

The effect of tape casting operational parameters on the quality of adjacently graded ceramic film - DTU Orbit (08/11/2017)

The effect of tape casting operational parameters on the quality of adjacently graded ceramic film

For small length tape casting of ceramic slurries varying green film thickness is often a problem. To optimise this, the following parameters were investigated: single blade, double blade, using a pump system and a modelled speed change mode have been analysed. Advantages and limitations of every method are described here. The tape casting experiments were built to be generic in order to allow the control of various processing conditions. From these results, the single-blade technique was chosen for a study of side-by-side tape casting. The influence of the geometric parameters of partitioning the casting tank into chambers, on the quality of graded tape was studied. Tape casting experiments at different speeds and partition tongue lengths in combination with rheological tests revealed that high casting speeds and absence of the partition under the blade are detrimental to the formation of the smooth well-controlled interface between the co-cast slurries, required for most of applications.

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Authors: Bulatova, R. (Intern), Gudik-Sørensen, M. (Intern), Della Negra, M. (Intern), Andersen, K. B. (Intern), Kaiser, A. (Intern), Bahl, C. (Intern)

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