DAFTAR PUSTAKA

Conway, B.E., (1999). Electrochemical Supercapacitors. Springer US, Boston, MA. https://doi.org/10.1007/978-1-4757-3058-6

Rahman Faiz Suwandana, Diah Susanti, (2015). "Analisis Pengaruh Massa Redoktor Zinc terhadap Sifat Kapasitif Superkapasitor Material Graphene". JURNAL TEKNIK ITS VOL. 4 No. 1.

NURJAYANTI, F. (2017). PROGRAM ELEKTRIFIKASI DAN PERUBAHAN SOSIAL MASYARAKAT DI SURAKARTA 1902-1942 (Doctoral dissertation, Universitas Gadjah Mada).

Carlos Butarbutar, M. (2018). Kinerja Grafit/Grafena, Mg/Grafit dan sebagai Elektroda pada Katoda Baterai Primer (Doctoral dissertation, Universitas Sumatera).

Balaji, S.S., Elavarasan, A., Sathish, M., (2016). High performance supercapacitor using N-doped graphene prepared via supercritical fluid processing with an oxime nitrogen source. Electrochimica Acta 200, 37–45. https://doi.org/10.1016/j.electacta.2016.03.150.

Habibah, M. D. (2016). Variasi Holding Time Suhu Aktivasi Karbon Aktif dari Tempurung Kluwak (Pangium edule) sebagai Elektroda pada Superkapasitor.Inovasi Fisika Indonesia,5(1) https://doi.org/10.26740/ifi.v5n1.p%25p.

Huang, Y., Peng, L., Liu, Y., Zhao, G., Chen, J. Y., & Yu, G. (2016). Biobased Nano Porous Active Carbon Fibers for High-Performance Supercapacitors. ACS Applied Materials and Interfaces, 8(24), 15205–15215.https://doi.org/10.1021/acsami.6b02214.

Aziz, Hermansyah, Tetra, O. N., Alif, A., Syukri, S., & Perdana, Y. A. (2017). Performance Karbon Aktif dari Limbah Cangkang Kelapa Sawit sebagai Bahan Elektroda Superkapasitor. Jurnal Zarah, 5(2), 1–6. https://doi.org/10.31629/zarah.v5i2.208.

Farzana, R., Rajarao, R., Bhat, B. R., & Sahajwalla, V. (2018). Performance of an Activated Carbon Supercapacitor Electrode Synthesised from Waste Compact Discs (CDs). Journal of Industrial and Engineering Chemistry, 65, 387–396. https://doi.org/10.1016/j.jiec.2018.05.011.

Rosi, M., Ekaputra, M., Iskandar, F., Abdullah, M., Khoirurrijal.2012. Superkapasitor Menggunakan Polimer Hidrogel Elektrolit dan Elektroda Nanopori Karbon.Prosiding Seminar Nasional Material. Bandung: Institut Teknologi Bandung.

Maghfiroh M.A. (2018). Analisis Pengaruh Waktu Pembakaran Gas Asetilen Dan Waktu Milling Terhadap Hasil Sintesis dan Performa Elektrokimia Anoda Baterai dari Material $Li_4Ti_5O_{12}$ .Surabaya : Institut Teknologi Sepuluh Nopember Surabaya.

Hobby adi putra . 2016. Analisa Pengaruh Penambahan Karbon Aktif Dan Jenis Current Collector Terhadap Sifat Kapasitif Superkapasitor Berbahan Graphene.Thesis. institute teknologi sepuluh November.

Rosi, M., Abdullah, M., Khairurrijal. 2009. Sintesi Nanopori Karbon dari Tempurung Kelapa sebagai Elektroda Superkapasitor. Jurnal Nanosains & Nanoteknologi, ISSN 1979- 0880. Bandung: Institut Teknologi Bandung.

Arif ,A., Sudryo, Aryadi.2007. Penggunaan Grafit Batu Baterai Sebagai Alternatif Elektroda Spektrografi Emisi.JURNAL FORUM NUKLIR Vol.1 No. 2.

