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Textile Mill Waste Water and Solid Waste Converted into Biodiesel and Bio Composites and other Value AddedProducts.

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ABSTRACT

[700] Our Invention- factory Waste Water and Solid Waste born-again into Biodiesel. [702] Bio composites and alternative worth further things need solid waste, together with a combination of wet organic matter [704] and dry organic matter, separated victimization mechanical separation to get an upscale organic stream, wet organic matter, [706] and enriched dry organic matter streams. [798] The innovative technology additionally includes a definite wet organic stream, and a dry organic stream that's one by one born-again into a product which [710] will be revived or recycled victimization varied conversion technologies, [712] particularly appropriate for separate wet and dry organic streams. [714] The invention could be a technique for changing biomass from waste into helpful product by gasifying biomass to get synthesis gas [716] and changing the synthesis gas substrate into one or a lot of valuable products. The invention is changing biomass waste, together with municipal solid [718] waste, sewerage sludge, plastics, tires, agricultural waste, [720] and coal for helpful product like fermentation alcohol, hydrogen, and carboxylic acid. The invention additionally includes the biomass waste chemical process steps [722] to supply raw synthesis gas, cool [724] the synthesis gas, convert the synthesis gas into the required product victimization anaerobic biotransformation, so their recovery. [726] The technology of the current invention relates to the conversion of waste biomass to artificial gas containing carbon monoxide gas. Then the carbon monoxide gas is born-again to gas by the anaerobic being.

KEYWORD: Textile, Mill, Waste Water, Solid Waste, Converted, Biodiesel, Bio Composites, Value, Added, Products.

RESEARCH FIELD

[500] Our invention includes conversion of textile mill wastewater and solid wastes into biodiesel, bio composites, and other value added products applying the methods and systems for waste conversion and recycling.
[502] The invention relates to the conversion and recycling of solid wastes derived from commercial, industrial, or residential refuse.

RESEARCHBACKGROUND

[504] In addition, large amounts of hydrogen are required to produce alternative liquid fuels from coal, shale oil or tar sand. The current contract price for hydrogen delivered via a Gulf Coast pipeline is $ 1.85 per MCF and is largely dependent on the price of natural gas. Further increases in gas prices will proportionally increase hydrogen prices.

[506] In today's economy, the cost of hydrogen through catalytic processes is prohibitive, making the alternative liquid fuels no longer competitive. Consequently, coal conversion processes, the development of tar sands and oil shale are seriously hampered by the lack of cheap hydrogen. Developing these alternative energy strategies requires an economical process that produces large quantities of hydrogen.

RESEARCHOBJECTIVES

1. The objective of the invention is to a technology additionally includes a definite wet organic stream and a dry organic stream that's one by one born-again into a product which will be revived or recycled victimization varied conversion technologies particularly appropriate for separate wet and dry organic streams.
2. The other objective of the invention is to a could be a technique for changing biomass from waste into helpful product by gasifying biomass to get synthesis gas and changing the synthesis gas substrate into one or a lot of valuable products.
3. The other objective of the invention is to a changing biomass waste, together with municipal solid waste, sewerage sludge, plastics, tires, agricultural waste and coal for helpful product like fermentation alcohol, hydrogen, and carboxylic acid.

RESEARCHSUMMARY

[508] The description relates to waste treatment methods and systems comprising a mixture of wet organic material, dry organic material, and optionally inorganic materials. Systems and methods separate mechanically mixed solid waste to produce some wet organic stream rich in wet organic matter and some dry organic stream rich in dry organic matter. Each stream is processed individually to convert at least a portion of each stream into a renewable or recyclable product.

