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## LAMPIRAN

### Lampiran 1. Alat, Bahan, dan Hasil



Sentrifugator



Gelas Kimia



Kertas Saring



*Furnace*



Neraca Digital



*teflon lined-steel  
autoclave*



*Magnetic Stirrer*



Laser UV



Oven



Mortar



Mesh



Sonikator

**Gambar 1.** Alat Penelitian



Aluminium Sulfat



Carbon Quantum Dots



HCl



Pestisida



Aquabidest



Aquadest

**Gambar 2.** Bahan Penelitian

**Lampiran 2.** Dokumentasi Penelitian



Sonikasi Residu Teh



Proses Hidrotermal Residu  
Teh



Filterisasi



Pengujian CQDs dari Residu Teh



Pencampuran Alum dan CQDs



Pengeringan



Penghalusan



$\text{Al}_2(\text{SO}_4)_3/\text{CQDs}$



Uji Fotokatalis

**Gambar 3.** Proses Sintesis  $\text{Al}_2(\text{SO}_4)_3/\text{CQDs}$

**Lampiran 3.** Tabel Ukuran Kristal

Sampel	Sudut Difraksi 2theta	FWHM	Ukuran Kristal
$\text{Al}_2(\text{SO}_4)_3$	20.0933	0.3249	24.83065478
	22.66	0.3334	24.3001172
	24.4436	0.3193	25.4556557
	26.8366	0.4333	18.84770309
	29.886	0.428	19.20984053
	34.3425	0.375	22.17166143
	36.242	0.3207	26.06277381
$\text{Al}_2(\text{SO}_4)_3/\text{CQDs}$ I	19.52	0.279	28.89045225
	22.3267	0.7281	11.12069028
	24.175	0.83	9.787817504
	26.3318	0.4864	16.77264599

	29.3866	0.4733	17.35123176
	33.832	0.28	29.6536629
	35.7314	0.3153	26.47080239
Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> /CQDs II	20.0005	1.1699	6.894884234
	22.4516	0.8433	9.603606526
	24.285	1.03	7.888895789
	26.426	0.652	12.5150105
	29.6375	1.005	8.176194423
	35.88	0.6	13.91623522
	36.52	0.65	12.8692267
Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> /CQDs III	20.095	1.27	6.352362948
	22.5125	0.855	9.473189314
	24.3433	0.9667	8.406385922
	26.36	0.84	9.712720139
	29.6266	1.3067	6.288259473
	33.95	0.54	15.38079838
	36.055	1.13	7.392815352
Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> /CQDs IV	20.0135	1.2236	6.592421118
	22.455	0.85	9.527963622
	24.2725	1.025	7.927192204
	26.4	0.66	12.36265514
	29.605	1.09	7.538035975
	35.83	0.66	12.64933719
	36.46	0.68	12.29934357

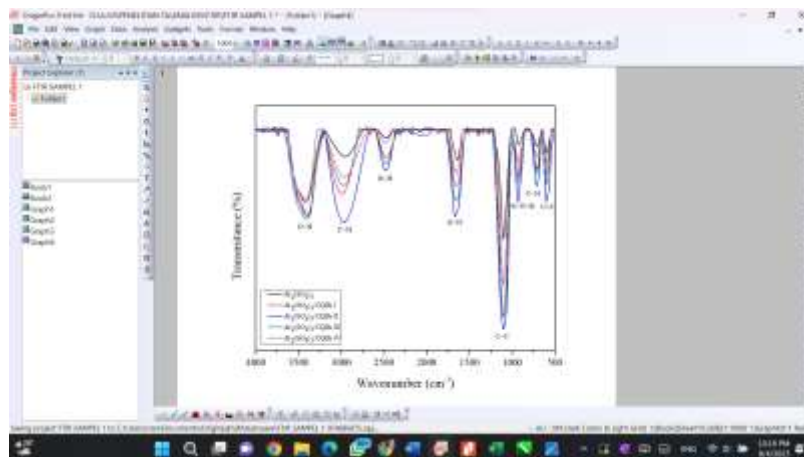
**Lampiran 4.** Tabel data absorbansi dan perhitungan %degradation

Abs dari UV	Pesticide (C0)	Sample Id	Time		
			C1 (Ct1 = 10 minutes)	C2 (Ct = 30 minutes)	C3(Ct3 = 60 minutes)
	1.0044	1. Al2(SO4)3/CQDs I	0.588	0.353	0.194
	1.0044	2. Al2(SO4)3/CQDs II	0.284	0.172	0.165
	1.0044	3. Al2(SO4)3/CQDs III	0.285	0.221	0.204
	1.0044	4. Al2(SO4)3/CQDs IV	0.589	0.353	0.204
% Degradation	Sample Id	%Degradation			
		C1 (Ct1 = 10 minutes)	C2 (Ct = 30 minutes)	C3(Ct3 = 60 minutes)	
		1. Al2(SO4)3/CQDs I	41.45758662	64.85463959	80.68498606
		2. Al2(SO4)3/CQDs II	71.72441258	82.87534847	83.57228196
		3. Al2(SO4)3/CQDs III	71.62485066	77.99681402	79.68936679
4. Al2(SO4)3/CQDs IV	41.35802469	64.85463959	79.68936679		