Suryanto, H., & Ismail, H. (2020). Pengaruh penambahan grafit pada aluminium cor terhadap keausan. Diakses di https://www. researchgate. net/publication/315114428. Diakses pada 15th September, 12, 9476-9482.

Gyawali Ghanashyam, Hae Kyung Jeong. *Synthesis of Nitrogen-doped PlasmaTreated Graphite for Supercapacitor Applications*. April 2019

Electrical Energy Storage. White paper. The International Electrotechnical Commission. (IEC), Geneva, Switzerland; 2011.

Siregar, F.M., Abdilah, T. (2019). Pengaruh Sisteam Pengisian Listrik Berulang Secara Otomatis Pada Sepeda Motor Listrik. UTND.

Oates, Krysten. (2010). Lithium-ion Batteries: Commercialization History and Current Market. Foresight Science and Technology.

Zhou, X.Y., Zheng, F., Liu, X.Y., Tang, L.J., Xue, G., Du, G.B., Yong, Q., Chen,M.Z., Zhu, L. L., 2012b. Glass transition of oxygen plasma treated enzymatic hydrolysis lignin. Bioresources 7, 4776–4785.

Sarojini Tiwari, Ashley Caiola, Xinwei Bai, Amoolya Lalsare, Jianli Hu.Enhanced Chemical Reactions with Microwave Plasma and MicrowaveHeating. Universitas Virginia Barat, AS

Butler JE, Mankelevich YA, Cheesman A, dkk. Understanding the chemical vapor deposition of diamonds: recent advances.J Phys Condensing Matter 2019.21:364201.

K. Glonek, A. Wroblewska, ´ E. Makuch, B. Ulejczyk, K. Krawczyk, R.J. Wrobel, ´ Z. C. Koren, B. Michalkiewicz, Oxidation of limonene using activated carbon modified in dielectric barrier discharge plasma, Appl. Surf. Sci. 420 (2017) 873–881, https://doi.org/10.1016/j.apsusc.2017.05.136.

D. Lee, S. H. Hong, K.H. Paek, W. T. Ju, Adsorbability enhancement of activated carbon by dielectric barrier discharge plasma treatment, Surf. Coat. Tech.200 (2005) 2277-2282.

Situmorang M. Kimia Lingkungan. Raja Grindo Persada.2017

Aminur, A., Sudarsono, S., La Hasanudin, Salimin, S., Abd. Kadir, Budiman Sudia, & Jaka Seru Dwi Saputra. (2022). Pelapisan Nikel dan Aluminium dalam proses elektroplating.Universitas Halu Oleo

W. Zhang, H. Liu, Q. Xia, Z. Li, Enhancement of dibenzothiophene adsorption on activated carbons by surface modification using low temperature oxygen plasma, Chem. Eng. J. 209 (2012) 597-600.

Licht, F.; Davis, M.A.; Andreas, H.A. (2020). Charge redistribution and electrode history impact galvanostatic charging/discharging and associated figuresof merit. Journal of Power Sources, 446(), 227354–. doi:10.1016/j.jpowsour.2019.227354

Azam, Mohd Asyadi & Radzi, Mohd & Mupit, Muazzin & Osman, Hisyamuddin & Farahiyan, Rose & Samat, Khairul & Shahadan, Mohd & Isomura, Kazuki & Islam, Muhammad. (2020).

