

PENGOLAHAN LIMBAH LOGAM BERAT INDUSTRI TEKSTIL MENGGUNAKAN FOTOKATALIS TiO₂/ARANG AKTIF

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Abstract	<p>Study about the use of active charcoal rice straws (AAJP) was done in order to decrease heavy metal ion on textile waste water by using photocatalyst AAJP/TiO₂. Rice straws were gained from the Banyumas Regency and samples textile waste water from one of textile industry in Pemalang. This study was begun by the making of active charcoal from the rice straws, and then the modification of photocatalyst AAJP/TiO₂ was done with the comparison 1:99, 2:98, 3:97, 4:96, 5:95. The test of heavy metal ion photoreduction was done with some parameters such as weight comparison (1:99, 2:98, 3:97, 4:96, 5:95), pH effect (2, 5, 7, 9, 13) and the effect of ray source (sun light and the UV lamp). Analysis of photocatalyst material used SEM and heavy metal ion concentration used AAS. Results show that optimum photocatalyst activity in weight comparison AAJP300oC / TiO₂ (1:99) with decrease concentration was 65.02% for heavy metal ion, mean while AAJP700oC / TiO₂ (3:97) with decreased concentration of heavy metal ion is 94.50%. Optimal process for heavy metal ion reduction occur at pH 2 with decreased concentration of heavy metal ion for AAJP300oC / TiO₂ (1:99) is 99.87% and for AAJP700oC / TiO₂ (3:97) is 100%. The source of UV lamp was good for heavy metal ion photoreduction (AAJP300oC/TiO₂(1:99) was 99.87% and AAJP700oC/TiO₂ (3:97) was 100%)</p>
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