

INNOVATIONS
in the field of recycling techniques

by Madeleine Wéry
Centexbel Patent Cell

PATENT ALERT

Recycling

Yarn manufactured from recycled clothing fibers and process for making same

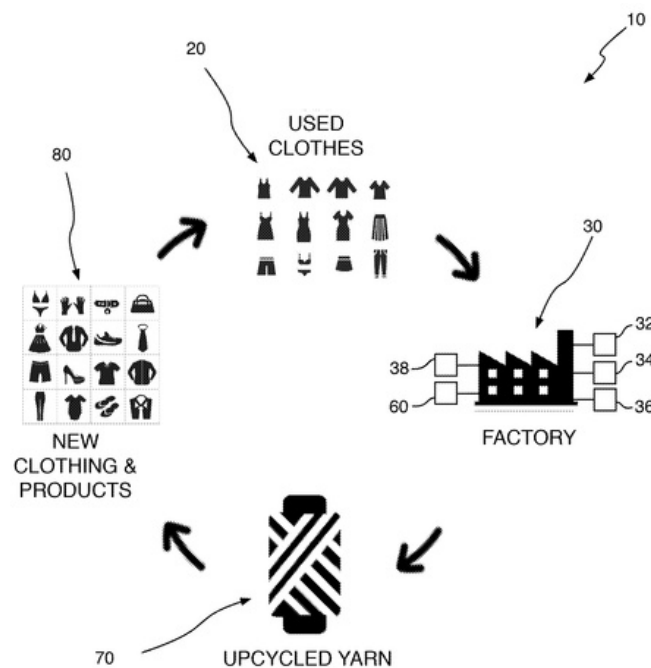
Patent # US20190316276

Date of publication: 2019-10-17

Applicant(s): ERMECHEO PATRICIA M

Assignee: ERMECHEO PATRICIA M

Yarn manufactured from recycled mixed clothing fibers and a process of making yarn manufactured from recycled mixed clothing fibers. Upcycled yarn has approximately 70%-95% of fiber from separated used clothes fibers, whereby separated used clothes fibers have cotton, polyester, nylon, silk, rayon, spandex, synthetic fibers, wool, hemp, carbon fibers, and/or linen. The upcycled yarn also has approximately 5%-30% other fibers that can be recycled fibers and/or virgin fibers, whereby the recycled fiber is recycled polyester from recycled plastic bottles and other sources, recycled cotton, recycled nylon from fishing nets and other sources, and the virgin fiber is nylon, spandex, virgin polyester, hemp, carbon fiber, and/or organic cotton.



Ink recycling in a textile printer

Patent # WO2020/003317

Date of publication: 2020-01-02

Applicant(s): TULIPMAN DAVID, MANN JACOB, ARTZI TOMER-PINHAS, MANO ILAN SHMUEL

Assignee: KORNIT DIGITAL LTD

A method of recycling ink used in non-printing nozzle dispensing operations in an ink jet printer, comprises collecting the ink from the non-printing operation in a collection tray, draining the ink from the collection tray into a closed cell, draining the ink from the closed cell, filtering the ink draining from the closed cell, and adding the ink back to a main ink supply after filtering, the main ink supply containing fresh ink. To maintain the quality of the ink supply the proportion of recycled to fresh ink may be limited to a maximum.

