

Supplementary Information

Adsorpsi Anilin oleh Karbon Aktif Magnetik Cangkang Kelapa Sawit

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Tabel S1. Data SAA Karbon



ovaWin - Data Acquisition and Reduction
for NOVA instruments
007, Quantachrome Instruments
version 10.01



Analysis Operator: novawin Sample ID: Hani Alfiyani Sample Desc: Degase 200 Sample weight: 0.0532 g Outgas Time: 3.0 hrs Analysis gas: Nitrogen Press. Tolerance: 0.100/0.100 (ads/des) Analysis Time: 130.8 min Cell ID: 92	Date: 2021/06/03 Filename: C:\QC\data\Physisorb\CZ.qps Comment: Sample Volume: 0.17124 cc Outgas Temp: 150.0 C Bath Temp: 77.3 K Equil time: 60/60 sec (ads/des) End of run: 2021/06/03 21:31:44	Report Operator: novawin Date: 6/7/2021 Equil timeout: 240/240 sec (ads/des) Instrument: Nova Station A
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Area-Volume Summary

Data-Reduction Parameters Data

Adsorbate	Nitrogen	Temperature	77.350K	Liquid Density:	0.808 g/cc
	Molec. Wt.: 28.013 g	Cross Section:	16.200 Å ²		

Surface Area Data

MultiPoint BET.....	9.183e+00 m ² /g
Langmuir surface area.....	1.798e+01 m ² /g
BJH method cumulative adsorption surface area.....	1.027e+01 m ² /g
BJH method cumulative desorption surface area.....	9.103e+00 m ² /g
DH method cumulative adsorption surface area.....	1.045e+01 m ² /g
DH method cumulative desorption surface area.....	9.316e+00 m ² /g
t-method external surface area.....	9.183e+00 m ² /g
DR method micropore area.....	9.854e+00 m ² /g

Pore Volume Data

Total pore volume for pores with Radius less than 1070.65 Å at P/Po = 0.990966.....	2.046e-02 cc/g
BJH method cumulative adsorption pore volume.....	2.102e-02 cc/g
BJH method cumulative desorption pore volume.....	1.727e-02 cc/g
DH method cumulative adsorption pore volume.....	2.049e-02 cc/g
DH method cumulative desorption pore volume.....	1.696e-02 cc/g
DR method micropore volume.....	3.502e-03 cc/g

Pore Size Data

Average pore Radius	4.456e+01 Å
BJH method adsorption pore Radius (Mode Dv(r)).....	2.930e+01 Å
BJH method desorption pore Radius (Mode Dv(r)).....	1.688e+01 Å
DH method adsorption pore Radius (Mode Dv(r)).....	2.930e+01 Å
DH method desorption pore Radius (Mode Dv(r)).....	1.688e+01 Å
DR method micropore Half pore width.....	2.490e+01 Å
DA method pore Radius (Mode).....	1.170e+01 Å

Tabel S2. Data SAA KAM



NovWin - Data Acquisition and Reduction
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version 10.01



Analysis		Report	
Operator: novawin	Date: 2021/06/04	Operator: novawin	Date: 6/7/2021
Sample ID: Hani Alfiyani	Filename: C:\QCdata\Physisorb\MCAZ.qps		
Sample Desc: Degase 200	Comment:		
Sample weight: 0.0718 g	Sample Volume: 0.02506 cc		
Outgas Time: 3.0 hrs	Outgas Temp: 150.0 C		
Analysis gas: Nitrogen	Bath Temp: 77.3 K		
Press. Tolerance: 0.100/0.100 (ads/des)	Equil time: 60/60 sec (ads/des)	Equil timeout: 240/240 sec (ads/des)	
Analysis Time: 278.8 min	End of run: 2021/06/04 20:02:25	Instrument: Nova Station A	
Cell ID: 92			

Area-Volume Summary

Data-Reduction Parameters Data

Adsorbate	Nitrogen	Temperature	Liquid Density:
	Molec. Wt.: 28.013 g	77.350K	0.808 g/cc
		Cross Section: 16.200 Å²	

Surface Area Data

MultiPoint BET.....	1.139e+02 m²/g
Langmuir surface area.....	1.794e+02 m²/g
BJH method cumulative adsorption surface area.....	2.830e+01 m²/g
BJH method cumulative desorption surface area.....	1.360e+01 m²/g
DH method cumulative adsorption surface area.....	2.870e+01 m²/g
DH method cumulative desorption surface area.....	1.383e+01 m²/g
t-method external surface area.....	1.139e+02 m²/g
DR method micropore area.....	1.498e+02 m²/g




