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CMP

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UV

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CTMP

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NMR  
CTMP  
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T<sub>205</sub>  
om- 88  
CMP  
%  
T<sub>402</sub> om- 88  
%  
%

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CMP  
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‘%  
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‘% / DTPA ‘ /  
‘% ‘%

kPa  
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DTPA ‘ :  
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( ) ( )

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Pu  
Ni  
Ek

TUNGSRAM 20W-F74

Black Light F20W/ 350 BL

( UV )

T<sub>456</sub> om-87, T<sub>494</sub> om- 87, T<sub>414</sub> om- TAPPI  
82

(< °C)

SAS

Technibrite Micro

PC TB - 1C  
b\*, a\*,

CIELAB L\*

( ) ks<sup>-1</sup>

:( ) ( ) ( )

$$(k.s^{-1})_{456} = [(1 - R_{\infty})^2 (2 R_{\infty})^{-1}]$$

$$PC = 100 [(k.s^{-1})_t - (k.s^{-1})_{t=0}]$$

( ) R<sub>∞</sub> ,

PC

k , t

(m<sup>2</sup>/kg)

s (m<sup>2</sup>/kg)

CMP

(k)

k

CMP

( )

CMP

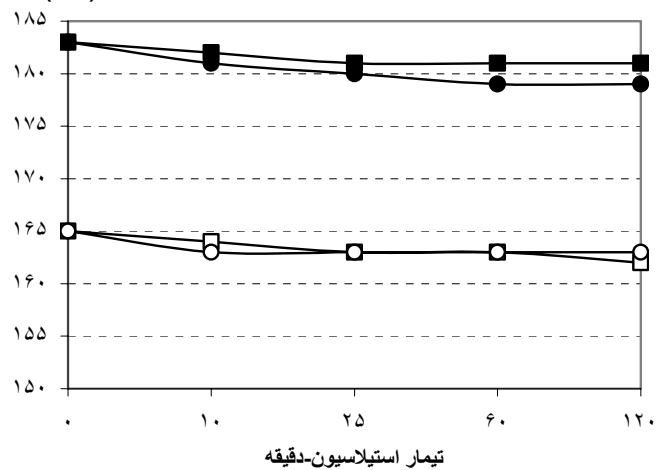
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	<b>H<sub>2</sub>O<sub>2</sub></b>	
	<b>H<sub>2</sub>O<sub>2</sub>+NaBH<sub>4</sub></b>	
	( )	

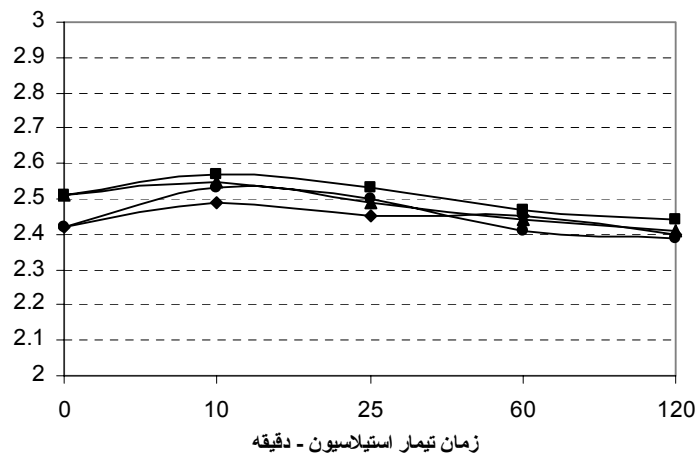
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مقاومت در برابر پارگی  
 (mN)



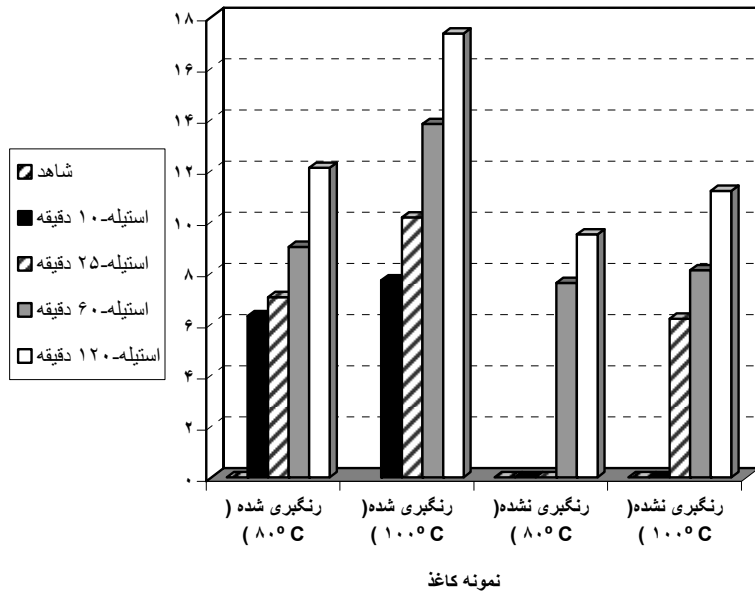
-H<sub>2</sub>O<sub>2</sub> (○) (°C) -H<sub>2</sub>O<sub>2</sub> (●) (°C)  
 (□) CMP (■) (°C)

مقاومت در برابر کشش  
 (kN.m<sup>-1</sup>)



(■) (°C) -H<sub>2</sub>O<sub>2</sub> (▲) CMP  
 (●) (°C) (◆) (°C) H<sub>2</sub>O<sub>2</sub>

