



FIBRE-REINFORCED COMPOSITES



Patent Alert

Composite wire, method of manufacture and textile surface comprising such a wire

Patent no: FR3080386

Date of publication: 2019-10-25

Applicant(s): Mermet

Inventor : DAMOUR FRANCOIS-XAVIER

Abstract

A composite yarn comprising a continuous core wire multi-filament embedded in a matrix, is characterized in that the matrix comprises at least one polymeric material and at least one reinforcing filler, the filler being comprised of functionalized particles, said particles having a median size (dv_{50}) less than 40 μm . A method of manufacturing such a composite wire comprises at least one step of depositing, by coating or extrusion, of a matrix comprising a polymer and a reinforcing filler, on a core wire. A textile surface comprises at least one such composite yarn.

Textile-plastic composite, sensor and method for producing the textile-plastic composite

Patent no: DE102018204305

Date of publication: 2019-09-26

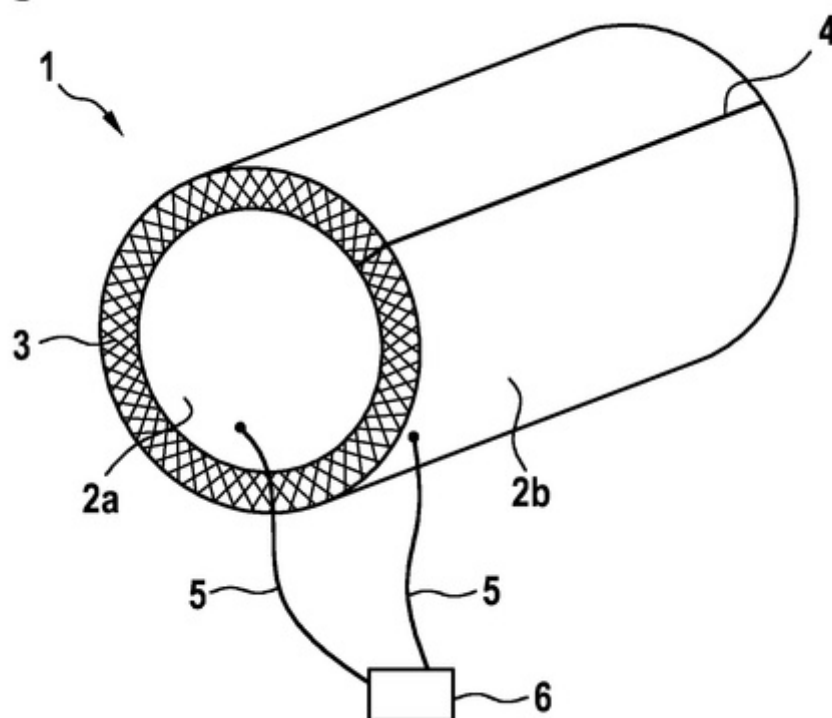
Applicant(s): Robert Bosch

Inventor: SCHEINER PHILIPP, STEWING FELIX, WOLTER FRANK

Abstract

Sensors must have different mechanical and physical properties in their applications, such that their materials have to be newly developed and/or selected for each application. The invention relates to a fabric-plastic composite comprising a reinforcing component (1) and a plastic component, wherein the reinforcing component (1) is embedded in the plastic component, and the reinforcement component (1) comprises a knitted spacer fabric, wherein the knitted spacer fabric has an electrical structure.

Fig. 1a



Method of manufacturing a part made from composite material by powder injection in a fibrous reinforcement with drainage by composite filter stratum

Patent no: FR3076242

Date of publication: 2019-07-04

Applicant(s): Safran

Inventors: PHILIPPE ERIC, BOUNIA MEDHY DAMIEN, CLERAMBOURG AURELIA, CARMINATI PAUL

Abstract

The invention relates to a method for producing a part made from a composite material, comprising the following steps: formation of a fibrous texture (10) using refractory ceramic fibres; placement of the fibrous texture (10) in a mould (110) with the insertion of a filtration layer (130) between the fibrous texture and a discharge port (112), said filtration layer (130) comprising a partially densified fibrous structure; pressurised injection of slurry (150) containing a powder of refractory ceramic particles (1500) into the fibrous texture (10); drainage through the filtration layer (130) of the solvent of the slurry that has passed through the fibrous texture (10) and retention of the powder of refractory ceramic particles inside the texture by the filtration layer (130), such as to obtain a fibrous preform comprising at least the fibrous texture (10) containing refractory ceramic particles (1500) and the filtration layer (130); and heat treatment of the refractory ceramic particles (1500) present in the fibrous texture (10) of the preform in order to form a part made from a composite material comprising at least the fibrous texture densified by a refractory ceramic matrix and the filtration layer.

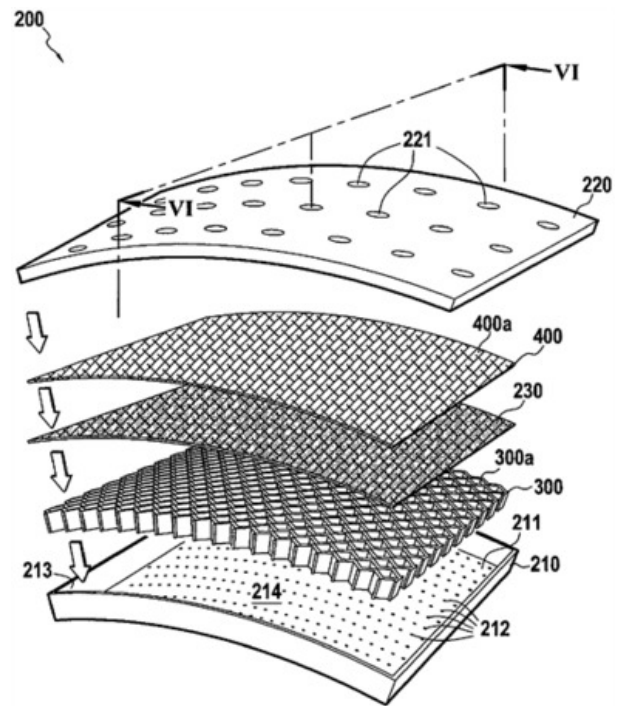


FIG 5

Composite panel, composite material, impregnator and method for manufacturing a composite panel

Patent no: US20190263100

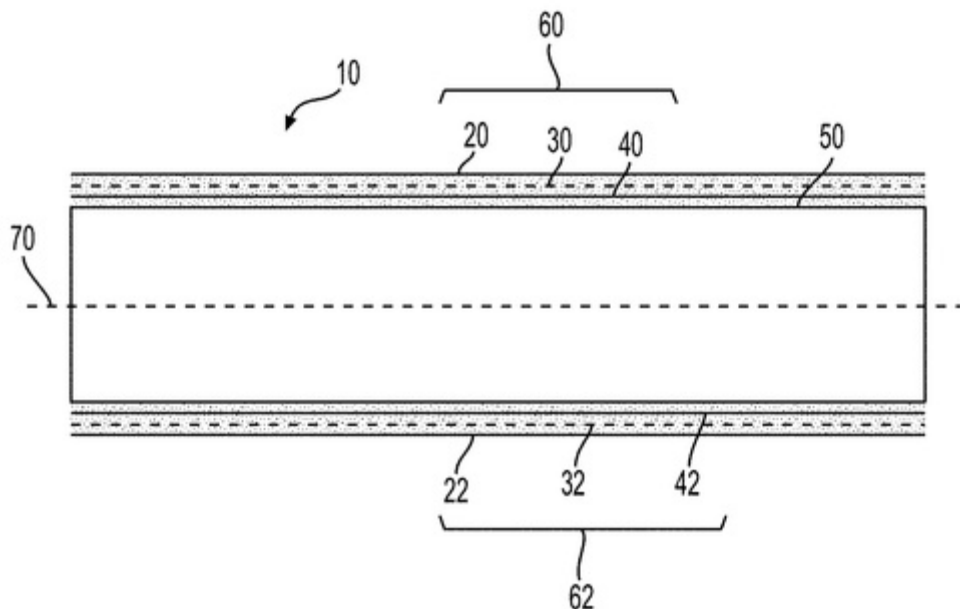
Date of publication: 2019-06-13

Applicant(s): Annexair

Inventor : LEMIEUX FRANÇOIS, COMTE RHÉAL

Abstract

A composite panel comprising a first composite skin having a first fabric layer positioned between a first Kraft paper layer and a second Kraft paper layer; a second composite skin having a second fabric layer positioned between a third Kraft paper layer and a fourth Kraft paper layer; a foam core bonded to the first composite skin and to the second composite skin; and a binding composition applied to the first fabric layer and to the second fabric layer and penetrating the second Kraft paper layer and the third Kraft paper layer so that the first composite skin is bonded to a first surface of the foam core and the second composite skin is bonded to a second surface of the foam core, the binding composition being a bio resin.



