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Poly(vinyl alcohol)/Chitosan composites: Physically transient materials for sustainable and transient bioelectronics

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1	Poly(vinyl alcohol)/Chitosan Composites: Physically Transient
2	Materials for Sustainable and Transient Bioelectronics
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17	Abstract
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The development of sustainable and transient materials is not only significant 18 importance for environmental concern and human health, but also meets the highly 19 demand for specific application in biomedical, military and intelligence fields. In this 20 study, polymer blends of poly(vinyl alcohol) and chitosan were used to prepare 21 sustainable and degradable polymer films which are promising to be applied as 22 substrates for transient bioelectronics. The effect of the material composition and 23 chemical structures on the mechanical, thermo-physical and thermal stability was 24 25 studied and characterized by tensile testing, dynamic mechanical analysis, thermogravimetric analysis, and Fourier-transform infrared spectroscopy, respectively. 26 In addition, the transiency rate of the composites as a function of temperature and 27 28 composition was investigated and discussed. It is found that the transience rate of the composites can be tailored by controlling the composition and chemical structures. 29

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