

Performance of organic transistors made with cellulose nanofibers as an additional component

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Cellulose nanofiber is a nature-derived nanomaterial. In this study, we have investigated how the cellulose nanofibers affect the performance of organic transistors when they are incorporated in the channel and the electrolyte layer. Cellulose nanofibers are blended with an ionic liquid, enabling formation of an electrolyte layer. We also investigated if the cellulose nanofiber could act as aligning templates or charge-trapping sites in the transistors. Both static and dynamic characteristics of the transistors were analyzed to see the effectiveness of the cellulose nanofibers for performance improvement.