

Title (en)  
REACTOR ARRANGEMENT AND METHOD FOR DECOMPOSING OBJECTS CONSISTING OF PLASTIC-BASED COMPOSITE MATERIALS

Title (de)  
REAKTORANORDNUNG SOWIE VERFAHREN ZUR ZERLEGUNG VON AUS KUNSTSTOFFBASIERTEN VERBUNDWERKSTOFFEN  
BESTEHENDEN OBJEKTEN

Title (fr)  
SYSTÈME DE RÉACTEUR ET PROCÉDÉ POUR DÉCOMPOSER DES OBJETS CONSTITUÉS DE MATÉRIAUX COMPOSITES À BASE DE  
PLASTIQUE

Publication  
**EP 4237479 A1 20230906 (DE)**

Application  
**EP 21801044 A 20211022**

Priority  
• DE 102020128587 A 20201030  
• EP 2021079343 W 20211022

Abstract (en)  
[origin: WO2022090079A1] The invention relates to a reactor arrangement and to a method for decomposing objects consisting of plastic-based composite materials into their individual constituents by way of a solvolysis using at least one reactor chamber in which the objects can be exposed to a solvent in the supercritical state. The invention is characterised in that at least three pressure chambers arranged in series, a first load lock chamber, a reactor chamber adjoining same, and a second load lock chamber adjoining the latter, are provided and are each connected to each other via an actuatable partition means which can be moved in each case from an open position, in which two of the mutually adjacent pressure chambers are connected to each another, to a closed position, in which two of the mutually adjacent pressure chambers are fluidically, thermally and pressure-specifically isolated from each other. The reactor chamber is thermally coupled to a heating system and can be directly or indirectly fluidically connected via at least one first line to the first load lock chamber and can be connected to a first pressurisable feed line, via which solvent can be fed into the reactor chamber. The second load lock chamber has a second line, which can be connected directly or indirectly to the first load lock chamber. A means is also provided which can transfer the objects or a carrier holding the objects from one pressure chamber to the adjacent pressure chamber in a force-assisted manner when the partition means is moved into the open position.

IPC 8 full level  
**C08J 11/14** (2006.01); **B01J 19/00** (2006.01); **B29B 17/02** (2006.01)

CPC (source: EP US)  
**B01J 19/0013** (2013.01 - US); **B01J 19/28** (2013.01 - US); **B29B 17/02** (2013.01 - EP); **B29B 17/04** (2013.01 - EP);  
**C08J 11/14** (2013.01 - EP US); **B01J 2219/00033** (2013.01 - US); **B01J 2219/0004** (2013.01 - US); **B01J 2219/00054** (2013.01 - US);  
**B01J 2219/00162** (2013.01 - US); **B01J 2219/00599** (2013.01 - US); **B01J 2219/00601** (2013.01 - US); **B09B 3/00** (2013.01 - EP);  
**B29B 2017/0436** (2013.01 - EP); **B29K 2105/06** (2013.01 - EP); **Y02P 20/54** (2015.11 - EP); **Y02W 30/62** (2015.05 - EP)

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
**WO 2022090079 A1 20220505**; CA 3199980 A1 20220505; CN 116669922 A 20230829; DE 102020128587 A1 20220505;  
EP 4237479 A1 20230906; JP 2023547937 A 20231114; US 2023399484 A1 20231214

DOCDB simple family (application)  
**EP 2021079343 W 20211022**; CA 3199980 A 20211022; CN 202180084710 A 20211022; DE 102020128587 A 20201030;  
EP 21801044 A 20211022; JP 2023527230 A 20211022; US 202118033909 A 20211022