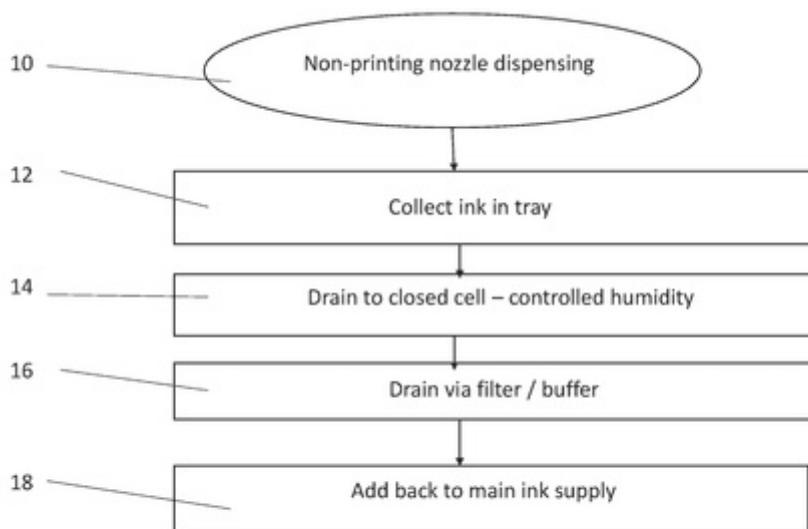


Fig. 1

Method for evaluating degree of cleanliness of recycled material, method for manufacturing recycled material, recycled pulp fiber, and method for manufacturing recycled pulp fiber

Patent # EP3712611

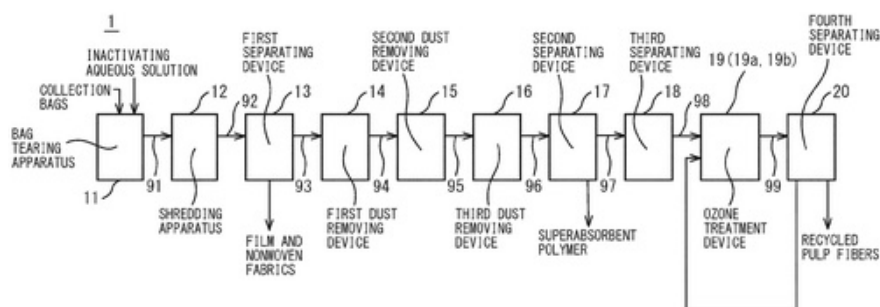
Date of publication: 2019-06-27

Applicant(s): IMAI SHIGEO, WADA MITSUHIRO

Assignee: UNICHARM

The objective of the present disclosure is to provide a method for easily evaluating the degree of cleanliness of recycled material derived from used sanitary products. The evaluation method according to the present disclosure has the following configuration. This method for evaluating a degree of cleanliness of recycled material derived from used sanitary products includes: a preparation step of preparing a dispersed aqueous solution in which the recycled material is dispersed in water; a separation step of subjecting the dispersed aqueous solution to centrifugal separation to separate the dispersed aqueous solution into a liquid component and a solid component; and a measuring step of measuring the concentration of protein in the liquid component using a protein measuring means.

FIG. 1



Method for stabilizing halogen-free thermoplastic recyclates, stabilized plastic compositions, and molding compounds and molded parts produced therefrom

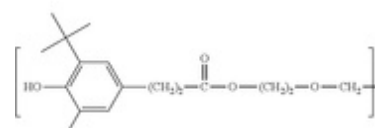
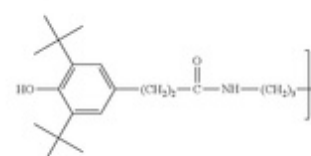
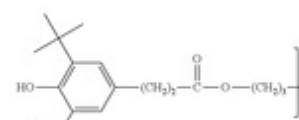
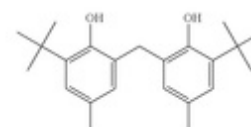
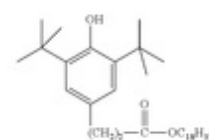
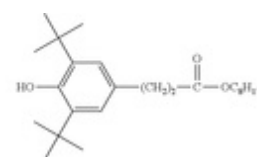
Patent # EP3688081

Date of publication: 2019-03-28

Applicant(s): PFAENDNER RUDOLF, METZSCH-ZILLIGEN ELKE

Assignee: Fraunhofer

The invention relates to a method for stabilizing halogen-free thermoplastic recyclates or pre-damaged plastics against oxidative, thermal, and/or actinic degradation. In the method according to the invention, at least one alditol or cyclitol is introduced into a halogen-free thermoplastic recyclate as a component, and optionally in addition thereto, at least one primary antioxidant and/or at least one secondary antioxidant is introduced into a halogen-free thermoplastic recyclate. By virtue of the method according to the invention, plastic recyclates can be stabilized against oxidative, thermal, and/or actinic degradation with a high degree of effectiveness and in a very environmentally friendly and inexpensive manner. The invention additionally relates to corresponding recyclate-based plastic compositions, to molding compound and molded parts produced therefrom, to stabilizer compositions, and to the use thereof for stabilizing halogen-free thermoplastic recyclates against oxidative, thermal, and/or actinic degradation.



