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(54) Title: HIGH-PERFORMANCE STRENGTH RESINS IN PAPERMAKING INDUSTRIES

(57) Abstract: A composition comprising a functionalized water-soluble, cationic, thermosetting, cellulose reactive polymer with a doubly structured backbone that is the reaction product of: (a) a copolymerized (i) acrylamide component, (ii) cationic co-monomer component and (iii) at least one multifunctional crosslinking monomer component; and (b) a cellulose reactive agent component; such that the acrylamide component, the cationic co-monomer component, the multifunctional crosslinking monomer component, and the cellulose reactive agent component are in an amount sufficient amount to produce a polymer that imparts strength to a fibrous substrate when the polymer is added to paper stock during a papermaking process. The invention also relates to methods for making and using such a composition.

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