# EFFECT OF SPINNING PA ' METERS ON PLA/PPC/CURCUMIN MICROFII3ER DIAMETER; AN INVESTIGATION VIA RESPONSE SURFACE METHODOLOGY

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## Abstract

The initial phase of this study was to investigate the effect of polypropylene carbonate (PPC) additions in polylactic acid (PLA)/curcumin (Cur) blends. It was observed that the presence of curcumin particulates behaved as a reinforcement filler for PPC additions up to 30 wt%. A specific composition was then invested to find the correlation between the fiber diameter and melt-spinning process parameters using central composite design (CCD), a subset of response surface methodology (RSM). Results showed that the spinning temperature had a greater effect than the spinning speed on the diameter of PLA/PPC/curcumin fiber. The response model indicated a good correlation between experimental and predicted values since the ANOVA analysis demonstrated high Fvalue of model adequacy at 1034, non-significant lack of fit, precision adequacy of 9.94 and R2 value of 0,80. Therefore, this model can be used in a future study to establish the processing parameters for controlled fiber production.

## Keywords

**Author Keywords:** poly(lactic acid); curcumin; poly (propylene carbonate); fiber; RSM
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