IbD - Case Study 4 Process Intensification applied at Pharmaceutical Processing

Project:
Intensified by Design® for the intensification of processes involving solids handling

The IbD Project has delivered the EU process industry with an affordable and comprehensive devices-and-processes design-platform endeavoured to facilitate process intensification (PI), which specially targets -but is not limited to- solid materials processing. Five PI industry case studies have been implemented in mining, ceramics, pharmaceutical, non-ferrous metals and chemical processes using the IbD approach and to validate the IbD methodologies, tools, PI modules, control and fouling remediation strategies and the ICT Platform itself for the industrial implementation of PI in processes involving solids. The Platform includes design modules for the commonest intensified reactors- Rotating fluidized beds, micro-structured reactor and spinning disk, among others, as well as a generic Module Builder -equipped with a set of both proprietary and third-parties design tools- for designs carried out on the basis of radically novel ideas. The IbD Platform output is basically a data set that comprises the intensified reactor design -ready to be built or assembled-, an optimised whole process design including the upstream/downstream intensified unit operations and their solids handling capability, as well as cleaning methods, etc. and the expected economic and environmental quantitative impacts.

Project website: http://ibd-project.eu/ This project has received funding from the European Union's Horizon 2020 research and Innovation programme under grant agreement No **680565**

Image not found or type unknown

Sector:

Chemicals

Summary:

The case study concerns drying of a wet granulated material including a binder solution (purified water + povidone), that is currently dried in a multi-stage vibrating fluid bed dryer (Heinen).

Theme:
Process Intensification - SPIRE05-2015
Keywords:

process intensification, solids handling, process design, digital platform
Type:
Case study
Document
Rights:

Open Access

Resources

Upload Files:
ibd_case_study_4_pharmaceutical_processing.pdf
Link:
IbD Project

Brief description of PI technology chosen:

In order to minimize energy use and keep residence time within limits, a very suitable option was the spiral flash dryer (SFD). This technology acts as a dryer and separator at the same time, keeping wet particles still inside the dryer whereas dried particles are separated. The use of drying air is minimal, and the equipment size can be reduced, bringing further cost reduction.

Contact Name:
Ignacio Monter Castro
Email:
imontero@iris.cat