**Lampiran 5.** Tabel perhitungan (C0/Ct)

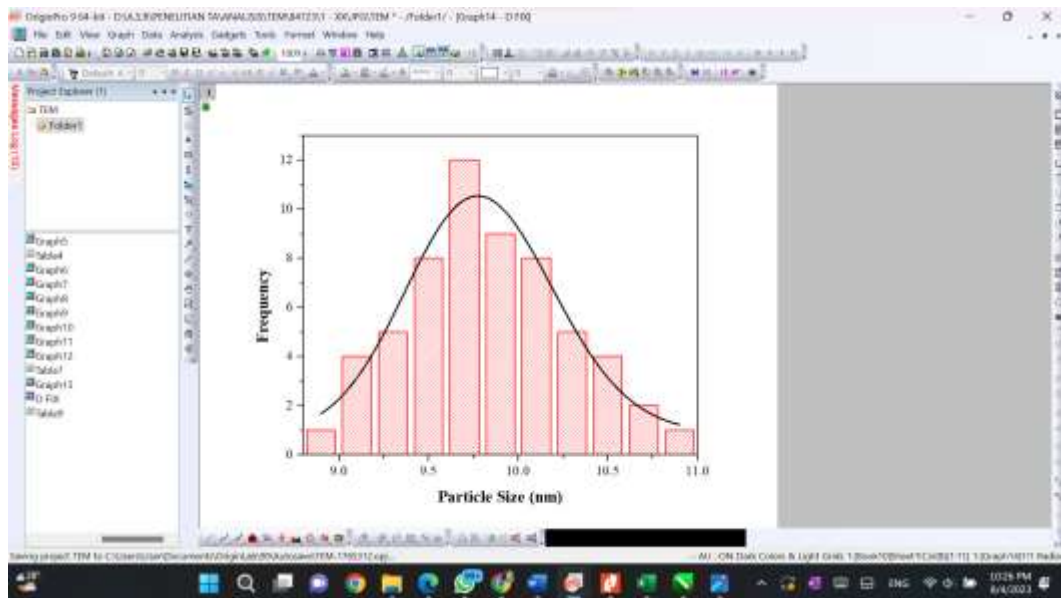
Laju Kinetik	Sample Id	t (minutes)	(C0/Ct)
	Al2(SO4)3/CQDs I	10	0.5854241
		30	0.3514536
		60	0.1931501
	Al2(SO4)3/CQDs II	10	0.2827559
		30	0.1712465
		60	0.1642772
	Al2(SO4)3/CQDs III	10	0.2837515
		30	0.2200319
		60	0.2031063
Al2(SO4)3/CQDs IV	10	0.5864198	
	30	0.3514536	
	60	0.2031063	

