Individual Analysis
of
Negligible, Incremental and Notable Innovations
**Product Category:** Application for questioning in networks

**Summary of Invention:** A method for facilitating questioning in a network from a website server includes receiving an input from a user; generating, a package based on the input. The package includes at least a question processing function or an answer-processing function or both. The question-processing function includes at least a question or a question template or both. The answer processing function facilitates formatting of an answer in response to a received question. The method also includes providing the package to at least a questioning electronic device or an answering electronic device or both.

**Diagram:**

**Product / Process/ Product & Process –** Product & Process

**Level of innovation:** (Incremental to Breakthrough) -

**Reason/Remarks:** The patent overcomes the following limitations which reduces the difficulty in comprehending the question or an answer for the question; should prevent the wastage of time and effort for drafting the question/answers and manually selecting the communication addresses of the network entities to which the question is to be sent and should eliminate the requirement of any additional pre-installed software components for implementation of the method.
Product Category: Video camera/cable drape

Summary of Invention: An improved video camera/cable drape for surgery comprising of an elongated and flattened tube of a flexible sterilizable material having an insertion opening and an exit opening at opposite ends thereof wherein the said tube supporting a folded plastic sleeve.

Diagram: Not Available

Product / Process/ Product & Process – Product

Level of innovation: (Incremental to Breakthrough) -

Reason/Remarks: According to the prior art the above product was difficult and time consuming to manufacture and it needs special techniques for folding. But this development provides cost effective, simple, easy and quick to manufacture.
**Product Category:** Emtricitabine

**Summary of Invention:** A dry process for preparing stable pharmaceutical compositions of emtricitabine and combinations thereof. In particular, the compositions have reduced levels of desaminoemtricitabine (a major degradation product of emtricitabine), total impurities and related substances.

**Diagram:** Not Available

**Product / Process/ Product & Process –** Process

**Level of innovation:** (Incremental to Breakthrough) -

**Reason/Remarks:** Emtricitabine, (-) cis FTC, is a synthetic nucleoside analog and is chemically described as [5-fluoro-1(2R, 5 S)-[2-(hydroxymethyl)-1, 3-oxathiolan-5-yl] cytosine]. Emtricitabine is indicated, in combination with other antiretroviral agents for the treatment of HIV-1 infection in patients. Thus, the patent tries to overcome the limitation of the prior art.
Product Category: Air Wiper

Summary of Invention: An air wiping header adapted for high surface quality of strips comprises header box means defining plurality of arms extended to a predetermined distance, plurality of nozzles located on the header box. The nozzles have appropriate spacing among each other such that spray of adjacent nozzles is suitably overlapped. Plural flange means (are operatively placed on the box means almost at ends of the arms. An improved air wiping system helps to arrest carryover on cold rolled strip surface.

Diagram:

Product / Process/ Product & Process – Product

Level of innovation: (Incremental to Breakthrough) -

Reason/Remarks: Modified air wiping system provides an efficient and effective air wiping system in the tandem mill so as to reduce the substantial amount of carryover residues on strip surface and reduce the diversion on account of black patch and improvement in surface quality.
Product Category: Sensor

Summary of Invention: A method of preparing pre-soldered and pre-molded sensor strain gauge for measurement of applied stress on a component comprising the steps of placing a sensor gauge on a glass bottom on covering the whole face of the gauge by double sided tape, placing around the tape covered strain gauge a O ring, soldering the open ends of a 25 pin connected male connector cable to the soldering tabs of the strain gauge and completely molding the strain gauge along the space between the gauge and the O-ring with a suitable agent and allowing the agent to get set and installing the said soldered and molded sensor strain gauge on the surface of a component by a suitable adhesive at any location for measurement of applied strain on the component.

Diagram:

Product / Process/ Product & Process – Process

Level of innovation: (Incremental to Breakthrough) -

Reason/Remarks: The objective of the method of preparing a pre-soldered and pre-moulded sensor strain gauge is to enable easy installation of strain gauges in difficult access locations apart from protection against damages.
Product Category: Francis turbines

Summary of Invention: The bottom ring and the curved plate are made separately and the latter is bolted to the former. Now in case of the component needing replacement as a result of erosion damage, only the curved plate can be changed, while retaining the main body of the lower ring. If the machine is designed for runner removal from bottom then even dismantling of generator is also eliminated. Thus this design facility in quick replacement of the component and reduction in downtime of the machine there are saving in electricity generation loss.

Diagram:
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<tr>
<td><strong>Title</strong></td>
<td>Collapsible bucket trap for insects</td>
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<tr>
<td><strong>Field</strong></td>
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<td><strong>Sub-field</strong></td>
<td>Mechanical</td>
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**Reason/Remarks:** Design of bottom ring of guide apparatus for Francis turbines facilitate easy replacement of eroded curved plate of bottom ring of guide apparatus for those Francis type turbines, which operate in water containing hard slit particles.

**Product Category:** Insect trap

**Summary of Invention:** The collapsible bucket trap for insects consisting of a lower container having an outwardly projecting rim at its top; an upper container provided with at least one entry holes for insects, and having an inwardly projecting rim at the bottom to hold the lower container and an outwardly projecting rim at the top. A flat lid with one eyelet and a downward projecting rim at its bottom for placing it tightly on the bucket. A lure holder at the centre of the lower portion of the inner wall of the lid for attaching the pheromone dispenser, at least one additional lure holder attachment to facilitate use of pheromone dispensers hung from the middle of the lid. To reduce the bulk during transportation the bucket is moulded in 2 parts, with the lower container sliding into the upper container to make it collapsible.

**Diagram:**

![Diagram of the collapsible bucket trap for insects](image)

**Product / Process/ Product & Process –**

**Level of innovation:** (Incremental to Breakthrough) -
Reason/Remarks: Collapsible bucket trap is a known product. The invention is incremental because it overcomes the prior art, and the invention provides economical, easy and effective trapping system as well as easy to transport.

Product Category: al2o3-sic-c refractories

Summary of Invention: the development of AI2O3-SiC-C refractories based lining design for hot metal transfer ladle and ladle for hot metal transfer comprising AI2O3-SiC-C refractories based lining structure of predetermined shape to reduce mouth jam and bottom build-up. More specifically, it is concerned with the design of hot metal transfer ladle having lining of AL2O3-SiC-C bricks in mouth area and AI2O3-SiC-C castable in top ring and spout. The new lining design contributes for lesser mouth jam and bottom build-up for easy deskulling. The use of AI2O3-SiC-C refractories based lining reduced greatly the maintenance repairs, allowing lower cost, reducing men hour/power need, saving energy and refractory material, improving the availability and the safety for the operation.

Diagram: Not Available

Product / Process/ Product & Process – Product & Process

Level of innovation: (Incremental to Breakthrough) -
The suitable preheatable insulating refractory liners. Heretofore no satisfactory preheatable heat-insulating refractory liner has been developed which can overcome the problems aforementioned.

**Product Category:** Zr bearing steel

**Summary of Invention:** A process for improving castability of Zr-bearing steel for continuous casting. The process steps comprises selecting a batch composition of raw material comprising C, Mn, Si, N, Cr, S, P, Zr, Al, Fe selected in specific wt %. The batch composition is melted for liquification to form liquid steel and pouring said liquid steel from ladle into a tundish of continuous casting machine. The liquid steel from the tundish is poured to the mould of continuous casting machine, and cast into slabs of desired cross-section.

**Diagram:** Not Available

**Product / Process/ Product & Process – Process**

**Level of innovation:** (Incremental to Breakthrough) -
Reason/Remarks: the clogging behaviour is due to the formation of complex Al-Zr-oxinitride. Crusty meniscus is due to formation of high-melting ZrOz, A1203, ZrN, and low meniscus temperature. The viscous mould slag formation is due to deterioration of mould slag during casting operation. It has been found that this viscous slag is responsible for lack of lubrication and eventual breakout.

Product Category: Cable device for meter

Summary of Invention: An improved cable device has prewired and preconfigured suitable multi core cable with connectors at both ends. Connector IEC-62056-21/PACT/ANSI optical or RJ11, RJ-45, USB, RS-232 9Pin /15 Pin connector or combination of both optical & hardwired connectivity provided between meter and the connector on cover or base of the meter box. One end of cable device is connected to meter and other one to connector on meter box. This ensures that seals are not tampered with and meter box not opened for meter data downloading using MRI.

Diagram:

Level of innovation: (Incremental to Breakthrough) -
**Reason/Remarks:** An improved cable device for meter data downloading, the presence of the sensor system avoids the tampering of the seal every time the meter box is to be opened for connecting the MRI to the meter.

**Product Category:** Urea based inclusion complex

**Summary of Invention:** Urea based inclusion complexes of nicorandil, carvedilol, gliclazide and gilpizide and the processes that provide compositions of sparingly soluble and/or moisture sensitive drugs in the form of urea based inclusion complexes in the presence of a suitable Rapidly Adductible Endocyte. The compositions are characterized by improved pharmaceutical characteristics like increased aqueous solubility, improved stability and better flow characteristics.

**Diagram:**

![Diagram](image)

**Product / Process/ Product & Process –** Product & Process

**Level of innovation:** (Incremental to Breakthrough) -
Reason/Remarks: Urea based inclusion compound process have been known for a long time. Improvement is done on the pharmaceutical characteristics like increase aqueous solubility, improved stability and better flow characteristics.

Product Category: Hydro cracking

Summary of Invention: A method of hydro cracking carbonaceous matter involves producing small molecular weight organic compounds from carbonaceous material involving the steps of contacting the carbonaceous material with carbon monoxide and steam in presence of a shift catalyst at a predetermined temperature and pressure.

