

Title Quality of Fluidisation for the Drying of Forestry Biomass Particles in a Fluidised Bed
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Abstract

The objective of this work is to analyse three methods of forest biomass particles fluidisation, applied to the drying of solids. The techniques to promote fluidisation are: vibro-fluidised bed, mechanically agitated fluidised bed and fluidised bed with inert solids. The analysis of fluidisation quality was carried out by means of an orthogonal design with nested experiments and dummy treatment. The results indicated that the drying in the agitated fluidised bed is adapted to guarantee favourable conditions of homogeneity in the bed temperature: the average temperature differences in the bed were less than 0.3 °C. The high quality of fluidisation was also corroborated with high values of the coefficient of determination R^2 (0.997) for the drying curves during the period of constant drying rate.