Thermoplastic resin-coated reinforcing fiber composite yarn, production method for said composite yarn, continuous fiber reinforced resin molding, and production method for composite material molding

Patent no: WO2019/172208

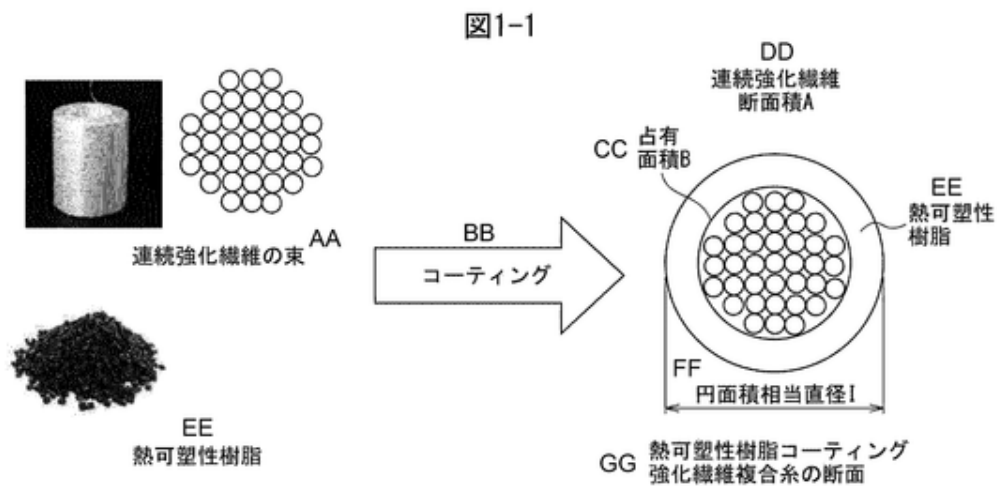
Date of publication: 2019-09-12

Applicant(s): ASAHI KASEI

Inventor: KOMATSUBARA, Yoshiaki, AKIYAMA, Tsutomu, YASUDA, Kazuharu, ARATANI, Yusuke

Abstract

Provided are: a thermoplastic resin-coated reinforcing fiber composite yarn, which has excellent resin-impregnation properties during molding, with which moldings of excellent properties can be produced even in short-time molding, and which, as a yarn, has excellent softness and excellent handling in weaving and knitting; a production method for said composite yarn; a continuous fiber-reinforced resin molding; and a production method for a composite material molding.



- AA Bundle of continuous reinforcing fiber
- BB Coating
- CC Occupied area B
- DD Cross-sectional area A of continuous reinforcing fiber
- EE Thermoplastic resin
- FF Equivalent circular area diameter I
- GG Cross-section of thermoplastic resin-coated reinforcing fiber composite yarn

Method for the resistance welding of fibre-composite components to give a fibre-composite structure, fibre-composite structure and fibre-composite component

