

PRODUCTION OF PLGA FOAMS USING $scCO_2$ FOR DRUG DELIVERY SYSTEMS

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In the last years, different biomaterials have been investigated as scaffolds or drug delivery systems for health care and tissue engineering applications. Among them, the use of biopolymers has taking advance thanks to their sustainability, efficiency and for being obtained from renewable sources.

Currently, supercritical fluids is the greenest technology for the production of pharmaceutical compounds. In regards to this, supercritical CO_2 has been used to obtain polymeric foams. This foaming technique is accomplished at high temperature due to the necessity that the CO_2 and the polymer behave as a homogeneous solution. Other studies have proved the use of a solvent during foaming process. This is a promising alternative to avoid the necessity of working at high temperatures besides the polymer and drug degradation

In this work, foaming of Poly (lactic-co-glycolic acid) in presence of Ethyl Acetate has carried out. The production of polymeric foams and its morphology was investigated trough a design of experiments by varying the initial concentration of the polymer in the solvent, the operation pressure and depressurization time.