[510] Separated and recovered dry organic products are highly efficient raw materials for energy conversion. Moist organic products can be digested in an anaerobic digester to produce biogas or converted into compost for use as a soil conditioner.
[512] The biogas generated in the anaerobic digester can be compressed or liquefied for use as a transport fuel and used to generate electricity and heat for on-site use and for supply to the power grid and for conversion in a liquid fuel.
[514] Dry organics can be recycled and used or sold as organic biomass fuel to generate heat and electricity. Inorganic materials can be recycled and landfilled.
[516] The separation of dry organic, wet organic and inorganic materials optionally increases the efficiency of the downstream conversion technologies. In this way, moist organic matter can be converted more efficiently in an anaerobic digester.
[518] The removal of dry, indigestible organic and inorganic materials before loading into the digestive system increases the volume available for microbial cultures and biogas production. Similarly, the removal of wet organic and inorganic materials from dry organic matter increases the thermal conversion efficiency of dry organic matter because less energy is consumed in evaporating water and the burning material produces less ash.
[520] The systems and methods described here can handle large amounts of highly variable mixed waste. Systems and methods can efficiently extract recyclable materials from unclassified mixed waste (e.g. Black box for household waste), as household classified recyclable streams with high compliance (e.g. Blue box for household waste) and other solid waste such as variable commercial solid waste from retail, Light industry, warehouses, office buildings, etc.
[522] The methods and systems described herein can recover much larger proportions of various types of recyclable materials, organic materials for conversion to renewable fuels, and energy from variable waste streams than known systems.
[524] This ability is largely due to the mechanical separation of the separation of wet organic matter from dry organic matter and possibly inorganic materials by mechanical sorting such as grinders, volume separators, density separators and dimensional sorting devices, which leads to the formation of concentric material flows.
[526] Homogeneous raw material waste from which renewable energy and precious materials are mechanically extracted. Unlike conventional fuel derived fuel systems, the methods and systems of the present invention fragment and diffuse the waste material sufficiently to produce intermediate streams for efficient conversion.
[528] These features and other embodiments disclosed herein will become more apparent than the following description. With the present invention, a biological method is provided for converting waste biomass into useful products by gasification of biomass to produce synthesis gas.
[530] The synthesis gas into a useful product or intermediate product using one or more microorganisms that can convert a substrate of synthesis gas in one or more useful products such as hydrogen, acetic acid or ethanol.
[532] The second part of the current invention centered on shaping the best culture and bioreactor for gas production. to confirm the most effective potential development of the system, the cultures were tested for catalyst activity and gas production.
[534] Crops that promise gas production and greenhouse gas conversion are improved. Bioreactors that bring home the bacon High Mass transfer rates and high cell

concentrations are studied. Broken cell reactors and drop bed reactors square measure notably appropriate for this application.

[536] Advanced bioreactor ideas like solid-state fermentation, non-aqueous fermentation and hard-hitting fermentation are applied to those reactors to boost gas mass transfer. For this system, the corresponding retention times will be displayed in seconds. method style and economic evaluations of the assorted alternatives were accustomed guide the event of the current invention.

[538] The third step in the development of the present invention involved the study of synthesis gas sources, gasification processes and devices, and synthesis gas formulations to improve the overall process of converting waste biomass, including coal, municipal waste, sludge purification, and plastic.

[540] Tires, agricultural waste and fish waste and the like for useful products such as hydrogen, ethanol and acetic acid. The overall process includes the steps of gasifying the waste biomass to produce synthesis gas, converting the synthesis gas into the desired product or products using the fermentation of the anaerobic gas substrate and then recovering the products or products.

RESEARCHBRIEF DESCRIPTION

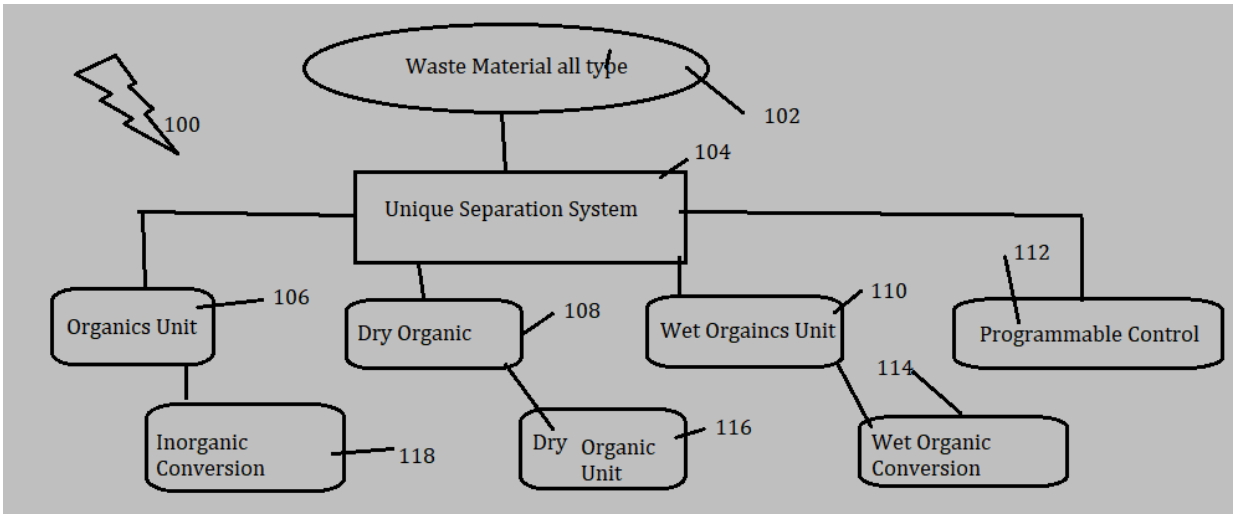

FIG. 1: IS A SCHEMATIC DIAGRAM OF A MECHANIZED SYSTEM FORCONVERTING MIXED DRY ORGANIC AND WET ORGANIC WASTE MATERIALS (AND OPTIONALLY INORGANIC MATERIALS) INTO HIGH VALUE PRODUCTS.

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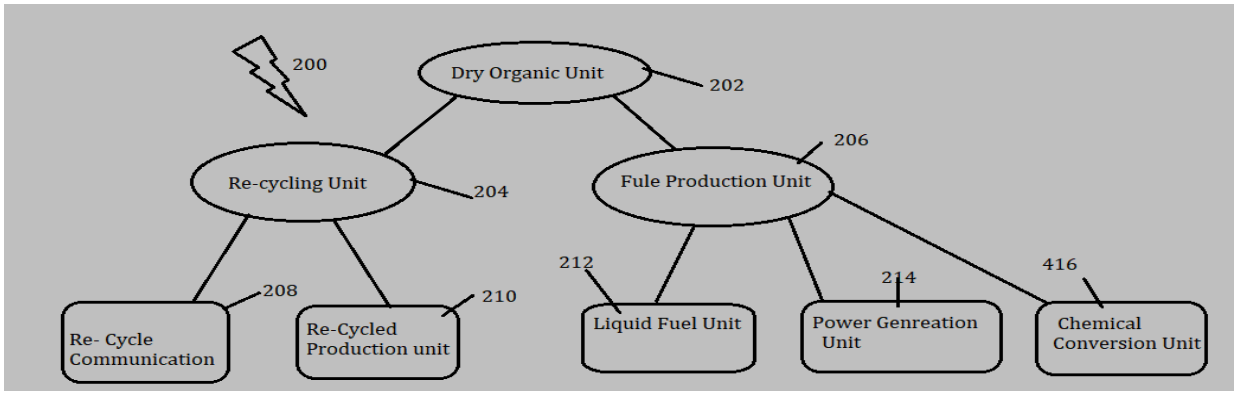

FIG. 2: IS A SCHEMATIC DIAGRAM ILLUSTRATING THE CONVERSION OPTIONS FOR PROCESSING DRY ORGANICS.

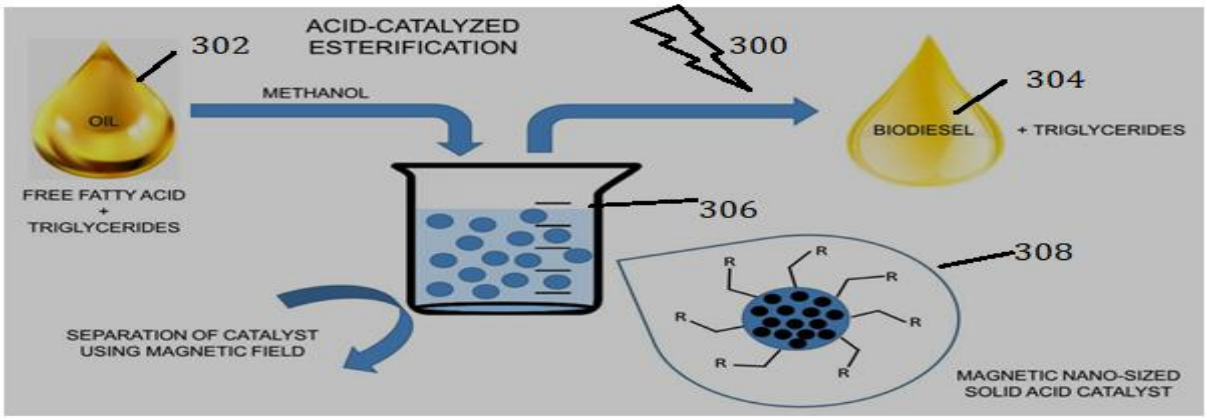

FIG. 3: IS A SCHEMATIC DIAGRAM ILLUSTRATING THE CONVERSION OPTIONS FOR PROCESSING WET ORGANICS.

