Title Analysis of a Continuous Fluidized-bed Microwave Paddy Drying System

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Abstract

This paper presents an analysis of a continuous fluidized-bed microwave paddy drying system. The applicator consists of perpendicular slots on a concentric cylindrical cavity excited by perpendicular waveguides. Paddies to be dried are dropped along vertical direction into the center of the applicator while ambient temperature is fed in an opposite direction. The statistical data of electric field and temperature distributions in paddies are studied. Probability of paddy orientation is also considered. It is found that density of paddy around 40 percent of an applicator volume is suitable and wind flow rate is around 6 meter per second. With 3,200 Watt microwave power, the heating time is 6 minutes. These results are used for designing a fluidized-bed microwave drying system.