Diagram: 

[Figure 4c Lignin degradation with CO after 60 min]

Product / Process/ Product & Process – Process

Level of innovation: (Incremental to Breakthrough) -
**Reason/Remarks:** Hydro cracking is a known process. The increment done is that the hydro cracking can be done at a pressure of 10-20 atm pressure. Whereas in prior art process hydro cracking is done at a 300 atm pressure. As well as reduces the operating pressure inside the reactor, and brings down the Hydrocracking process cost effective.

**Product Category:** Volatile products

**Summary of Invention:** A process preparing acarbonaceous material which can be used as staring material for either pyrolysis and/or gasification, by which tar formation can be eliminated. A process of preparing a catalyzed carbonaceous material, said process comprising the steps: soaking a carbonaceous material in a soluble metal salt solution, drying the carbonaceous material of the previous step and raising the temperature of the carbonaceous material to a temperature sufficient to decompose the metal salt to its oxide and/or carbonates to obtain a catalyzed carbonaceous material, wherein the soluble salt is capable of decomposing into oxide and/or carbonates at a temperature which is below the decomposing temperature of the carbonaceous materials.

**Diagram:** Not Available

**Product / Process/ Product & Process –** Process

**Level of innovation:** (Incremental to Breakthrough) -
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<tbody>
<tr>
<td>Title</td>
<td></td>
<td></td>
<td>An insect handling device</td>
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<tr>
<td>Field</td>
<td></td>
<td>Sub-field</td>
<td>Mechanical</td>
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**Reason/Remarks:** Pyrolysis and Gasification is a known process. Improvement is done on a process of making carbonaceous material which is used as a starting material for pyrolysis or gasification, by which formation of tar is prevented.

**Product Category:** Insect handling device

**Summary of Invention:** An insect handling device is disclosed. The device comprises a rigid platform having at least two holes, a guiding means fitted in a first hole and projecting up the platform, an inner container placed over the said platform, a plurality of ridges or protrusions provided on top of platform or bottom of a lid of inner container, a hole in the lid or in a wall of the said inner container accommodating the projected end of the guiding means, an outer container capable of withstanding vacuum and being fitted in an air tight manner on to the platform, and an insect collecting tube. One end of the tube having a nozzle for collecting insects and the other end passing through the guiding means into the inner container

**Diagram:**

**Product/Process/Product & Process – Product**

**Level of innovation:** (Incremental to Breakthrough) -
Reason/Remarks: An insect handling device allows the user to handle the insects without injuring them.

Product Category: Turbine seal fin

Summary of Invention: Turbine seal fin system is used in caulking wire form casings, which can be subject to distortion, without damaging the groove shape in the casing. The casings of the turbine, Low Pressure, Intermediate Pressure or High Pressure (both inner and outer) are unbolted at the horizontal half joint, the top half is rotated such that the half joint face is uppermost and supported off the floor. The rotor is removed. This exposes the seal fins. They are located in sets between the fixed blades. The caulked wire to be removed so as to release the worn fin for replacement with a new fin runs along one side of the fin.

Diagram:

Product / Process/ Product & Process – Product

Level of innovation: (Incremental to Breakthrough) -
**Reason/Remarks:** Turbine seal fin refurbishment system allows machining the old fins to a low height to ensure full access for wire removal. The efficient removal of the wire or a significant section thereof, to ensure it has no capability to still hold the fin in place.

**Product category:** Armour panel

**Summary of Invention:** A lightweight composite armour panel for vehicle and body armour with ceramic hard facing and fibre composite backing. A hard ceramic layer is sandwiched between a thin layer of polymeric facing material and a thick layer of fibre composite backing material. The hard ceramic layer comprises of refractory such as alumina, zirconia and their composites and the backing composite layer is made of fabrics such as dyneema, kevlar and S2 Glass. The armour panels are fabricated by compression moulding of fabric or fabric - polymer resin pre preg and ceramic tiles or fabric - thermoplastic resin and ceramic tiles.

**Diagram:**

![Diagram of composite armour panel](image)

**Product / Process/ Product & Process –**

**Level of innovation:** (Incremental to Breakthrough) -
Reason/Remarks: Multi-hit capability composite armour panel and method of preparation is to provide a composite armour panel. Further provides a composite armour panel light weight and higher protection capability against various threat levels and suitable for body armour and vehicle armour application.

Product Category: Solar power collection device

Summary of Invention: A modular hybrid device for collecting the thermal and PV energy from solar rays in its concentrated form, the device comprises of a parabolic trough reflector made of glass mirror or linear Fresnel lens, a receiver made of glass tube includes a steel pipe along its axis and solar cells positioned at the focal plane with a drive mechanism for sun tracking. The drive mechanism comprises of a worm and worm wheel reduction gear, light detecting resistors and convex lens.

Diagram:

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<tr>
<td>Total concentrated solar power (Thermal &amp; PV) collection by a single device</td>
<td>Engineering</td>
<td>Mechanical</td>
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Level of innovation: (Incremental to Breakthrough) -
**Reason/Remarks:** The patent integrates the PV energy and the thermal energy devices together which does not allow the harness of the intense sun energy. This integration reduces the size of the device and reduces the cost.