Patent no: EP3461620

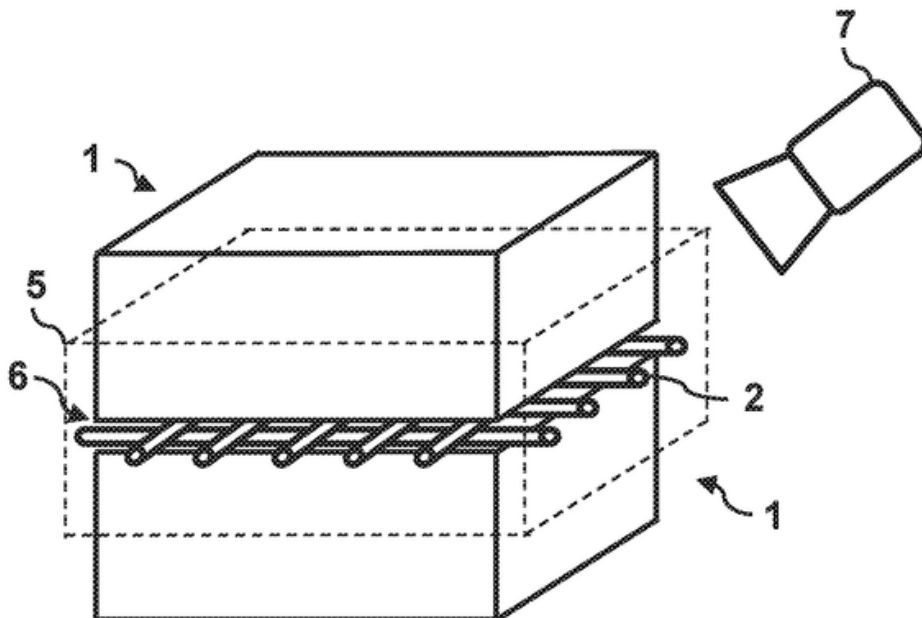
Date of publication: 2019-03-28

Applicant(s): Airbus

Inventor: HELTSCH NORBERT, LINDE PETER

Abstract

A method for the resistance welding of two fibre-composite components (1) to give a fibre-composite structure comprises arranging conductive fibres (2) within a jointing region (5) of the two fibre-composite components (1), where each conductive fibre (2) comprises a carbon fibre with an electrically insulating coating; passing an electric current through the conductive fibres (2) in a manner that heats the jointing region (5) to a welding temperature and melts the fibre-composite components (1) in the jointing region (5); and hardening the jointing region (5) in a manner that bonds the two fibre-composite components (1) by way of the jointing region (5) to give the fibre-composite structure.



Two-component hybrid matrix system made up of polyurethanes and polymethacrylates for the preparation of short fibre reinforced semi-finished products

Patent no: EP3560971

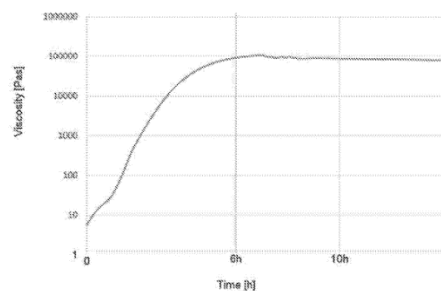
Date of publication: 2019-10-30

Applicant(s): Evonik operation

Inventor: TUNCAY ZUHAL, LOESCH HOLGER, CRON CHRISTINA, GOLLAN ELKE, ELMER LISA-MARIA

Abstract

A novel 2-component system and a process using the system produce semifinished component products that are stable in storage, in particular sheet moulding compounds (SMC) and mouldings produced therefrom (composite components). The process has five stages, including three different reactive steps which lead to successively increasing hardness levels. The 2-component system is applied to fibre material, e.g. carbon fibres, glass fibres or polymer fibres, or the 2-component system is brought into contact with short fibres, whereupon a first reaction takes place. This is followed by thermal polymerization initiated by redox initiation or with the aid of radiation or of plasma applications. Polymerization produces thermoplastics or, respectively, thermoplastic prepregs, which can then subsequently be moulded. Polyols present can finally be crosslinked, via elevated temperature, with uretdiones already present in the system. It is thus possible to produce dimensionally stable thermosets or crosslinked composite components.



High temperature, hydrophobic, flexible aerogel composite and method of making same

Patent no: US10343131

Date of publication: 2019-07-09

Applicant(s): NASA - NATIONAL AERONAUTICS & SPACE ADMINISTRATION

Inventor: HURWITZ FRANCES I, GUO HAIQUAN

Abstract

Aerogels, aerogel composites and methods of making the same are discussed. One example method can include the act of creating a Boehmite colloid and adding a hydrolyzed silicon precursor to form a sol. A reinforcement can be infused with the sol, gelled to form a gel, then dried to form an aerogel composite. Such a method can also include the acts of performing one or more solvent exchanges and subjecting the gel composite to supercritical drying. Additionally, such a method can include the act of heat treating the aerogel composite. The aerogel composite can be used in high temperature, flexible seals capable of withstanding temperatures, pressures, and compression levels associated with aerodynamic heating generated during flight and in aerospace applications. The aerogel composite also can be used in thermal protection systems designed for fire protection for structures or in personnel fire protective equipment.

