

Electromechanical Behaviour of Chitosan Based Electroactive Polymer

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Abstract : Chitosan is a natural, nontoxic, polyelectrolyte, cheap polymer. In this study, chitosan based electroactive polymer (CBEAP) was fabricated. Electroactive properties of this polymer were investigated at different voltages. It exhibited excellent tip displacement at low voltages (1, 3, 5, 7 V). Tip displacement was increased as the applied voltage increased. Best tip displacement was investigated as 28 mm at 5V. Characterization of CBEAP was investigated by scanning electron microscope, X-ray diffraction and tensile testing. CBEAP exhibited desired electroactive properties at low voltages. It is suitable for using in artificial muscle and various robotic applications.

Keywords : chitosan, electroactive polymer, electroactive properties

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