**Product Category:** Gene promoter

**Summary of Invention:** A gamma kafirin gene promoter of sorghum bicolor Var. M35-1 comprising minimum and essential cis acting elements containing three essential motif, viz one prolamin box, two GLM (GCN-4 like motif) and a method for expressing it for the temporal and spatial expression of genes comprising operably linking the nucleotide sequence to a promoter comprising SEQ IDNO1 and operably linking the nucleotide sequence encoding signal peptide with a promoter comprising SEQ IDN02, wherein different cis acting elements were amplified, cloned using different combinations of the primer as described herein and the amplified promoter is fused with (3-glucuronidase encoding gene from PCAMB1A-1304 vector at the place of CaMV35S promoter to produce an expression cassette and generating a transgenic plant comprising the expression cassette, the transformation method being a biolistic or Agrobacterium mediated one.

**Diagram:** Not Available

**Product / Process/ Product & Process –** Process
Product Category: Carbon networks

Summary of Invention: The synthesis of carbon coils by catalytic chemical vapour deposition (CCVD) technique in the absence of magnetic field and promoter. The method as disclosed in this development is eco-friendly as it does not utilize sulphur compounds or phosphorous compounds as promoters.

Diagram:

Product / Process/ Product & Process – Process

Level of innovation: (Incremental to Breakthrough) -
Reason/Remarks: The patent overcomes the limitation of prior art including the dosage is reduced so that it does not strongly affect the morphologies of the carbon products. The phosphorous and sulphurous compounds promoters are important for the synthesis of carbon coils toxic and have a very unpleasant smell are not used.

Product Category: Drug

Summary of Invention: Citraazine a synthetic stimulant is obtained by blending Piperazine citrate with carriers MAP and KNO₃ or trace element along with Succinic and Acetyl Salicylic Acid with sequestering agent HEDP, the resultant in liquid, powder or granule form for use in Horticulture.

Diagram:

Product / Process/ Product & Process – Product

Level of innovation: (Incremental to Breakthrough) -
Reason/Remarks: Synthetic simulator is a known product. Improvement is done on the quality and self-life. The invented product also works on both flowering and non-flowering plant.

Product Category: Communication device and application

Summary of Invention: System for managing communications between sub-systems of a communication device. The subsystems include a Radio Frequency Integrated Circuit (RFIC) and a Baseband Integrated Circuit (BBIC). The BBIC includes a processing engine, a state machine module and an interface module. The method includes initializing a Digital Radio Frequency Third Generation (DigRF3G) interface between the RFIC and the BBIC. Processing engine is kept functionally inactive during the initialization process of the DigRF3G interface. Further, the method includes exchanging one or more packets between the RFIC and the BBIC.

Diagram:

Product / Process/ Product & Process – Product & Process

Level of innovation: (Incremental to Breakthrough) -
**Reason/Remarks:** The patent overcomes the limitation of the prior art entry and exit by providing a sleep mode which is accomplished by a low power sequencer present in the communication device. The low power sequencer is a digital circuit, which is useful in synchronization of various processes in the communication device.

**Product Category:** Sensor

**Summary of Invention:** A system architecture can support delivery of a wide variety of content in light of current shopper context. The context can include such conditions as a shopper's current in-store location information. A rich context supporting a wide variety of conditions can be supported, including shopper in-store location, shopper history (e.g., shopper purchases in current shopping trip, a past shopping trip, or both), shopper in-store shopping path, and the like. Shopping business events can be generated based on information derived from sensors, from other shopping business events, or both. Both static and real-time operation can be supported. Content can be delivered in a personalized, shopper-specific manner, according to any condition indicated in the current context. Content directed to non-shoppers, such as out-of-stock notifications can also be supported on the same network.

**Diagram:**

**Product / Process/ Product & Process –** Product & Process

**Level of innovation:** (Incremental to Breakthrough) -
**Reason/Remarks:** The patent overcomes the limitation of the prior art.

**Product Category:** Organic thermal stabiliser

**Summary of Invention:** A method of preparing new organic thermal stabilizer comprising the steps of, subjecting the post consumer (PET) waste to the step of aminolysis with organic compound selected from Ethylenediamine and methylamine in the presence of a catalyst, mixing the reactants in a reaction vessel and sealing it at a temperature of 20 to 50°C; filtering and washing the white precipitate; subjecting the said precipitate to the step of washing and drying.

**Diagram:** Not Available

**Product / Process/ Product & Process – Process**

**Level of innovation:** (Incremental to Breakthrough) -
Product Category: Plasticizer

Summary of Invention: A method for the preparation of the plasticizer comprising the steps of subjecting the PET waste to the step of alcoholsysis in presence of a catalyst to obtain a reaction mixture, stirring the said reaction mixture continuously for a considerably period of time to produce a yellow viscous solution of the plasticizer.

