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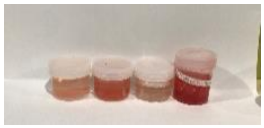
LAMPIRAN

Lampiran 1. Dokumentasi Penelitian



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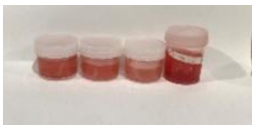

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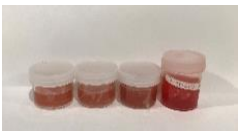

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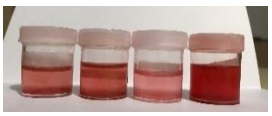

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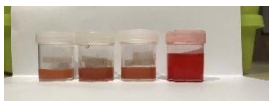

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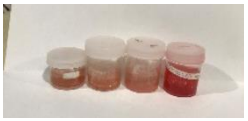

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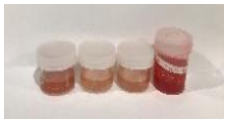

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Persiapan Sampel untuk di *milling*

Milling sampel

Proses fotokatalis

Menyaring memisahkan katalis dan polutan

Lampiran 2.

Lampiran 2.1 Perhitungan Ukuran Kristal

$$D=\frac{k\lambda}{\beta \cos\theta}$$

Dimana, D adalah ukuran kristal, k adalah konstanta Scherrer (0,9), λ adalah Panjang gelombang untuk radiasi sinar x (untuk Cu adalah 0,154 nm), β adalah *The Full Width at Half Maximum* (FWHM), dan θ adalah sudut difraksi.

	2 *theta* (deg)	2 *theta* (rad)	*theta*	k	*Wavelenght* (nm)	FWHM (deg)	FWHM (rad)	cos theta	D	D Rata-rata
A0	29.570	0.516	0.258	0.900	0.154	0.560	0.010	0.967	14.666	15.306
	33.298	0.581	0.291	0.900	0.154	0.583	0.010	0.958	14.210	
	35.795	0.625	0.312	0.900	0.154	0.590	0.010	0.952	14.144	
	54.195	0.946	0.473	0.900	0.154	0.490	0.009	0.890	18.205	
A3	29.655	0.518	0.259	0.900	0.154	0.530	0.009	0.967	15.500	16.789
	33.375	0.582	0.291	0.900	0.154	0.483	0.008	0.958	17.175	
	35.898	0.627	0.313	0.900	0.154	0.564	0.010	0.951	14.800	
	54.280	0.947	0.474	0.900	0.154	0.453	0.008	0.890	19.682	
A5	29.248	0.510	0.255	0.900	0.154	0.443	0.008	0.968	18.514	19.318
	32.970	0.575	0.288	0.900	0.154	0.433	0.008	0.959	19.108	
	35.470	0.619	0.310	0.900	0.154	0.420	0.007	0.952	19.851	
	53.905	0.941	0.470	0.900	0.154	0.450	0.008	0.891	19.797	
A7	29.368	0.513	0.256	0.900	0.154	0.425	0.007	0.967	19.316	23.931
	33.059	0.577	0.288	0.900	0.154	0.408	0.007	0.959	20.318	
	35.565	0.621	0.310	0.900	0.154	0.459	0.008	0.952	18.157	
	44.042	0.769	0.384	0.900	0.154	0.280	0.005	0.927	30.626	
	53.955	0.942	0.471	0.900	0.154	0.410	0.007	0.891	21.734	
	64.404	1.124	0.562	0.900	0.154	0.281	0.005	0.846	33.434	

Lampiran 2.2 Perhitungan %Degradasi

$$\%\text{Degradasi} = \frac{C_0 - C_t}{C_0} \cdot 100\%$$

Material	*Wavelenght*	Abs CR	Abs 10 min	Abs 20 min	Abs 30 min	deg 10 min	deg 20 min	deg 30 min
A0a	480	1306	88	188	120	93.262	85.605	90.812
A0b	480	1306	177	176	149	86.447	86.524	88.591
A0c	480	1306	63	73	139	95.176	94.410	89.357
A3a	480	1306	220	214	287	83.155	83.614	78.025
A3b	480	1306	123	314	475	90.582	75.957	63.629
A3c	480	1306	178	224	399	86.371	82.848	69.449
A5a	480	1306	530	678	154	59.418	48.086	88.208
A5b	480	1306	331	154	548	74.655	88.208	58.040
A5c	480	1306	381	233	463	70.827	82.159	64.548
A7a	480	1306	220	239	250	83.155	81.700	80.858
A7b	480	1306	298	499	280	77.182	61.792	78.560
A7c	480	1306	134			89.740		

Lampiran 2.3 Perhitungan Aktivitas Fotokatalis

$$\text{Aktivitas fotokatalis} = C_t/C_0$$

Dimana, C_0 adalah nilai absorbansi *Congo Red* (30 mg/1000 ml) dan C_t adalah nilai absorbansi larutan yang sudah di uji fotokatalis.

Material	Wavelenght	Abs CR	Abs 10 min	Abs 20 min	Abs 30 min	ct/c0 10 min	ct/c0 20 min	ct/c0 30 min
A0a	480	1306	88	188	120	0.067	0.144	0.092
A0b	480	1306	177	176	149	0.136	0.135	0.114
A0c	480	1306	63	73	139	0.048	0.056	0.106
A3a	480	1306	220	214	287	0.168	0.164	0.220
A3b	480	1306	123	314	475	0.094	0.240	0.364
A3c	480	1306	178	224	399	0.136	0.172	0.306
A5a	480	1306	530	678	154	0.406	0.519	0.118
A5b	480	1306	331	154	548	0.253	0.118	0.420
A5c	480	1306	381	233	463	0.292	0.178	0.355
A7a	480	1306	220	239	250	0.168	0.183	0.191
A7b	480	1306	298	499	280	0.228	0.382	0.214
A7c	480	1306	134			0.103		

Lampiran 2.4 Perhitungan Laju Kinetik Fotodegradasi

$$\ln\frac{C_0}{C_t}=k_r.t$$

Dimana, C_0 adalah nilai absorbansi *Congo Red* (30 mg/1000 ml), C_t adalah nilai absorbansi larutan yang sudah di uji fotokatalis, k_r adalah laju fotodegradasi, dan t adalah waktu proses penyinaran

Material	*Wavelenght*	Abs CR	Abs 10 min	Abs 20 min	Abs 30 min	ln c0/ct 10 min	ln c0/ct 20 min	ln c0/ct 30 min
A0a	480	1306	88	188	120	2.697	1.938	2.387
A0b	480	1306	177	176	149	1.999	2.004	2.171
A0c	480	1306	63	73	139	3.032	2.884	2.240
A3a	480	1306	220	214	287	1.781	1.809	1.515
A3b	480	1306	123	314	475	2.363	1.425	1.011
A3c	480	1306	178	224	399	1.993	1.763	1.186
A5a	480	1306	530	678	154	0.902	0.656	2.138
A5b	480	1306	331	154	548	1.373	2.138	0.868
A5c	480	1306	381	233	463	1.232	1.724	1.037
A7a	480	1306	220	239	250	1.781	1.698	1.653
A7b	480	1306	298	499	280	1.478	0.962	1.540
A7c	480	1306	134	-	-	2.277	-	-