**Lampiran 6.** Analisis Data

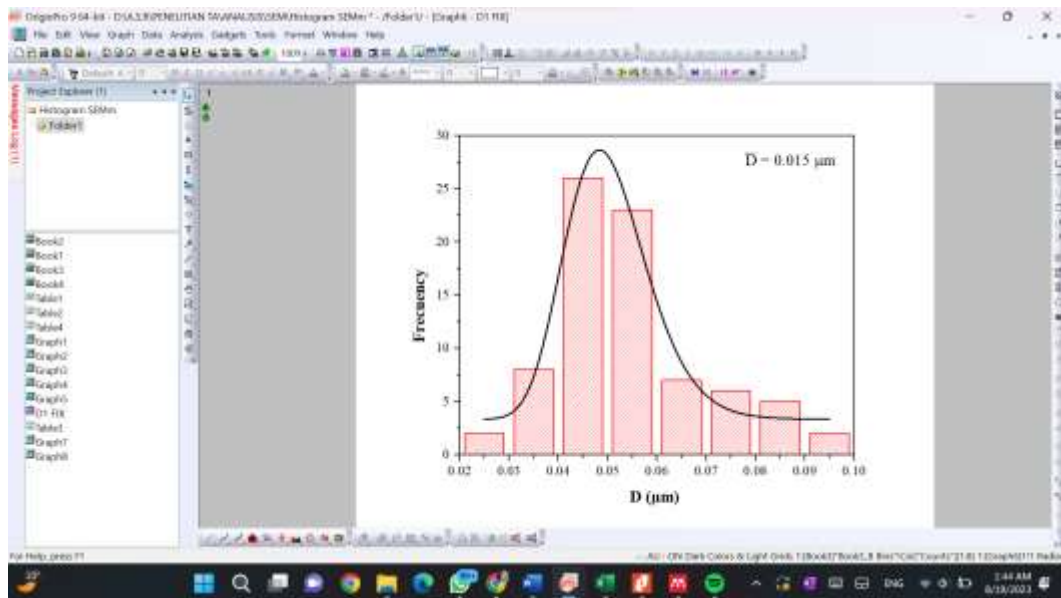


**Gambar 4.** Data FTIR



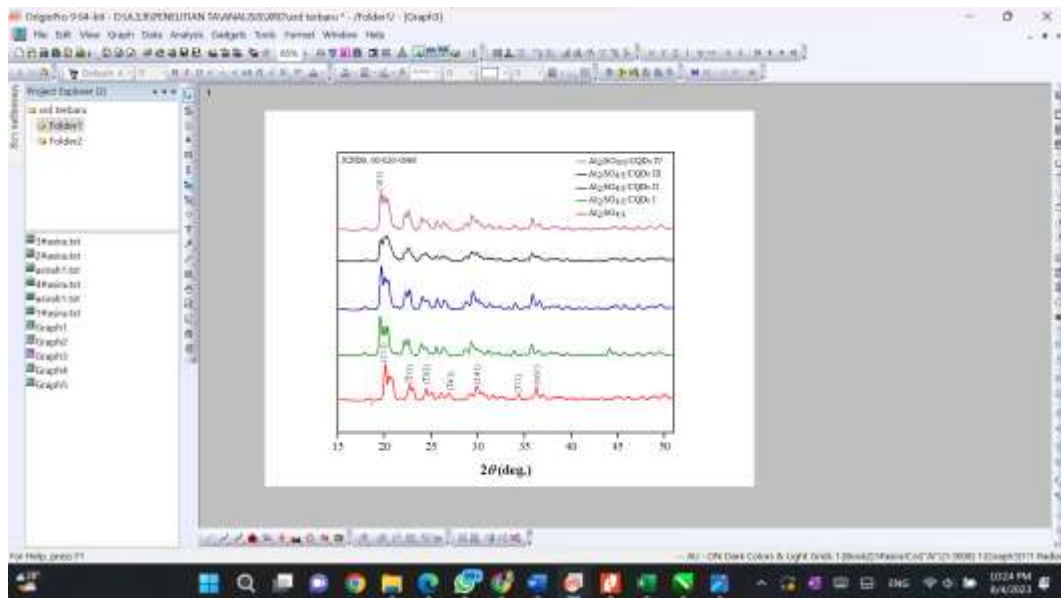


**Gambar 5. Data TEM**

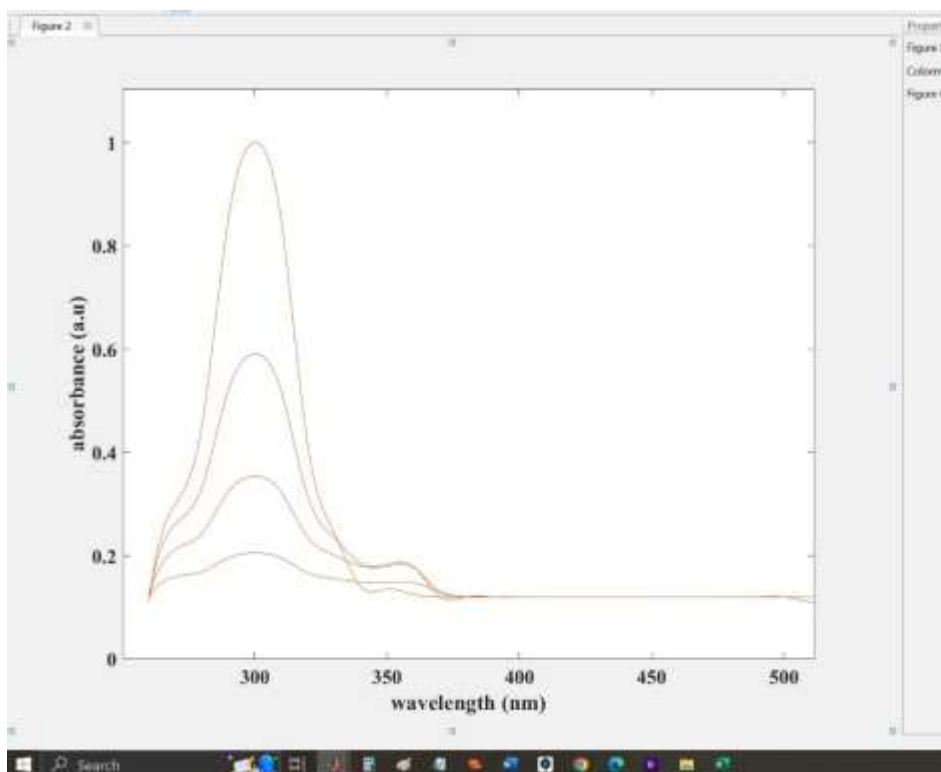


**Gambar 4. Data SEM**





**Gambar 7. Data XRD**



**Gambar 8. Data UV-Vis**