

## : MAJOR CHEMICAL ENGINEERING  
KEY WORD: UNCOATED BOARD/ MODIFIED STARCH/ CATIONIC STARCH/ BURSTING STRENGTH  
SOMPHO HOMJUMROON : ENHANCEMENT OF THE STRENGTH OF UNCOATED  
BOARD BY MODIFIED STARCH, THESIS ADVISOR : DR.SIRIJUTARATANA  
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In this thesis, the effects of cationic starch on physical properties of handsheets were investigated so that the optimum amount of modified starch to be used for enhancement of the strength of uncoated board can be achieved. Samples of uncoated board and stock were analyzed to determine the physical properties and the background parameters to find the proper type of cationic starch. Then, the cationic starch dosage, the freeness and the degree of substitution were varied. Handsheets were made to analyze the physical properties. It was found that at 0.033-0.039 degree of substitution, 15 milligram/gram stock cationic starch addition and at 405 csf freeness, the burst index of the handsheets increased by 30.3% and the production cost increased by 74.5 Baht/ton.