Diagram: Not Available
Reason/Remarks: Plasticizer is also one of the major additives used in the compounding of PVC. It provides flexibility to PVC products. A low cost plasticizer has also been developed from Post-Consumer Waste.

Product Category: Measuring Device

Summary of Invention: A method for measuring a dimension of a component comprising a measurement stage for measuring the dimension, a component being positioned into a target position in the measurement stage to enable measurement of said component dimension wherein positioning of the component into the target position for measurement is achieved by vibration.

Diagram:
**Reason/Remarks:** The manual labour is employed to measure the dimensions of manufactured components by use of precision gauges. The quality requirement is not achievable using manual methodology. The method provides more accurate measurement than the manual or current robotic measurement.

**Product Category:** Communication Application

**Summary of Invention:** A method for establishing a communication session between a calling party and a called party is disclosed. The calling party is registered with a first domain and the calling party is registered with a second domain. The method, at the first domain, includes receiving a request from the calling party to establish the communication session. Further, the method includes acquiring a certification associated with the first domain from a global trusted entity. The certification can authenticate an identity of the first domain to ensure authenticity of the calling party. Furthermore, the method includes transmitting an invite to the second domain to establish the communication session. Moreover, the method includes establishing the communication session after the second domain ascertains the authenticity of the certification based on an interaction with the global trusted entity.

**Diagram:**

**Product/Process/ Product & Process – Product & Process**

**Level of innovation:** (Incremental to Breakthrough) -
Reason/Remarks: The patent overcomes the limitations in the prior art and allows the receiver to identify caller saved in the domain.

Product Category: Immunotherapy

Summary of Invention: Immunogenic composition comprises antigen presenting cells and sperm associated antigen 9 (SPAG9) protein is disclosed. Also disclosed a method of using such composition for enhancing cell based immunotherapy, especially cancer immunotherapy. The Method also include also includes administering the composition to a target site.

Diagram: Not Available

Product / Process/ Product & Process – Process

Level of innovation: (Incremental to Breakthrough) -
Reason/Remarks: Traditional methods of treating cancer include use of non-invasive or mildly invasive diagnostic tests, biopsy, histological examination and so on. However, each of these tests have their own limitations and hence the search for new methods of diagnosis and - treatment of cancer. Hence, there is a need in art to develop immunotherapeutic methods and compositions which are useful for the treatment of cancer.

Product Category: Antibody Production

Summary of Invention: The antibodies are used in the treatment of cancer. The antibodies specifically bind to the tumour cells where they can inhibit proliferation, migration, invasion, adhesion and malignant properties of cancer cell.

Diagram:

Product / Process/ Product & Process – Process

Level of innovation: (Incremental to Breakthrough) -
Reason/Remarks: Production of antibodies against a particular cell is a known method. The same method is utilized for production of antibodies against cancer cell.

Product Category: Recombinant Human gene

Summary of Invention: Recombinant human Granulocyte Colony Stimulating Factor (G-CSF) and describes a new process for high-level expression, a simple, economically feasible, largely scalable production of RPG-CSF— from bacterial cells. The invention comprises of the development of transcriptional and translational conditions of G-CSF gene to improve the level of protein expression resulting in the increase of specific and volumetric product yield. The Product Category yield in batch mode fermentation is 68mg/L/OD and the level of protein expression is 45% on total cellular protein. The volumetric product yield in fed batch mode fermentation is 4.2 g/L.

Diagram: Not Available
Reason/Remarks: Many prior art patents describe various aspects of expression and purification of G-CSF protein from different expression systems like prokaryotic and eukaryotic cells.

**Product Category:** Immunotherapeutic agent

**Summary of Invention:** The area of immunotherapy and provides a cancer vaccine. More specifically, the invention relates to a vaccine comprising new antigen SPAG9, epitopes, and analogs thereof and DNA sequence encoding the said peptide or portions thereof. The invention further relates to methods of detecting, diagnosing and treating cancer in a subject.

**Diagram:** Not Available

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<tr>
<td>New immunotherapeutic method for treatment of cancer</td>
<td>Biotechnology</td>
<td>Medicine</td>
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</table>

**Product / Process/ Product & Process –** Process

Level of innovation: (Incremental to Breakthrough) -
Reason/Remarks: Production of immunotherapeutic agent against a particular cell is a known method. The same method is utilized for production of immunotherapeutic agent against cancer cell.

Product Category: Purification of Protein

Summary of Invention: Recombinant human Granulocyte Colony Stimulating Factor (G-CSF) and describes a new purification process for a simple, economically feasible, largely scalable production of pharmaceutically acceptable grade product with high recovery of rhG-CSF expressed from bacterial cells. The invention comprises of the conditions for isolation of protein inclusion bodies; complete refolding in to native form, purification of the protein by two-step chromatography and diafiltration. The end product of this invention viz. high purity G-CSF is suitable for direct injectable use. The efficiency of the protein recovery is 52% with more than 99% of monomer purity

Diagram:
Reason/Remarks: The patent overcomes the limitation of the prior art and provides an efficient method for purification of the protein. Thus, increasing the overall percentage of protein purified.

