عنوان مقاله:

Achievement of Open-Celled Microcellular Foam by Control of Processing Parameters

محل انتشار:

دهمین سمینار بین المللی علوم و تکنولوژی پلیمر (سال: 1391)

تعداد صفحات اصل مقاله: 2

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خلاصه مقاله:

An open-celled structure is defined as a structure that each cell is connected to the adjacent cells [1]. In open-cell foam processing, it is desirable to produce cell structures in such away that the cells maintain their distinctive overall cellular shape and not coalesce. In addition to maintaining the cellshapes, each cell must be interconnected to the adjacent cells through the cell wall opening or pores. Open-celled polymericfoams have the capability to pass of fluids from their structure,because of interconnections between their cells or bubbles. So, these foams can be used as a separation membranes andfilters. Due to the opened cell walls, traditional open-cell foams are structurally weak. In order to improve themechanical strength and thus broaden the industrial market forsuch foams, a microcellular foaming process can be applied. Phase inversion [2], leaching [3], track etching [4], thermaldecomposition [5], ultrasound [6], are another ways to create open-cell structure. A new technique that does not have mostof these drawbacks is polymer foaming using physical blowing agent (N2 or CO2) in supercritical state. Some advantages of this process are: green process, no use ofadditives which may contaminate the polymeric matrix, applicable to a broad spectrum of polymers, and continuousprocess control is possible. In this work, we study the effect of the governing parameters on the production of open-celled microcellular foam in batch process from polystyrene and .CO2

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا: