514014: Gemstone

Applicant: none

Publication: 31/01/2006

Filed: 08/06/2004

Contents: Design. Heart shape.

Granted

USD514015: Almond shaped diamond

Applicant: Nelson Jewellery Arts Company Ltd.

Publication: 31/01/2006

Filed: 02/11/2004

Contents: Design.

Granted

USD514016: Natural or artificial gemstone or ornamental object made of glass

Applicant: Swarovski Aktiengesellschaft

Publication: 31/01/2006

WTOCD

Filed: 28/12/2004

Contents: Design.

Granted

US6990833: Faceted circular cut diamond

Applicant: none

Publication: 31/01/2006

Filed: 23/09/2002

Contents: A circular cut diamond, with appropriate dimensions, to greatly enhance the brilliancy, scintillation, and dispersion of a circular cut diamond and to produce a larger-looking diamond per unit volume as compared to the current standard Ideal Cut.

Granted

US6990736: Methods for preparing jewelry articles comprising sintered tungsten carbide

Applicant: none

Publication: 31/01/2006

Filed: 08/04/2003

Contents: System, apparatus, and method for making composite articles including jewelry rings. Jewelry items such as finger rings, bracelets, earrings, body jewelry, and the like, are examples of such articles. Medical, dental, and industrial devices or components are other examples. Wear resistant jewelry apparatus and method of making same wherein articles of jewelry are made from sinterable metal and/or ceramic powder materials compressed into a predetermined configuration and then sintered to form a blank from which a jewelry item may be made and to which softer precious metals, stones, crystals or other materials suitable for use in jewelry may be affixed. Such items of jewelry may have multiple facets and can be fabricated using various disclosed techniques and various combinations of materials. Method of manufacturing an article including jewelry rings.

Granted

US20060000236A1: Jewelry arrangement

Applicant: none

Publication: 05/01/2006

Filed: 01/11/2004

Contents: A jewelry arrangement is described having a base and first and second gemstones connected to the base arrangement, and a method for creating the same. The first and second gemstones may each have a tapered pavilion. The pavilion of the second gemstone points outwardly from the base arrangement, and in a different direction than the pavilion of the first gemstone. The jewelry arrangement may have the second gemstone positioned between the first gemstone and the wearer of the ring, such that the pavilions of the first and second gemstones are positioned in an adjacent, spaced-apart orientation relative to each other. The jewelry arrangement may further be provided with first and second gemstone connection arrangements adapted to hold first and second gemstones to the base arrangement.

Application

USD513478: Diamond

Applicant: ONYX DIAMONDS LTD

Publication: 10/01/2006

Filed: 05/08/2004

Contents: The ornamental design for diamond, as shown and described.

Granted

JP2005231022A2: METHOD AND DEVICE FOR POLISHING DIAMOND

Applicant: TOKYO METROPOLIS

Publication: 02/09/2005

Filed: 28/10/2004

Contents: Polishing is performed by pressing a polishing tool to which ultrasonic wave is applied, to the surface of diamond, and efficiently generating frictional heat by ultrasonic wave to eliminate carbon of diamond surface crystal. The polishing tool comprises a bar-like member and a tip part of curved shape at the tip. Further, liquid/solid or its mixture having lubricity is interposed at a contact surface between the polishing tool and the diamond surface to perform polishing. Agglutination around the polishing surface is thereby prevented, and polishing efficiency is increased.

Application

JP2005247686A2: METHOD FOR MANUFACTURING COLORED DIAMOND BY ION INJECTION AND HEAT TREATMENT

Applicant: KOREA ATOM ENERG RES INST

Publication: 15/09/2005

Filed: 03/03/2005

Priority: 04/03/2004

Contents: In the method for manufacturing the colored diamond by ion injection, the method for manufacturing the colored diamond comprises a process for accelerating ions under vacuum and injecting them into the surface of a diamond and a process for heat-treating the diamond into which the ions have been injected. In this method, ions capable of inducing optical bandgap change in the diamond are injected, thereby, the colored diamond can be easily manufactured at a low cost in comparison with a conventional ion injection method comprising injecting metal ions, and further, by subjecting the injected diamond to heat treatment, a uniform hue can be imparted to the diamond. Further, in this method, it is possible to inject one or more kinds of ions in a mixed state and to produce diamonds showing various colors. A permanent coloring effect can be obtained by ion injection and heat treatment conditions.

Application

JP2005261862A2: GEMSTONE HOLDER AND ACCESSORY USING THE SAME

Applicant: IRIKURA KIKINZOKU KOGEI:KK

Publication: 29/09/2005

Filed: 22/03/2004

Contents: The gemstone holder is composed of a fine wire body. Claw parts are formed in an upper part of an annular member which has a smaller diameter than a girdle diameter of the cut gemstone. The annular member abuts on the pavilion of the cut gemstone, and the claw parts are so bent that the crown of the cut gemstone is pressed for holding the cut gemstone.

Application

JP2005263592A2: DIAMOND SINGLE CRYSTAL SUBSTRATE

Applicant: SUMITOMO ELECTRIC IND LTD

Publication: 29/09/2005

Filed: 22/03/2004

Contents: The diamond single crystal substrate is characterized in that the intensity of light emission peak at 575 nm in an electronic beam luminescence spectrum or in a photoluminescence spectrum measured at a measuring temperature of ?40K is not lower than two times and not higher than ten times of the maximum intensity in the

WTOCD

intensity of a peak at arbitrary wavelength in a range of 200-900 nm and in the intensities of back ground over the whole surface as shown in Figure, and the full width at half maximum of the peak at 575 nm is 2.5 nm.

Application

US6980283: Method and associated apparatus for the standardized grading of gemstones

Applicant: Imagestatistics, Inc.

Publication: 27/12/2005

Filed: 25/05/1999

Contents: A method and associated apparatus for the standardized grading of gemstones is provided. The system gauges the spectral response of a gemstone subject to a plurality of incident light sources within an imaging apparatus. The operation of the imaging apparatus is controlled by an instruction set of a local station control data processor. Light energy data is captured in the form of pixel data sets via a charge coupled device of the imaging apparatus of the local station. The control data processor data of the local station is operably linked to analysis station. Gemstones qualities are analyzed by the plurality of light sources of the imaging apparatus and quantified relative to model pixel data sets of the database and recorded for future reference therein.

Granted

WO05120772A2: A METHOD OF WORKING GEMSTONES

Applicant: ROMEDIX LTD.

Publication: 27/12/2005

Filed: 15/05/2005

Contents: Disclosed is a method of gemstones working enabling rapid gemstone working member exchange and gemstone processing sequence continuation without the need to level the gemstone or the working member. The apparatus includes a rotatable support having an axis of rotation and a registering feature. The registering feature precisely positions and aligns an interchangeable abrading article so that its working surface rotates in a predetermined plane, which has fixed position relative to the gemstone.

Application

USD513205: Lemon shaped diamond

Applicant: Nelson Jewellery Arts Company Ltd.

Publication: 27/12/2005

Filed: 02/11/2004

Contents: The ornamental design for an lemon shaped diamond, as shown and described.

Granted

USD513393: Jupiter cut jewel

Applicant: Gitanjali Gems Limited

Publication: 03/01/2006

Filed: 28/04/2004

Contents: Design. Pentagon.

Granted