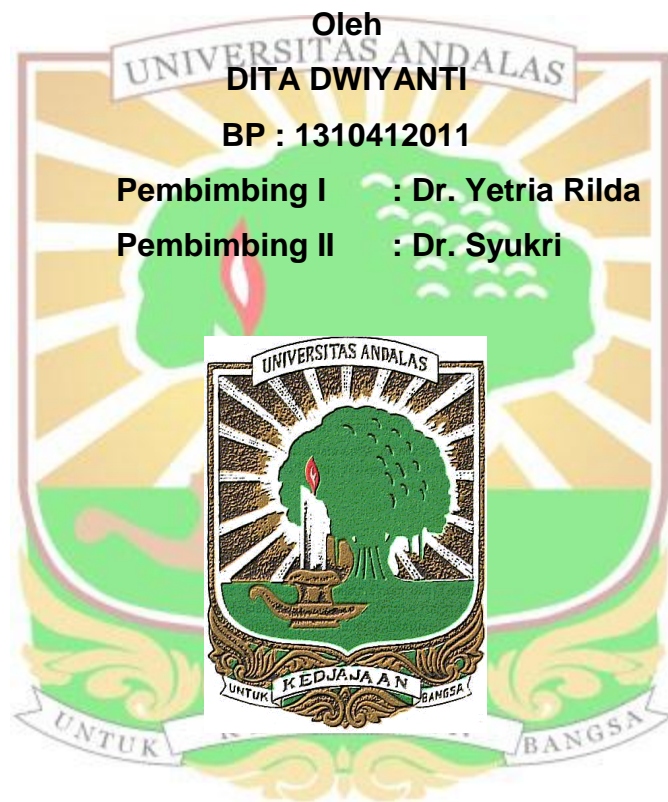


**PREPARASI DAN KARAKTERISASI TEKSTIL ANTIJAMUR  
BERBASIS FOTOKATALIS NANOKOMPOSIT  $\text{TiO}_2\text{-SiO}_2$  *DOPED* KITOSAN DENGAN  
MENGUNAKAN *CROSS LINK* ASAM SITRAT DAN  
NATRIUM HIPOFOSFIT**

**SKRIPSI SARJANA KIMIA**



**JURUSAN S1 KIMIA  
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM  
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## ABSTRACT

### Preparation and Characterization Of Antifungal Textile Based Photocatalyst Nanocomposite $\text{TiO}_2\text{-SiO}_2$ Doped Chitosan Using Cross Link Citric Acid and Sodium Hypophosphite

by

Dita Dwiyanti (1310412011)

Mentor (Dr. Yetria Rilda dan Dr Syukri)



In this research, a nanocomposite of  $\text{TiO}_2\text{-SiO}_2/\text{chitosan}$  (3:1) has been carried out on the cellulose with the help of cross link of citric acid and synergized by using catalyst sodium hypophosphite. The coating was conducted by dip-spin coating method. The study showed the effect of catalyst sodium hypophosphite on increasing of citric acid cross link. The optimum composition ratio of citric acid binder concentration to hypophosphite sodium catalyst (5:3), concentration of citric acid 1.5 M, with time of immersion of citric acid binder for 12 hours. SEM characterization showed that coated cottons using a catalyst sodium hypophosphite had an increase and a uniform distribution of  $\text{TiO}_2\text{-SiO}_2/\text{chitosan}$  nanocomposites compared with coated cotton without the use of a catalyst. The FT-IR analysis showed the difference in the intensity of the C = O stretching group at the wave number of  $1700\text{ cm}^{-1}$  which signified the covalent interaction of esterification. The indication of antifungal textiles was shown in the inhibition zone of *Candida albicans* which was greater than *Aspergillus niger* inhibition zone of 14.4 mm and 12.9 mm.

Keywords : Cotton textile, Citric acid, Sodium hypophosphite, *C.albicans*, *A.niger*