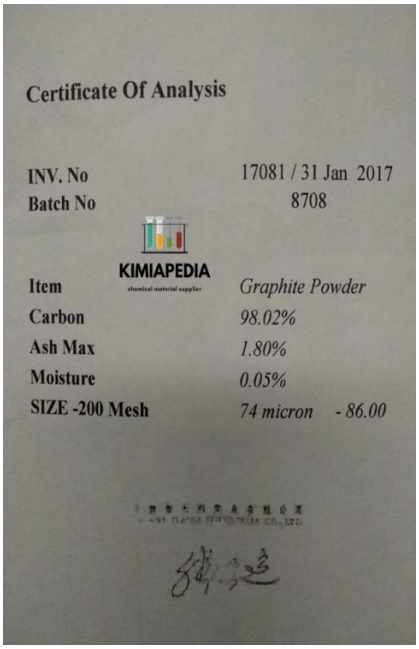
Cyclic Voltammetry and Galvanostatic Charge-Discharge Analyses of Polyaniline/Graphene Oxide Nanocomposite based Supercapacitor. Malaysian Journal on Composites Science and Manufacturing. 3.14-26.

Analisis Pengaruh Waktu Pembakaran Gas Asetilen Dan Waktu Milling Terhadap Hasil Sintesis dan Performa Elektrokimia Anoda Baterai dari

Material $Li_4Ti_5O_{12}$

Maghfiroh M.A. (2018). Analisis Pengaruh Waktu Pembakaran Gas Asetilen Dan Waktu Milling Terhadap Hasil Sintesis dan Performa Elektrokimia Anoda Baterai dari Material $Li_4Ti_5O_{12}$ .Surabaya : Institut Teknologi Sepuluh Nopember Surabaya.

LAMPIRAN



Certificate Of Analysis

INV. No	17081 / 31 Jan 2017
Batch No	8708
Item	*Graphite Powder*
Carbon	*98.02%*
Ash Max	*1.80%*
Moisture	*0.05%*
SIZE -200 Mesh	*74 micron - 86.00*

KIMIAPEDIA
chemical material supplier

CERTIFICATE OF ANALISYS

Material : 500 Mesh (Charcoal Powder)

The above material has been sampled, and tested in acordance with standard prosedure
the result of analisys are follows :

NO	PARAMETER	UNIT	TEST RESULT	TEST METHODE
1	Bulk Density	gr/ml	0.406	KSM 1802 - 98 (JIS K 1474)
2	Moisture content	(%)	12,0	
3	Iodine number	(mg/gr)	280	
4	Distribution Size			

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Tabel Perhitungan

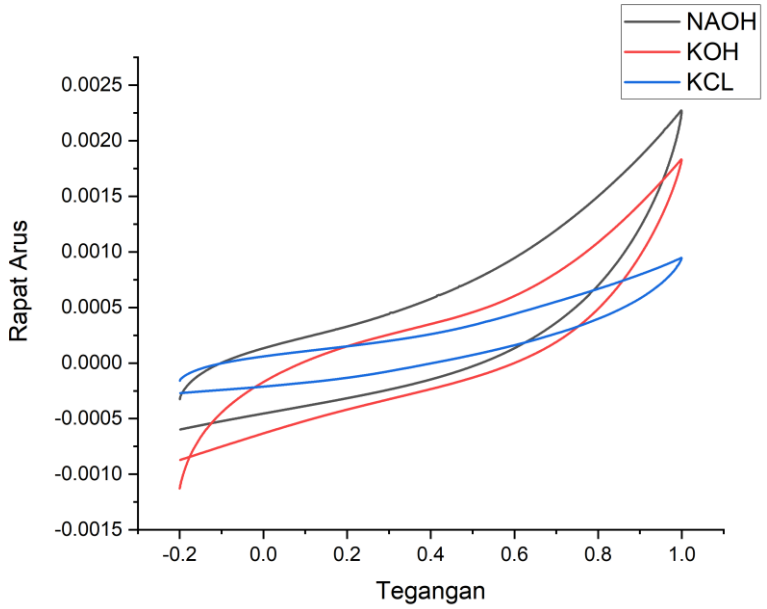
CV Grafit					
Nikel					
Elektrolit	Area	Potensial Window	Massa	Scan rate	Cs
Naoh	0.0079	0.8	0.5	0.01	98.75
KOH	0.0058	0.8	0.5	0.01	72.5
KCL	0.0027	0.8	0.5	0.01	33.75
Aluminium					
Sampel	Area	Potensial Window	Massa	Scan rate	Cs
Naoh	0.0037	0.8	0.5	0.01	46.25
KOH	0.0034	0.8	0.5	0.01	42.5
KCL	0.0023	0.8	0.5	0.01	28.75