Pore Volume Data

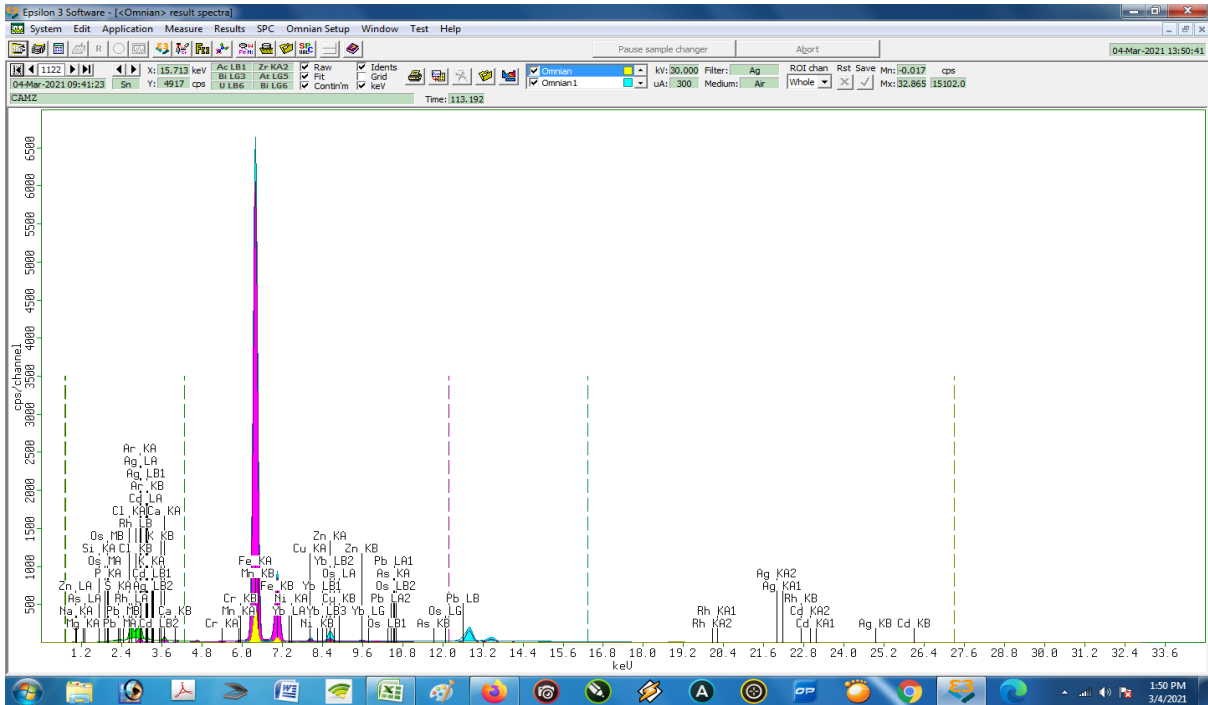
Total pore volume for pores with Radius less than 1107.96 Å at P/Po = 0.991274.....	1.370e-01 cc/g
BJH method cumulative adsorption pore volume.....	9.220e-02 cc/g
BJH method cumulative desorption pore volume.....	6.101e-02 cc/g
DH method cumulative adsorption pore volume.....	8.957e-02 cc/g
DH method cumulative desorption pore volume.....	5.956e-02 cc/g
DR method micropore volume.....	5.324e-02 cc/g

Pore Size Data

Average pore Radius	2.405e+01 Å
BJH method adsorption pore Radius (Mode Dv(r)).....	1.700e+01 Å
BJH method desorption pore Radius (Mode Dv(r)).....	1.693e+01 Å
DH method adsorption pore Radius (Mode Dv(r)).....	1.700e+01 Å
DH method desorption pore Radius (Mode Dv(r)).....	1.693e+01 Å
DR method micropore Half pore width.....	1.684e+01 Å
DA method pore Radius (Mode).....	9.300e+00 Å

Tabel S3. Data XRF

		Laboratorium Kimia Instrumen Fakultas MIPA Universitas Negeri Padang Instrumen XRF PANalytical Epsilon 3						
		Nama Sampel : CAMZ			Tanggal analisa: 4-Mar-21			
Costumer: Hani Alfriyani			Operator : Tarmizi					
call number/WA: 0823 9102 8954			WA & call : 0852 6369 3264					
e-mail : anisaind.ind@gmail.com			e-mail : tarmizi.mipaunp@gmail.com					
Pembimbing: Ir. Syafri Daud, M.T & Drs. Edward, HS., M.S			Wali alat : Dr. Hardeli. M.Si					
Elemen		Geology			Oxides			
Compound	Conc	Unit	Compound	Conc	Unit	Compound	Conc	Unit
Na	0	%	Na2O	0	%	Na2O	0	%
Mg	4.481	%	MgO	5.745	%	MgO	5.716	%
Si	3.614	%	SiO2	5.888	%	SiO2	5.857	%
P	1.623	%	P2O5	2.809	%	P2O5	2.793	%
S	0.921	%	SO3	1.722	%	SO3	1.712	%
Cl	0.542	%	Cl	0.403	%	K2O	0.001	%
K	0.002	%	K2O	0.001	%	CaO	2.901	%
Ca	2.887	%	CaO	2.92	%	Cr2O3	0.05	%
Cr	0.048	%	Cr	0.034	%	MnO	0.046	%
Mn	0.052	%	Mn	0.036	%	Fe2O3	76.316	%
Fe	80.507	%	Fe2O3	76.948	%	NiO	0.058	%
Ni	0.072	%	Ni	0.046	%	CuO	1.046	%
Cu	1.323	%	Cu	0.844	%	ZnO	2.16	%
Zn	2.75	%	Zn	1.752	%	As2O3	0	%
As	0	%	As	0	%	Ag2O	0.338	%
Ag	0.445	%	Ag	0.316	%	CdO	0.567	%
Cd	0.678	%	Cd	0.5	%	Yb2O3	0	%
Yb	0	%	Pb	0.036	%	OsO4	0	%
Os	0	%	Yb	0	%	PbO	0.038	%
Pb	0.056	%	Os	0	%	Cl	0.401	%
Element: dihitung sebagai unsur Geology : keadaan alami sampel Oxides : dihitung sebagai oksida								
								
Supervisor: Tarmizi, B.Sc., S.Pd., M.Pd								



Gambar S2. Spektra XRF