مقاومت تر نسبی (%)



CMP

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CMP

(ISO )

(s )

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(s)

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( )			CMP		
$S_{557}$ ( $m^2kg^{-1}$ )	$k_{557}$ ( $m^2kg^{-1}$ )	$R_{\infty,457}$ (%)			
					CMP
/	/	/		( )	
/	/	/			
/	/	/			
/	/	/			
/	/	/			
				H <sub>2</sub> O <sub>2</sub> /	CMP
/	/	/			
/	/	/			
/	/	/			
/	/	/			
/	/	/			
				H <sub>2</sub> O <sub>2</sub> +NaBH <sub>4</sub> //	CMP
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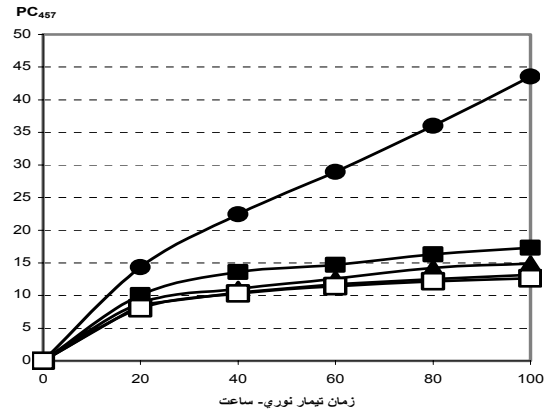
CMP

CMP

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CMP





CMP
PC

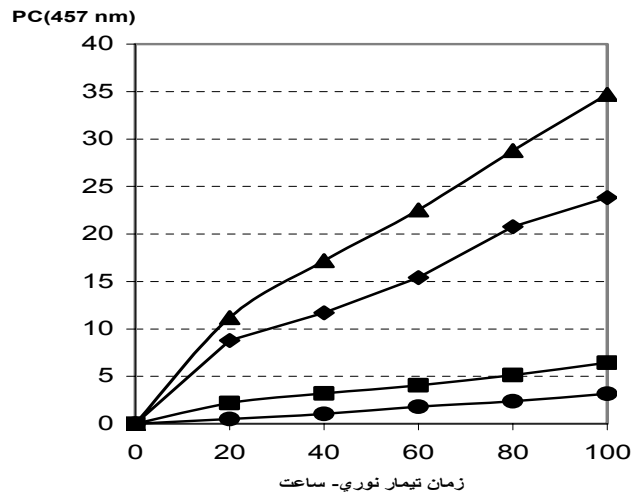
(◆)                      (▲)                      (■)                      (●) ( )

(□)

(b\*)

$L^*$                        $b^*$   
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 $L^*$                        $b^*$   
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 ( )

(L\*)

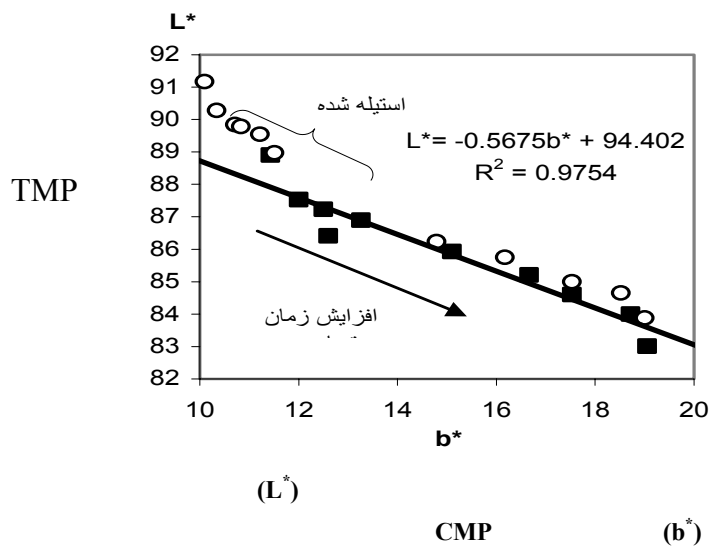


PC
CMP

(▲)                      (●)                      (◆)                      (■)

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( )

(۱۹،۱۴، )

CMP

TMP

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CMP

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( PC)

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TMP

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CTMP

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(PC)

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## Effect of Chemical Modification on Practical Properties of Bagasse Mechanochemical Pulp

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### Abstract

This research is aimed at studying the effect of acetylation on the optical behavior of the CMP pulp made of bagasse. Results show that acetylation considerably improves the brightness of the processed papers. Treatment with acetic anhydride slightly reduces the brightness of the papers bleached by hydrogen peroxide. Results of accelerated aging show that acetylation of free phenolic hydroxyl groups in lignin notably improves the stability of papers. Additionally, the reduction of pulp borohydride sodium improves brightness and other chromatic properties but does not enhance the photostability of papers, and color reversion in reduced and acetylated papers is equal to the reversion in the papers merely acetylated. The research proved in general that properties of mechanochemical pulps prepared from bagasse may be improved through acetylation and this process enhances mechanical and optical properties of the pulp. Reduction treatment does not affect photoyellowing process to a considerable extent and only slightly prevents color change in bleached pulp. Reduction by borohydride sodium and subsequent acetylation has stabilizing effect as acetylation by itself has.

**Keywords:** Acetylation, Yellowing, High-yield pulps, Hydroxyl groups, Chromophores, Inhibition, Paper, Mechanical properties.