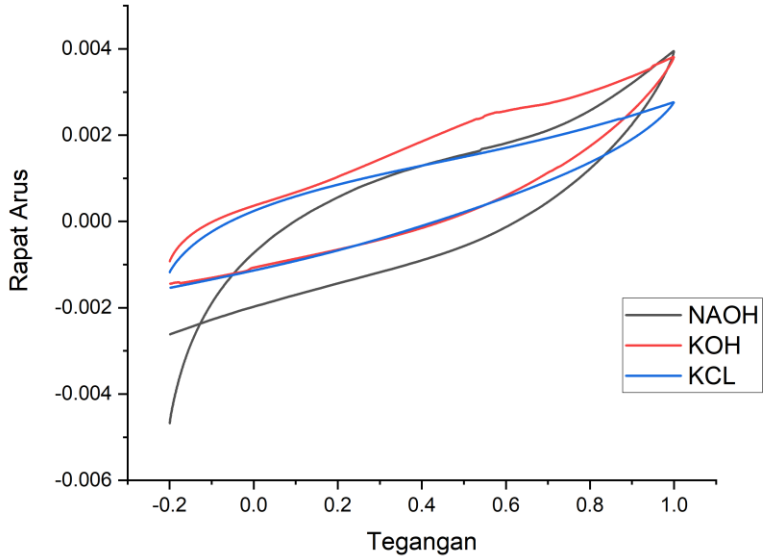
CV KA					
Nikel					
Elektrolit	Area	Potensial Window	Massa	Scan rate	Cs
Naoh	0.0038	0.8	0.5	0.01	47.5
KOH	0.0024	0.8	0.5	0.01	30
KCL	0.0013	0.8	0.5	0.01	16.25
Aluminium					
Sampel	Area	Potensial Window	Massa	Scan rate	Cs
Naoh	0.0014	0.8	0.5	0.01	17.5
KOH	0.0012	0.8	0.5	0.01	15
KCL	0.0005	0.8	0.5	0.01	6.25

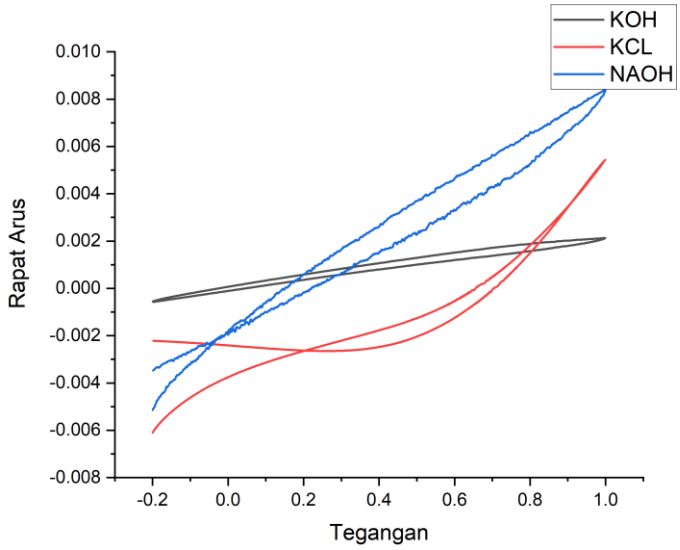
GCD Grafit					
Nikel					
Sampel	Cs	Potensial Window	Waktu Discharge	Energi	Power
Naoh	98.75	0.8	2.134	8.777778	14807.87254
KOH	72.5	0.8	2.79	6.444444	8315.412186
KCL	33.75	0.8	2.91	3	3711.340206
KA					
Sampel	Cs	Potensial Window	Waktu Discharge	Energi	Power
Naoh	46.25	0.8	9.4	4.111111	1574.468085
KOH	42.5	0.8	11	3.777778	1221.593461
KCL	28.75	0.8	12.833	2.5556	716.9017377

