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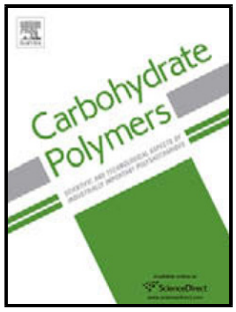

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Authors: Khan M.A. Uddin, Mariko Ago, Orlando J. Rojas

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ACCEPTED MANUSCRIPT

Hybrid films of chitosan, cellulose nanofibrils and boric acid: flame retardancy, optical and thermo-mechanical properties

Khan M. A. Uddin[1], Mariko Ago[1], Orlando J. Rojas[1,2,*]

[1]*Departments of Bioproducts and Biosystems, School of Chemical Engineering, Aalto University, FI-00076, Espoo, Finland.*

[2] *Department of Applied Physics, School of Science, Aalto University, FI-00076, Espoo, Finland.*

*Corresponding Author: O.J.R., orlando.rojas@aalto.fi

Highlights

- Cellulose nanofibrils (CNF) were used to synthesize films with fire retardancy properties.
- The effect of chitosan (CS) boric acid (BA) was demonstrated
- The hybrid films displayed optical transparency and strength.
- The flammability and the thermal stability were studied with respect to BA loading.
- Bicomponent CNF and CS, displayed better fire retardancy than single CS films.

ABSTRACT

Chitosan (CS), cellulose nanofibrils (CNF) and boric acid, the latter of which was used as flame retardant, were combined in transparent, hybrid films that were produced by solvent casting. The

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