Product Category: Valve

Summary of Invention: A mechanical heart valve as a replacement for diseased failed heart valves and in particular to an improved, safe, sturdy, long-lasting mechanical heart valve and the artificial valve for aortic, mitral, tricuspid and pulmonary position, said valve having a metal stent with three equidistant commissural posts, said metal stent having a first cover of silicon tube and a second outer cover of reversed PTFE, and three leaflets sutured individually to the PTFE cover of metal stent using PTFE sutures.

Diagram: Not Available

Product / Process/ Product & Process – Product

Level of innovation: (Incremental to Breakthrough) -

○ ● ○ ○ ○
Reason/Remarks: A synthetic durable valve, which has the advantageous features of mechanical and biological valves known in the prior art, but not having the problems existing in the two types of valves and provides a synthetic valve from a set of materials which are biochemically inert and biocompatible with the body.

Product Category: HIV Therapy

Summary of Invention: A monolithic tablet formulation comprising: a) a nucleotide analog reverse transcriptase inhibitor (NtRTI); b) a non-nucleoside reverse transcriptase inhibitors (NNRTI); c) a nucleoside analog reverse transcriptase inhibitors (NRTI) and d) one or more pharmaceutically acceptable carriers or excipients. The pharmaceutical formulation comprising: a) nucleotide analogs reverse transcriptase inhibitors (NtRTIs); b) nucleoside analogs reverse transcriptase inhibitors (NRTIs) and d) one or more pharmaceutically acceptable carriers or excipients.

Diagram: Not Available

Level of innovation: (Incremental to Breakthrough) -
Reason/Remarks: The patent application allows the known drugs to be combined in a specific manner to produce a monolithic tablet giving the same effect as each of the tablets when administered individually.

Product Category: Power Supply

Summary of Invention: A power supply system for electronic devices and more particularly to an uninterrupted power supply system for computers, televisions and medical equipment’s. Disturbances can vary from voltage changes of very short duration to total loss of supply for a considerable period, resulting in the loss of computer data and, in some instances, actual damage to electrical equipment.

Diagram:

Level of innovation: (Incremental to Breakthrough) -
Reason/Remarks: The above invention provide a cost effective and compact power supply system that can be housed within the appliance. It also gives very good backup time than the UPS. It also overcome the drawback of the prior art.

Product Category: Tissue Culture

Summary of Invention: Cartilage-chondrocytes, which can be used to treat diseases associated with bone and cartilage can be obtained by a method for cultivating cartilage-chondrocyte cells characterized in that the method comprises the steps of embedding the cartilage-chondrocytes within an aqueous solution in a low temperature sol state wherein the aqueous solution contains at least a hydrogel-forming polymer showing thermo-reversible sol-gel transition and wherein the aqueous solution is in a sol state at a low temperature and is in a gel state at a high temperature; heating the said aqueous solution to cultivate the said cartilage-chondrocyte within the said hydrogel in a high temperature gel state so that the cartilage-chondrocytes spread and grow; cooling the said hydrogel to return from the gel state to a low temperature sol state; and collecting the spread and grown cells derived.

Diagram: Not Available

Product / Process/ Product & Process – Process

Level of innovation: (Incremental to Breakthrough) -
Reason/Remarks: The use of tissue culture for culturing of cells is a known process but the use in culturing of cartilage cells in a better way is new but incremental in nature.

Product Category: Coal Tar

Summary of Invention: A method for continuous production of clean tar of consistent quality by selective horizontal decanter centrifuge and subsequently the said clean tar is used to produce customized binder pitch, impregnating pitch and zero QI (Quinoline Insoluble) pitch deploying vertical bowl separator. This development is also directed to separation of very fine particles of size in the range of zero to less than 5 microns, known as spheroids and cenospheres, produced during cracking reactions at coke ovens at high temperatures followed by polymerization and poly-condensation reactions, employing vertical bowl separator, removing both carbonaceous and non-carbonaceous refractory particles from the tar.

Diagram:

Product / Process/ Product & Process – Process

Level of innovation: (Incremental to Breakthrough) -
Reason/Remarks: There was a persistent need for developing a process for producing clean tar free of any sludge or moisture from crude tar and also to separate out very fine, even less than 5 micron in size, carbonaceous and non-carbonaceous particulates, from said clean tar such as to favour onward production of customized binder pitch and zero QI pitch, for advantageous use in graphite electrodes for aluminium industries and the like.

Product Category: Sensor

Summary of Invention: An angular position sensor device comprising: variable aperture to pass light. The aperture has a variable opening with respect to the angular position. As shown in figure 1(a) and figure 1(b). A method for determining angular position comprising steps of: passing light through variable aperture, detecting the light by photodetector(s) and determining the angular position using the detected light; and system.