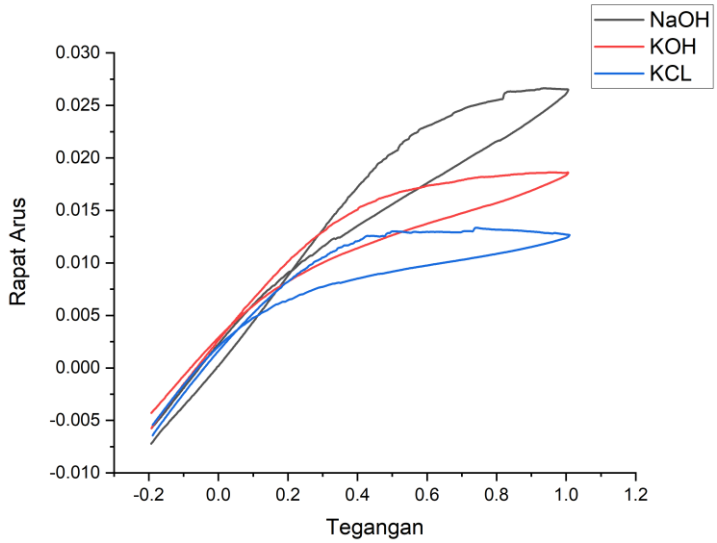
GCD KA					
Nikel					
Sampel	Cs	Potensial Window	Waktu Discharge	Energi	Power
Naoh	47.5	0.8	3.19	4.222222	4764.890282
KOH	30	0.8	6.6	2.666667	1454.545455
KCL	16.25	0.8	8.5	1.444444	611.7647059
KA					
Sampel	Cs	Potensial Window	Waktu Discharge	Energi	Power
Naoh	17.5	0.8	11	1.555556	509.0909091
KOH	15	0.8	12.5	1.333333	384
KCL	6.25	0.8	14.64	0.5556	136.6120219

