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# **Synthesis, Characterization, Humidity sensor and Drug delivery Application of Poly(methylorange) based Triblock Copolymer**

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## **Abstract**

Synthesis, characterization and its humidity sensor application of Poly(methyl orange) (PMO) was carried out under N<sub>2</sub> atmosphere. In order to increase the molecular weight and processability, it was block copolymerized with ε-caprolactone (CL) and tetrahydrofuran (THF) separately. The conductivity value of PMO was found to be decreased after the chemical conjugation with poly(ε-caprolactone) (PCL) and poly(tetrahydrofuran) (PTHF) blocks. Thus obtained triblock copolymer was subjected to humidity sensor application and the results are critically compared. The triblocks were further characterized by Fourier transform infrared (FTIR) spectroscopy, UV-visible spectroscopy, Fluorescence spectroscopy, differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), gel permeation chromatography (GPC), field emission scanning electron microscopy (FESEM) and cyclic voltammetry (CV). The invitro drug delivery activity was also tested under gastric pH.

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