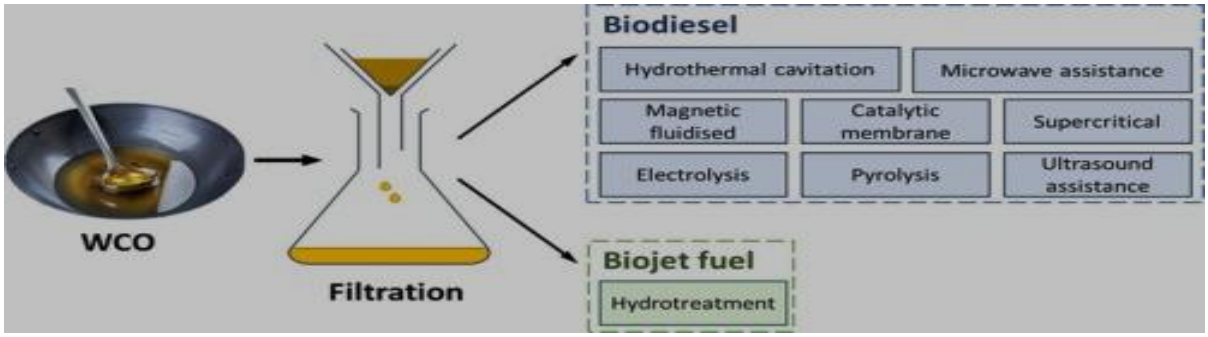

FIG. 4: IS A SCHEMATIC DIAGRAM ILLUSTRATING THE CONVERSION OPTIONS FOR PROCESSING INORGANICS.

RESEARCH DESCRIPTION OF THE INVENTION

Providing Solid Waste Stream:

[542] The waste streams used in the methods and systems described herein include mixtures of different types of solids. The waste stream includes renewable and recyclable materials, which can be used once separated from the type of material or waste, which is renewable and recyclable and thus has value.

[544] Municipal waste is a type of waste that mainly includes municipal waste with the addition of commercial and industrial waste, which is sometimes collected by city governments or contractors appointed by the city government, or by commercial or industrial companies in certain areas.

[546] Commercial solid waste is waste, such as waste, which is normally collected in businesses such as office buildings or commercial establishments. Industrial solid waste is found in the heavy industrial sector.

[548] Mixed waste can take the form of black bin waste where a small amount of renewable and recyclable material is disposed of by the waste source, or alternatively it can be recycled or blue trash, which contains a mixture of renewable and recycled waste.

[550] Mixed waste contains a number of components, which are valuable as renewable materials and can be recycled only when separated from other components. These renewable and recyclable materials can include many types of plastics; Fibrous materials include paper and paperboard;

[552] Metals include ferrous and non-ferrous metals such as brass and aluminum; glass; Textiles; wood; and rubber. The waste stream should contain 1, 2, 3 or more valuable materials, including but not limited to one or more paper, plastics and non-ferrous metals.

[554] Although small percentages of these materials may be valuable, separating renewable energy sources, which can be recycled from one another, and other components in mixed solid waste streams is a major challenge.

[556] The methods and systems described herein involve providing a mixed solid waste stream consisting of at least 10% wet organic matter and at least 10% mixed dry organic matter. Mixed waste streams can also include renewable and recyclable inorganic materials or non-renewable and non-recyclable materials.

[558] The amount of renewable and recyclable materials in rivers, the percentage of renewable and recyclable materials that are recovered, the cost of renewable and recyclable materials has a huge impact on the economic viability of extracting renewable and recyclable materials using automatic sorting (the higher the value, the more desirable).

[560] In one embodiment, the mixed waste stream comprises at least 10% by weight of dry organic waste selected from a typical three-dimensional arrangement of hard plastics, plastic films, paper, cardboard, textiles, rubber and wood.

[562] The mixed waste stream can include at least 10% by weight of wet organic matter selected from the food waste group (industrial, municipal or household kitchen waste), animal waste (e.g., animal waste such as human waste or other animal waste)., Green waste (for example, decorations from industrial, city or household yards or tree decorations).

[564] The ratio of wet organic matter to dry organic matter usually depends on the feed flow. In some cases, wet organic matter can be more concentrated than dry, or vice versa. However, in most cases, wet organic flow may occur more frequently due to food waste.

[566] Most of the waste stream can be renewable or recyclable. At least part of the waste stream may include materials that are recyclable or renewable. Mixed waste streams may contain at least 2.5%, 5%, 7.5%, or 10% recyclable plastics, less than 60%, 40%, 20% (by weight), or a range of any of the above. Lower weight than recycled plastics.

[568] The mixed waste stream can be in the form of wet organic waste, dry organic waste, or inorganic waste. In one embodiment, the weight percent of wet organic waste, dry organic waste and inorganic waste in the mixed waste stream (independent of one another) is at least 5%, at least 10%, at least 20%, at least 50% or at least 75 %.

[570] The mixed waste stream can include 0.5%, 1%, 2%, 3%, 4%, 5%, recyclable metals, less than 30%, 20%, 15%, 10%, 5% (by weight) or a combination. From previous top and bottom weight percentages for recyclable metal materials.

[572] The mixed municipal waste may be untreated municipal waste. For example, solid waste streams can be obtained directly from the municipal waste collection process. Alternatively, municipal waste can be partially recycled (for example by a home or business owner) to dispose of some materials which can be recycled or recovered.

[574] For example, municipal solid waste can come from the full flow of household or commercial waste containing residual materials, excluding sourced materials collected through recycling programs where a certain portion of the material that can be recycled is recycled and / or a renewable energy source.

[576] The mixed waste can be manually sorted to recover and remove elements which are difficult to grind or grind, which are clearly hazardous or sized (for example, easy to separate) and has a high recovery rate.

[578] Initial inspections can be carried out on the floor at the end of the facility before waste is introduced into the system, or it can be carried out by personnel on special

sorting lines. For example, waste can be measured on a pre-sorting conveyor, where manual work determines which items are pre-sorted.

[580] Pre-sorted items usually include items that can cause excessive wear on crushers or crushers. Examples include automotive engine blocks, structural steel, tire rims, propane tanks, concrete blocks, boulders, and the like.

[582] It is better to dispose of hazardous waste before tearing to avoid contamination by other ingredients in the mixed waste. Examples of clearly hazardous waste include containers for solvents, chemicals, paint cans, batteries and the like.

[584] Initial sorting can also be used to recover large and valuable items that can easily be recovered from mixed waste streams. Typically, recyclable materials that are recovered in the initial screening are elements that have a loading depth many times that of the process flow and can be easily seen and effectively removed manually.

[586] For example, large cardboard boxes (such as corrugated containers), structural metal components, and electronic waste (such as electronic waste) can be disposed of during the screening process.

[588] The percentage of substances in the mixed waste stream described above refers to the percentage of the waste stream immediately before crushing or by volume (i.e. after initial screening).

[590] As already mentioned, the method described here allows you to sort materials from MSW mechanically, even though waste contains a large proportion of non-recyclable materials.

[592] The low-value materials can be selected from the group consisting of wet organic matter, green waste, food scraps, gravel, fine materials less than 1 inch, asphalt, concrete, textiles, wood, rubber, plastic sheeting, plastics, shavings, and etc.

[594] Stone, used consumer goods, cheap glass (glass is too far from being recycled), composite materials (e.g. tennis shoes), other materials commonly found in solid waste, and their combinations.

[596] The techniques described here address long concrete structures but an unmet need to economically restore (i.e., sort mechanically) all or part of valuable recyclable materials or renewable energy in difficult-to-manage waste streams.

Comminution:

[598] Separating wet organic matter from dry organic matter will optionally embrace crushing or crushing mixed waste. Grinding (such as grinding or shredding) will increase

the potency of alternative processes like volume separation and density separation. sliced waste contains particles of various sizes.

