Summary

There is provided a method of producing a fluoropolymer article comprising

(i) subjecting a composition comprising fluoropolymer particles either dispersed in a dispersing medium or dissolved in a solvent to additive processing in an additive processing device containing at least one energy source wherein the composition comprises at least one polymerizable binder material capable of binding the fluoropolymer particles to form a layer in a part of the composition that has been exposed to the energy source of the additive processing device;

(ii) subjecting at least a part of the composition to exposure of the energy source to form a layer by polymerizing the binder material;

(iii) repeat step (ii) to form a plurality of layers to create an article;

(iv); at least partially removing the solvent or the dispersing medium from the article by treatment with a supercritical fluid.

There is also provided a method of producing a fluoropolymer article comprising

(i) providing a fluoropolymer article comprising fluoropolymer and one or more binder materials, wherein the article comprises less than 20% by weight based on the total weight of the article of solvent and/or water;

(ii) subjecting the article to a heat treatment to remove or decompose the binder material.

There is also provided a method of producing a fluoropolymer article comprising

(i) providing a fluoropolymer article containing fluoropolymer, binder material, solvent and/or water;

(ii) at least partially removing the solvent or the dispersing medium from the article by treatment with a supercritical fluid.

In one aspect there is provided a method of producing a fluoropolymer article comprising (i) providing a fluoropolymer article containing fluoropolymer, binder material, and an organic solvent; and (ii) at least partially removing the organic solvent from the article by treatment with a supercritical fluid, wherein the organic solvent is miscible with the supercritical fluid.

There is also provided an article comprising a curved surface wherein the curved surface comprises a fluoropolymer and has a surface roughness (Ra) of less than 8 µm, preferably less than 6 µm and more preferably less than 5.5 µm and wherein the fluoropolymer is selected from the group consisting of tetrafluoroethylene homopolymers, tetrafluoroethylene copolymers containing up to 1% by weight of perfluorinated alpha-olefin comonomers, and tetrafluoroethylene copolymers containing more than 1% by weight and up to 30% by weight based on the weight of the polymer of perfluorinated comonomers, partially fluorinated comonomers and non-fluorinated comonomers.

In another aspect there is provided an article being obtainable by the method as defined herein, the article comprising a curved surface wherein the curved surface comprises a fluoropolymer and has a surface roughness (Ra) of less than 8 µm as measured according to the Surface Roughness Procedure and wherein the fluoropolymer is selected from the group consisting of tetrafluoroethene homopolymers, tetrafluoroethene copolymers containing up to 1% by weight of perfluorinated alpha-olefin comonomers, and tetrafluoroethene copolymers containing more than 1% by weight and up to 30% by weight based on the weight of the polymer of perfluorinated comonomers, partially fluorinated comonomers and non-fluorinated comonomers.

There is also provided an article comprising a shaped composition comprising fluoropolymer, binder material and wherein the composition has a density of less than 2.00 g/cm^3 and wherein the article contains one or more interior walls.

Detailed Description

Before any embodiments of this disclosure are explained in detail, it is to be understood that the disclosure is not limited in its application to the details of construction and the arrangement of components set forth in the following description. Also, it is to be understood that the phraseology and