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(54) Title: A METHOD OF PRODUCING A BIOACTIVE POLYMER FILAMENT, THE BIOACTIVE POLYMER FILAMENT AND PRINTING METHODS USING THE SAME

(57) Abstract: There is provided a method of producing a bioactive polymer filament, the method comprising: providing a base polymer powder and a bioactive copolymer; mixing the base polymer powder with the bioactive copolymer to obtain a mixture; and extruding a bioactive polymer filament from the mixture at an extrusion temperature profile that is based on a predetermined melt/softening temperature and a predetermined onset degradation temperature of the bioactive polymer; and performing a post-extrusion thermal analysis on the extruded bioactive polymer filament to assess onset degradation of the bioactive copolymer in the filament. There is also provided a bioactive polymer filament obtained from said method and a fused filament fabrication (FFF) or fused deposition modelling (FDM) based three-dimensional printing method.