[600] In one embodiment, the sliced waste stream has associate higher cut of sixteen "or less, 14" or less, twelve "or less, 10" below or eight "or less, or a bottom cut larger than 1", 2 ", 4", or 6 ". Or it will have the distribution of the highest.

[602] The highest and bottom cuts mentioned on top of. In one embodiment, the quantitative relation of the highest move all-time low cut could also be but eight, 6, or 4.

[604] The particle size distribution of the crushed material sometimes depends on its physical properties. for instance, some objects, like pallets or tires, are going to be crushed or sliced into comparatively massive particles.

[606] On the opposite hand, fragile materials like glass tend to interrupt simply, and food scraps that tend to tear simply are going to be terribly little once being torn.

[608] The device or device accustomed separate the mixed waste stream might have one or additional columns that embrace a series of cutting heads which will cut or crush waste to a preset size.

[610] Waste may be crushed or crushed by turning a rotor mounted with a cutting knife or knife to the body of a steel blade and so passing through a mill or device into a sieve basket (circular perforated plate or stripy sieve).

[612] Materials smaller than the required size have the screen and move to consecutive method step. sometimes objects that are overlarge to sift are sometimes processed through a chopping machine or device till they crumble into sizes which will have the sieve.

[614] A number of commercially on the market mills or solid waste plants are custom-made or may be custom-made for grinding primary solid waste streams. for instance, Aeroplan, LLC of division, North Carolina, manufactures a range of solid waste crushers which will be integrated into the system and employed by the ways delineated here.

Size Separation:

[616] Shredded waste may be transported to a meter apparatus that separates the mixed waste by volume to provide 2 or additional waste streams (for example, a minimum of a positive fraction and a fraction).

[618] Scaling may be performed to get a particular size waste stream with the specified particle size distribution to facilitate density-based separation and to get intermediate flows enriched with special reclaimable or renewable materials.

[620] Those competent within the art recognize that sliced waste streams may be analyzed to work out chunk size, within which stream bits separate differing kinds of fabric into totally different streams concentrating similar styles of waste into an additional or less focused stream.

[622] the meter waste stream will have a volume distribution with a fine to coarse quantitative relation of but concerning ten (i.e., associate higher limit to a lower quantitative relation but concerning 10), ideally but concerning eight or six, or 4.

[624] A fraction but concerning ten. subdivision in keeping with size, will have most size but concerning six ", 5", 4 ", 3", or a pair of "and over zero.5", 1 ", 2", 3 ", or any vary. Volume seal higher and lower anterior higher. higher cracks might have larger sections but sixteen ", 12", 10 ", 8" or six ", and smaller items larger than 2", 4 ", 6", 8 ", or a spread in one in all the previous higher and lower.

Density Separation

[626] One or additional massive waste streams may be divided by density to provide intermediate waste streams that are separately enriched with wet organic matter, dry organic matter or renewable specialty materials. though not needed, density separation is ideally distributed in a very separate equipment once the meter apparatus.

[628] Downstream density separation permits the employment of separators with characteristic density for fractions of a similar size, permitting the formation of separators of a similar density for a given material and flow.

[630] The density apparatus unit may be tag to separate specific materials within the mixed waste stream. Density separation may be accustomed separate differing kinds of materials, like wet organic matter dry organic matter and inorganic material, thereby enriching one.

[632] The variety of density separators may be accustomed any separate the intermediate waste stream. within the downstream density apparatus, the density phase is meant to phase the lower or higher fraction obtained from the upstream density apparatus.

[634] extra volume partitioning also can be performed on streams with separate densities. Separation supported volume and density is distributed till the media stream is satisfactorily and uniformly enriched with a particular reclaimable or renewable material to permit economic recovery of reclaimable or renewable material victimization automatic filtering instrumentality.

Metering to Control Flow Rates and Burden Depth:

[636] Optionally, the method may also include measurement of volumetric waste flow and intermediate waste flow throughout the system to achieve the desired mass flow rate

and batch depth. In an embodiment, the crusher, volumetric separator, density separator or mechanical sorter is separated by one or more conveyors containing a speed regulator.

[638] Variable speed control can be set to optimize mass flow through grinders, volumetric separators, density separators or automatic levelers to increase the amount, purity or cost of recoverable or renewable materials from the total.

[640] A system that provides a standardized and evenly distributed presentation of material on individual devices. One or more sensors located upstream, downstream, or in one or more system components can be used to monitor separation efficiency separation efficiency, separation purity and recovery of recyclable or renewable materials.

