

Title: Perspectives on the electrically induced properties of electrospun cellulose/liquid crystal devices

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Source: Journal of Electrostatics

Volume: 69 **Issue:** 6

Pages: 623-630 **DOI:** 10.1016/j.elstat.2011.08.009 **Published:** Dec 2011

Abstract: A mat of electrospun cellulose fibers are deposited on transparent conductive oxide covered glass, and two such plates enclose a nematic liquid crystal. Thus two new types of Cellulose based Polymer Dispersed Liquid Crystal devices, based on hydroxypropylcellulose and Cellulose Acetate and the nematic liquid crystal E7 have been obtained. The current-voltage characteristics indicates ionic type conduction. Heating-cooling cycles have been applied on the samples and the activation energies have been determined. Simultaneously with the thermo-stimulated currents, the optical transmission dependence on the d.c. electric field and temperature was registered. ON-OFF switching times have been determined for different control voltages. (C) 2011 Elsevier B.V. All rights reserved.

Document Type: Article

Language: English

Author Keywords: Electrospinning; Cellulose Polymer Dispersed Liquid Crystal; Ionic Conduction; Activation Energy; Optical Transmission

KeyWords Plus: Liquid-Crystal; Cells

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Publisher: Elsevier Science BV

Address Publisher: PO Box 211, 1000 AE Amsterdam, Netherlands

IDS Number: 846XO

ISSN: 0304-3886