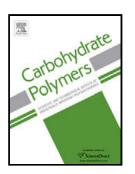
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### ACCEPTED MANUSCRIPT

# Cellulose and Nanocellulose-Based Flexible-Hybrid Printed Electronics and Conductive Composites –A Review

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#### Highlights:

- Significant market opportunities for biopolymers in flexible-hybrid printed electronics.
- High smoothness and transparency can be achieved with TEMPO oxidation/nanocellulose.
- Dielectric properties of cellulose are controlled with moisture management.
- Doping or ionizable grafting is required for conductivity in cellulose.
- Grafted negative charged side chains on cellulose can help in positive ion conduction.
- Nanocellulose shows piezoelectric properties due to crystalline asymmetry.

#### ABSTRACT

Flexible-hybrid printed electronics (FHPE) is a rapidly growing discipline that may be described as the precise imprinting of electrically functional traces and components onto a substrate (such as paper) to create functional electronic devices. The mass production of low-cost devices and Download English Version:

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