Diagram:
**Reason/Remarks:** According to prior art all the mentioned inventions are using 2 light source and 2 light detectors to perform the task which is expensive and complex compared to the above invention which is far simple in its construction and use only on light source and one light detector to do the task.

**Product Category:** Protection Ring

**Summary of Invention:** A rotor for a permanent magnet generator. The rotor includes a cup-shaped case with a plurality of permanent magnets mounted on its cylindrical wall. The permanent magnets are positioned on a positioning ring provided inside the case. The permanent magnets extend in an axial direction of the case and are circumferentially spaced apart from each other. Leading edges of the permanent magnets are provided with a chamfer. A circumferential ring is disposed on the leading edges of the permanent magnets and is crimped with the case. Optionally, the circumferential ring is attached to the permanent magnets by a suitable adhesive. An inner surface of the circumferential ring is also provided with a chamfer that aligns with the chamfer on the permanent magnets.

**Diagram:**

<table>
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<tr>
<th>Year of filing</th>
<th>Appln No</th>
<th>Patent No</th>
</tr>
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<tbody>
<tr>
<td>2007</td>
<td>267/CHE/2007</td>
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<tr>
<th>Title</th>
<th>Field</th>
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<tr>
<td>Protection Ring</td>
<td>Engineering</td>
<td>Mechanical</td>
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</table>
Summary of Invention: A process for the isolation and identification of a new compound 3-hydroxymethyl xylitol (Compound I) from the root of *Casearia esculenta* (Roxb.) based on bioassay-guided fractionation to control diabetes. CH2OH I CHOHI HO -C -CH2OH I CHOHI CH2OH Compound I Structure of the isolated compound was determined on the basis of 1H, 13C NMR, MS and FT-IR. 3-hydroxymethyl xylitol (3-HMX) was administered at different doses for 15 days to normal and streptozotocin (STZ) induced diabetic rats. It was found that the 3-HMX significantly decreased the plasma glucose concentration and also increased plasma insulin levels. This development evidences that 3-hydroxymethyl xylitol (3-HMX) possesses antidiabetic effects in STZ-induced diabetic rats.

Diagram:
**Product Category:** Versioning files

**Summary of Invention:** Techniques are presented for versioning files. Base files are acquired for files on a primary volume. At configurable points in time changes to the files are noted on different volumes, these changes are represented as deltas. The deltas are stored on an archive volume and represent versions and a version history for the files.

**Diagram:** Not Available
**Reason/Remarks:** Versioning or archive services typically store an entire file, even if only a single byte of information is changed between versions of the file. This obviously not very space efficient and is also not very processor efficient, since the processor has to access, store, index, and retrieve the entire file for each version of the file being retained in the archive volume.

**Product Category:** Product Design Platform

**Summary of Invention:** Although cost of one rural bridge is very small compared to large and complicated bridges but larger incidence of rural bridges in any small geographical region necessitates optimal design of every part of such bridges to be done by the aid of computer. It is absolutely necessary to go for computer aided design for meeting provisions of all codal requirements still having the lowest possible cost of the bridges.

**Diagram:** Not Available
A low cost, reproducible and easy to use Indian currency denomination identifier for the blind

**Reason/Remarks:** The patent just uses the already known Computer aided design software for building of rural bridges.

**Product Category:** Denomination identifier

**Summary of Invention:** In the report a low cost, reproducible and easy to use currency denomination identifier for the blind is disclosed. The product consists of two plates, a base plate, and a flap hinged together. The product helps in discerning different denominations on fixing two degrees of freedom of note. The breadth of the note is fixed on the embankment present at base plate. The length is fixed on aligning the note along the hinge between the two plates. Excess length of the note is folded to the backside of the base slate. The denomination of the note is determined by reading the Braille written along the periphery where the note ends.

**Diagram:** Not Available
Product / Process/ Product & Process – Product

Level of innovation: (Incremental to Breakthrough) -

![Diagram](image)

Reason/Remarks: The product is simple, light weight, easy to produce and use. Its production price is expected to be INR 2.

Product Category: Television system

Summary of Invention: An improved interactive television system is provided with a controller comprising a user interface module for receiving input commands from a user and for enabling a chat bot operation or a daily manager operation, and their available options like medicine scheduler, budget manager, and event scheduler. The controller also performs the tasks of a database storage unit for storing database for the chat bot and updates for the daily manager. A control unit processes said user inputs for searching or updating the database, and for displaying the query or operation results obtained after processing the user inputs.

Diagram:
**Product / Process/ Product & Process – Product**

**Level of innovation: (Incremental to Breakthrough) -**

![Circle Diagram]

**Reason/Remarks:** The television system remains the same but an additional application has been added which allows video chatting and other operational menu.

**Product Category:** Rosuvastatin calcium

**Summary of Invention:** This development relates to an improved process for preparing (E)-7-[4-(4-fluorophenyl) - 6-isopropl-2-methysulfony amino pyrimdin-5-yl 3R, 5S-, 5-di-dihydroxyhept-6--enoic acid calcium of Formula I,

**Diagram:**

![Chemical Structure Diagram]
**Level of innovation: (Incremental to Breakthrough) -**

Reason/Remarks: The patent overcomes the limitation of the prior art that is the intermediate A not obtained in the pure form and thus the further purification of the intermediate A is a tedious process which the above patent overcomes.