Method for reusing a mixed textile containing cellulose and synthetic plastic

Patent # EP3511451

Date of publication: 2019-07-17

Applicant(s): WEILACH CHRISTIAN, HERCHL RICHARD, KLAUS-NIETROST CHRISTOPH

Assignee: LENZING

The invention relates to a method for recycling a mixed textile (110), wherein the method comprises the following steps: i) supplying (52) the mixed textile (110), wherein the mixed textile (110) contains cellulosic fibres and synthetic fibres, wherein the synthetic fibres comprise at least one synthetic plastic; ii) at least partially removing (54) the synthetic plastic from the cellulose; and iii) further processing (58) the depleted mixed textile (60) following the removal. (From WO2019138094 A1)

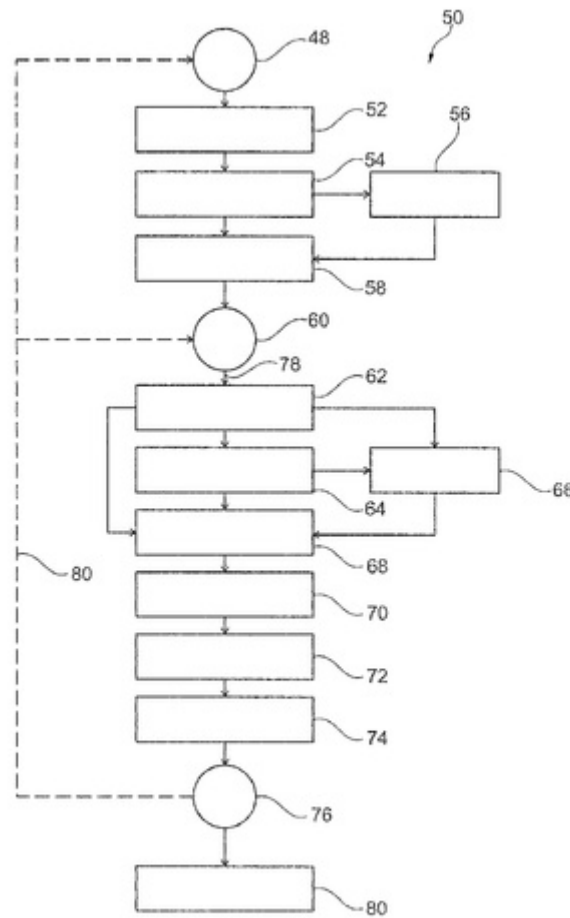


Fig. 1

Method of recycling of composite has improved energy balance

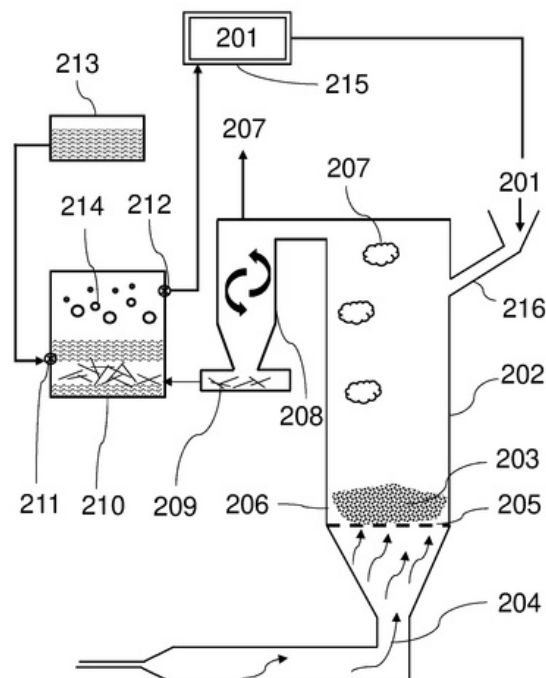
Patent # FR3080624

Date of publication: 2019-10-31

Applicant(s): DUBOIS JEAN-LUC

Assignee: ARKEMA

The invention relates to a method for recycling objects comprising a composite material, the material comprising a polymer matrix and a reinforcement, said method being characterised in that it comprises the following steps: introducing the object into a reactor for heating the object; heating the object in the reactor to a given temperature in order to destructure the polymer matrix; separating the reinforcement from the destructured polymer matrix; and bringing the reinforcement into contact with a first heat transfer means in order to recover the heat. The invention also relates to a system for recycling an object made of a composite material. (From WO2019207259 A1)