Grafit hungan antara rapat arus dan tegangan

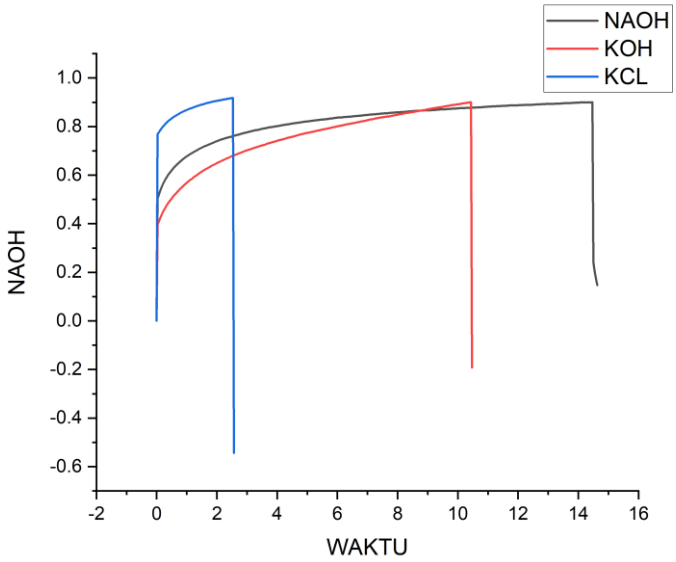


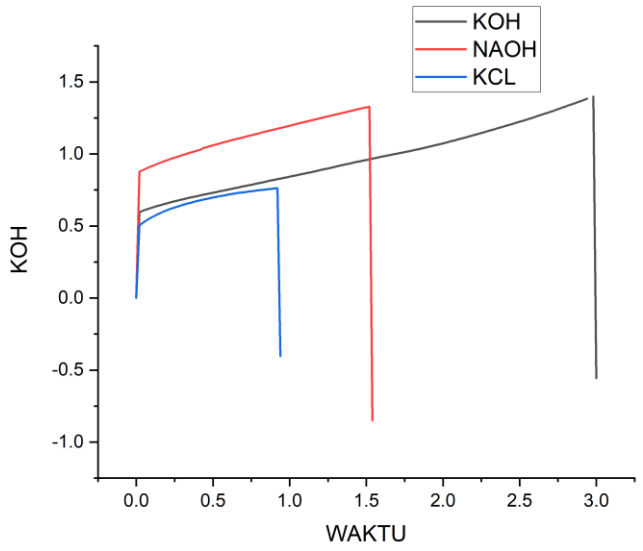


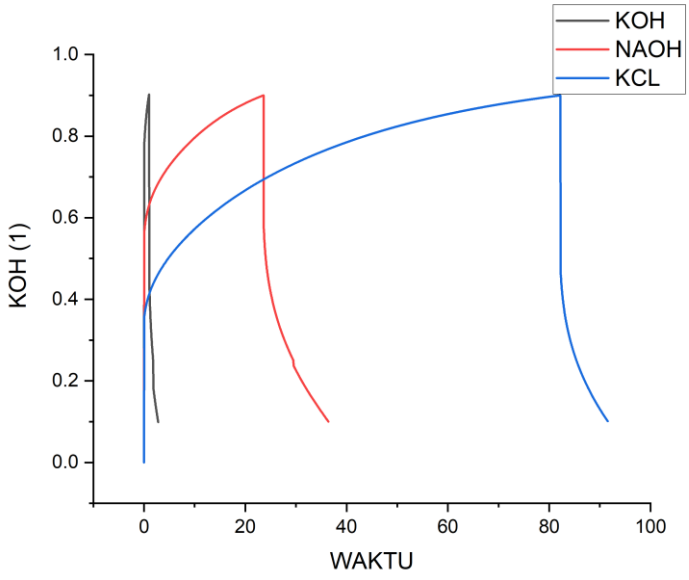

KOH
KCL
NAOH
Rapat Arus
0.010
0.008
0.006
0.004
0.002
0.000
-0.002
-0.004
-0.006
-0.008
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
Tegangan

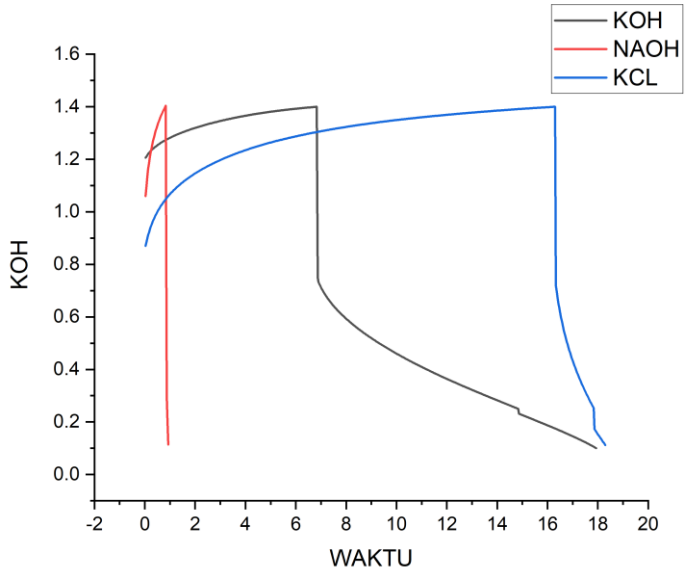

NaOH
KOH
KCL
Rapat Arus
0.030
0.025
0.020
0.015
0.010
0.005
0.000
-0.005
-0.010
-0.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Tegangan

Grafik pengisian dan pengosongan






KOH
NAOH
KCL
KOH (1)
WAKTU
1.0
0.8
0.6
0.4
0.2
0.0
0
20
40
60
80
100


KOH
NAOH
KCL
KOH
WAKTU
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-2
0
2
4
6
8
10
12
14
16
18
20