

Title (en)  
TORREFACTION PROCESS INTEGRATED IN A FLUIDIZED BED REACTOR

Title (de)  
IN EINEN WIRBELSCHICHTREAKTOR INTEGRIERTES TORREFIZIERUNGSVERFAHREN

Title (fr)  
PROCESSUS DE TORRÉFACTION INTÉGRÉ DANS UN RÉACTEUR À LIT FLUIDISÉ

Publication  
**EP 2678409 A1 20140101 (EN)**

Application  
**EP 12714341 A 20120220**

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• FI 2012050162 W 20120220

Abstract (en)  
[origin: WO2012113979A1] The use of a fluidized bed boiler as a heat source for a torrefaction process is presented. The fluidized bed boiler (100, 150) comprises means (210, 106, 156) for heating heat transfer medium (112, 212), means (213, 302) for transferring the heat transfer medium to a torrefaction reactor (200, 300, 400, 500), and means (215, 313) for receiving heat transfer medium from the torrefaction reactor. Furthermore, a method for torrefying biomass (202) is presented. In the method, biomass is heated to a torrefaction temperature in a torrefaction reactor by means of heat transfer medium, and the biomass is kept at the torrefaction temperature for a retention time. Further in the method, the heat transfer medium (112, 212) is heated by a fluidized bed boiler (100, 150), the heat transfer medium (112, 212) is transferred from the fluidized bed boiler (100, 150) to the torrefaction reactor (200, 300, 400, 500), and the heat transfer medium is transferred from the torrefaction reactor to the fluidized bed boiler. Furthermore, a torrefaction system is presented, which comprises a torrefaction reactor (200, 300, 400, 500) for torrefying biomass (202) into biocoal (204), means for conveying biomass to the torrefaction reactor, and heat transfer medium (112, 212) for heating the biomass. The torrefaction system further comprises a fluidized bed boiler (100, 150) for heating the heat transfer medium, means (213, 302) for conveying the heat transfer medium from the fluidized bed boiler (100, 150) to the torrefaction reactor (200, 300, 400, 500), and means (215, 313) for conveying the heat transfer medium from the torrefaction reactor to the fluidized bed boiler (100, 150). Both in the method and in the system, torrefaction gas or bed material from the fluidized bed boiler may be used as the heat transfer medium.

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