Conversion of Dry Organic Material:

[642] Several dry organic conversion technologies can convert the dry organic fraction into renewable products such as Fuel Recovered (RDF) or materials that can be recycled. Examples of suitable conversion methods include plasma arc thermal conversion, gasification, pyrolysis, biomass pyrolysis, plastic to oil conversion, biogas to liquid fuel (e.g., Fischer-Tropsch fuel), waste fuel, chemical conversion processes (e.g., PET to terephthalate plastic.)

[644] The dry organic matter can be converted into waste fuel by processing dry organic waste to obtain the desired moisture content and BTU value. In one embodiment, the dry organic matter can have a BTU value in the range from about 4000-15000, more specifically from about 5000-10.000, more specifically from about 6000-8000, and moisture content mentioned above.

[646] The biomass boiler can be configured to operate with a fluidized feed. Dry organic matter can be relatively light and easily liquefied for proper combustion in a biomass fluidized bed boiler. Using this type of biomass boiler in conjunction with an onsite power plant reduces compression and pelletizing costs, ensures efficient combustion in the boiler and allows the local use of electricity and waste heat, thereby increasing the calorific Value of dehydration.

[648] Dry organic matter can be used in the gasification process. Gasification can be carried out by reacting dry organic waste at high temperature (> 700 ° C) without combustion with a controlled amount of oxygen and steam to produce synthesis gas.

[650] Synthesis gas can be used in the future for fuel production. Several different gasification processes are available for use with dry organic waste. Examples of suitable gasification devices include a one-way, static bed gasification device, a fluidized bed reactor, a granular flow gasification device, and a plasma gasification device.

[652] Partially wet organic matter can be transformed by mechanical biological treatment, in which wet and dry organic matter is encapsulated and produces water to

reduce moisture content. Organic waste that has been dried can then be processed using one or more other conversion technologies.

[654] The method described here includes the recovery of various recyclable or renewable materials from intermediate waste streams using one or more automatic graders. The mechanical screening tool used depends on the specific material that can be recycled or can be renewed for recovery.

[658] Optical sorting can scan intermediate waste streams and determine whether the material being analyzed is a specific type of plastic, paper or glass. When detecting a particular material, the optical sorting device uses air directed through the hole to expel the targeted / specific material to produce one or more recycled products, such as recyclable PETE, recyclable HDPE recyclable plastics and recyclable plastics.

[660] Any optical sorter known in the industry will do. For example, an optical sorter could operate by scanning a free-falling waste stream with a camera sensor in one embodiment. Camera sensors detect material, and the air jet can then rapidly eject the material during free fall.

[662] Optical sorters use near-infrared, X-rays, and other scanning technologies to separate the target material from the mixed stream. Several optical types can be used in series or parallel. Optical sorter manufacturers include Ti-Tech Pellenc, MSS, NRT.

Conversion of Wet Organic Material

[664] Wet organic fractions can be processed by one or more conversion methods most suitable for materials with higher moisture content (e.g. more than 25 or 30% by weight). Water. Conversion methods appropriate for wet organic flow include damp or dry digestion, including anaerobic digestion, aerobic digestion and synthesis.

[666] The anaerobic digestive system's hydraulic retention time is less than 20 days, preferably less than 15 days, and most preferably less than about 10 days. Preferably, the anaerobic digestion system 126 should include a separate group of tanks that allow maintenance to be carried out without general maintenance.

[668] Wet organic matter can also be processed in the dry fermentation process, where wet organic matter can be placed in the digester alone or together with dry organic matter or other inorganic matter where moisture, under low oxygen conditions, seeps through the material, creating anaerobic conditions.

Recovery of Inorganic Material

[670] The intermediate waste stream is enriched with metals, as well as metallic element metals and nonferrous metals. Eddy current separators is accustomed recover nonferrous metals. Eddy current separators will recover nonferrous metals like Al -brass and copper.

[672] Examples of magnetic separators embrace roller magnets, cross belt magnets, header magnets, and therefore the like. Optical sorter, stainless-steel sorter, infrared sorter, area sorter, induction sorter, metal detection system, X-ray sorter and therefore the like is accustomed separate differing types of metals from one another to urge reusable merchandise.