**Product Category: Table**

Summary of Invention: a compact, modular, rotator, rotary table for use in machining centres having several functional and structural sub-assemblies including a turn table assembly, an worm shaft assembly, a brake assembly, a home reference assembly, a motor assembly, an electrical assembly, a sheet guard assembly, a pneumatic assembly, a miscellaneous assembly and an optional special brake assembly. These sub-assemblies act in conjunction to provide a reliable design, which is capable of flexible machining.

Diagram:
Product / Process/ Product & Process – Product

Level of innovation: (Incremental to Breakthrough) -

Reason/Remarks: Machining accuracy is often compromised in the absence of rotary axes of motion. Also the special brake design provides a way to amplify torque in the system rendering it new when compared to older designs.

Product Category: Acoustic signal measurement

Summary of Invention: A method of estimating the reverberations in an acoustic signal comprises the steps of determining the frequency spectrum of the signal, providing a first parameter indicative of the decay of the reverberations part of the signal over time, and providing a second parameter indicative of the amplitude of the direct part of the signal relative to the reverberations part. An estimated frequency spectrum of the reverberations signal is produced using the frequency spectrum of a previous frame, the first parameter, and the second parameter. The second parameter is preferably inversely proportional to the early-to-late ratio of the signal.
Product / Process/ Product & Process – Process

Level of innovation: (Incremental to Breakthrough) -

Reason/Remarks: The patent overcomes the limitation of the prior art and is suitable for bond evaluation of soft and brittle, porous materials.

Product Category: Welding

Summary of Invention: The apparatus is fitted on to a main support plate, which is having a provision for a simple mechanical fastening means at its top portion for integrating with the submerged arc welding machine. A water-cooled copper shoe/backing plate is connected with a bottom support plate, thus enabling a synchronized movement of the assembly with the head of the submerged arc welding machine while welding. The cooper backing is
held under pressure towards a bottom side of the joint with the help of a biasing means comprising sleeves and spring

Diagram:

Product / Process / Product & Process – Product

Level of innovation: (Incremental to Breakthrough) -

Reason/Remarks: The prior art does not take into consideration the effect of oscillation of the welding head to cover wider root gap variations.

Product Category: Application

Summary of Invention: A system and method administers virtual servers executing on one or more physical storage systems. One or more virtual servers are created and associated with a management group. An administrator is then granted permissions to the group. Upon logging into management software, only information relating to the virtual servers associated with the group is displayed to the administrator, thereby limiting access to information related to other virtual servers and/or physical storage systems.

Diagram:
Product / Process/ Product & Process – Product & Process

Level of innovation: (Incremental to Breakthrough) -

Reason/Remarks: The attributes associated with the set of virtual servers assigned to the group are displayed in response to administration requests from the administrator, thus limiting access to information related to other virtual servers and/or physical storage systems as compared to the prior art.

Product Category: Welding

Summary of Invention: The electrically neutral and cold wire feeding leads to low metal deposition rates in Tungsten Inert Gas welding. The new invention addresses these factors. Since the electrode is connected to one of the polarities of the welding power supply and the non-consumable electrode to the other,
the arc is generated between these two enabling further deposition than cold wire which is not electrically connected as in conventional welding. Further, since the base metal is not electrically connected, the dilution is also considerably reduced due to lower base metal melting (penetration).

Diagram:

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<tbody>
<tr>
<td>Title</td>
<td>A soft seamless nitrile bladder for inflatable balls</td>
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<td></td>
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<tr>
<td>Field</td>
<td>Engineering</td>
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</table>

Product / Process / Product & Process – Process

Level of innovation: (Incremental to Breakthrough) -

Reason/Remarks: An improved arc welding method using a non-consumable electrode which creates a welding arc between the filler wire and the non-consumable electrode, thus overcoming the limitations of the prior art.

Product Category: Nitrile Bladder

Summary of Invention: The patent refers to a new nitrile seamless bladder for use in inflatable balls. The nitrile seamless bladder uses Carboxylated Acrylonitrile Butadiene Rubber latex and no other latex having improved mould design and relatively low modulus. The seamless body provides higher air retention property.


### Product / Process/ Product & Process – Product

**Level of innovation: (Incremental to Breakthrough)**

![Diagram]

**Reason/Remarks:** The conventionally available bladders in the market either possess low air permeability or have high bounce properties. There is always a need for the bladder that has low air permeability with satisfactory bounce properties in a seamless body ideal for inflatable balls which is served by the present invention.

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### Product Category: Welding

**Summary of Invention:** A process of welding of flat fins to tube of panels of boiler plant to produce a boiler tube assembly comprising the steps of longitudinal tack welding by stationary tubes (1) by conventional