Method for separating and recycling a waste polyester-cotton textile by means of a hydrothermal reaction catalyzed by an organic acid

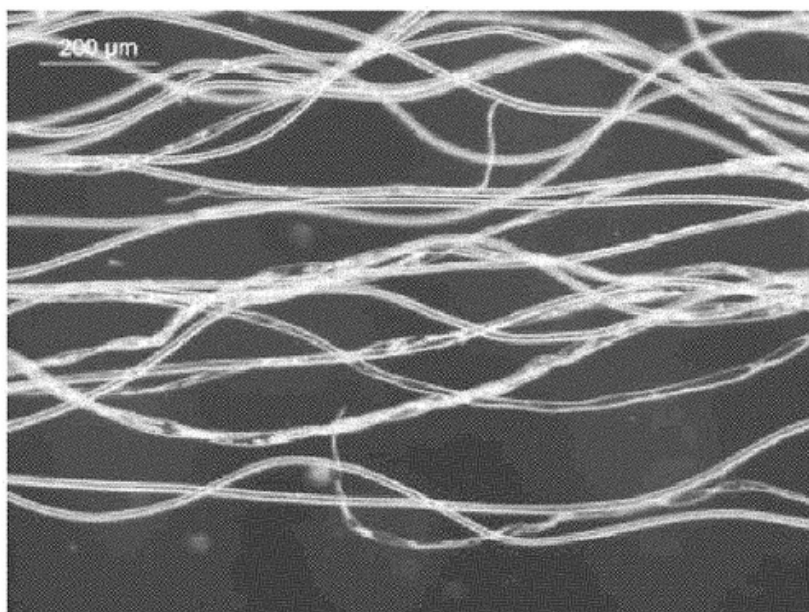
Patent # US20200262108

Date of publication: 2019-03-14

Applicant(s): KEH EDWIN YEE MAN, YAO LEI, LIAO XIAO, LIU YANG, CHEUK KEVIN, CHAN ALEX

Assignee: HONG KONG RESEARCH INSTITUTE OF TEXTILES & APPAREL LIMITED

A method for separating and recycling a waste polyester-cotton textile by a hydrothermal reaction catalyzed by an organic acid, comprising the following steps: dividing a waste polyester-cotton textile into fragments and dispersing in an aqueous solution system of the organic acid catalyst to obtain a mixed system; in a high-pressure reactor, heating the mixed system to 110~180° C. so that cotton fibers in the waste polyester-cotton textile undergo a degradation reaction for 0.5~3 h to obtain a mixture; and filtering the mixture by a sieve, washing to obtain a polyester fiber aggregate, and then filtering the remaining portion by a filtration membrane in vacuum so as to obtain cotton fiber fragments after washing. Embodiments of the present disclosure may provide advantages for the separation, recycling and reuse of waste polyester-cotton textiles. For example, the catalyst used during processing is derived from nature and is biodegradable.



Recycled leather, and apparatus for dry-manufacturing recycled leather

Patent # WO2020/096149

Date of publication: 2019-07-08

Applicant(s): KIM, Jieon, CHOI, Bong Jin, CHOO BYUNG HO

Assignee: ATKO PLANNING

Disclosed are: an apparatus for dry-manufacturing recycled leather comprising air-laid material; and recycled leather manufactured using the apparatus for dry-manufacturing recycled leather. The apparatus for dry-manufacturing recycled leather molds leather fiber and general fiber, which are mixed using air-laid material, and thus a conventional carding process is not required, and recycled leather manufactured thereby has a high tensile strength.