[674] Rotation. reclaimable metal merchandise obtained by the ways and systems delineated herein is also designated from the cluster consisting of reclaimable nonferrous metal merchandise like Al-brass and different metals like iron and / or stainless-steel.

[676] The fractionation and mechanical sorting systems and ways delineated here square measure terribly helpful for convalescent valuable waste like nonferrous metals, likewise as paper and plastics. this stuff was difficult within the previous art system to extract and delineated mixed solid waste. standard systems typically fail to get rid of most paper, plastic.
[678] The nonferrous metals as a result of these materials cannot be removed mistreatment magnets. the employment of magnets in standard blending waste product treatment systems is renowned.Finally, the foremost reclaimable merchandise / materials (such as PET plastics, HDPE

[680] plastics, # 3-7 plastics, Al cans, untarnished steels, copper, copper, nonferrous metal alloys) typically have a really tiny proportion - from zero, 1 Chronicles to four-dimensional per ingredient to the overall quantity of mixed solid waste.

[682] the materials delineated here (e.g., preparation, sizing, measuring, blend and grading), it might be nearly not possible to recover these valuable reclaimable materials from low proportion materials within the waste stream combine.

[684] The techniques delineated here supply new, useful, and superior solutions to a long-standing waste management trade downside.

Systems for Separating Mixed Solid Waste

[686] Although it should be fascinating to recover all the elements of a solid waste stream considerably, the current invention includes Associate in Nursing embodiment within which not all or a part of the wet organic fraction, dry organic fraction, or inorganic fraction is totally separated within the product.

[690] for instance, in one embodiment, all or a part of the wet organic fraction, dry organic fraction, or inorganic fraction is discarded, whether or not mixed, adequately separated, or improperly separated, counting on the purity of calicular| half and market conditions for disposal of the part determined (for example, the film is also buried).

[692] Although several of the ways and systems delineated herein are delineated as involving density separation, those practiced within the art can perceive that in some embodiments adequate separation is achieved while not density separation if the waste stream is cut and therefore the volume is separated to provide an upscale Intermediate Flow of at

[694] The main disadvantage of biological processes, in general, could be a low reaction rate. The culture and bioreactors for this reaction were extensively studied and delineated later. A second retention time has been achieved for the bio chemical change reaction, creating method competitive with the chemical change process.

RESEARCH CLAIMS

1. [700] Our Invention- factory Waste Water and Solid Waste born-again into Biodiesel. [702] Bio composites and alternative worth further things need solid waste, together with a combination of wet organic matter [704] and dry organic matter, separated victimization mechanical separation to get an upscale organic stream, wet organic matter, [706] and enriched dry organic matter streams. [798] The innovative technology additionally includes a definite wet organic stream, and a dry organic stream that's one by one born-again into a product which [710] will be revived or recycled victimization varied conversion technologies, [712] particularly appropriate for separate wet and dry organic streams. [714] The invention could be a technique for changing biomass from waste into helpful product by gasifying biomass to get synthesis gas [716] and changing the synthesis gas substrate into one or a lot of valuable products. The invention is changing biomass waste, together with municipal solid [718] waste, sewerage sludge, plastics, tires, agricultural waste, [720] and coal for helpful product like fermentation alcohol, hydrogen, and carboxylic acid. The invention additionally includes the biomass waste chemical process steps [722] to supply raw synthesis gas, cool [724] the synthesis gas, convert the synthesis gas into the required product victimization anaerobic biotransformation, so their recovery. [726] The technology of the current invention relates to the conversion of waste biomass to artificial gas containing carbon monoxide gas. Then the carbon monoxide gas is born-again to gas by the anaerobic being**.**
2. According to claim1,2# the invention is to a technology additionally includes a definite wet organic stream and a dry organic stream that's one by one born-again into a product which will be revived or recycled victimization varied conversion technologies particularly appropriate for separate wet and dry organic streams.
3. According to claim1,2# the invention is to a could be a technique for changing biomass from waste into helpful product by gasifying biomass to get synthesis gas and changing the synthesis gas substrate into one or a lot of valuable products.
4. According to claim1,2,3# the invention is to a changing biomass waste, together with municipal solid waste, sewerage sludge, plastics, tires, agricultural waste and coal for helpful product like fermentation alcohol, hydrogen, and carboxylic acid.

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