

PERKARA : CADANGAN KADAR CAJ PERKHIDMATAN ANALISIS SAMPEL YANG  
DITAWARKAN OLEH FAKULTI SAINS, UNIVERSITI PUTRA  
MALAYSIA

KEPUTUSAN : BIL. 4 (2023) 14 APRIL 2023

JAWATANKUASA TETAP  
KEWANGAN (JKTK)

MINIT : MINIT 21/4 (2023)

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**CADANGAN KADAR CAJ PERKHIDMATAN ANALISIS SAMPEL YANG DITAWARKAN OLEH FAKULTI  
SAINS, UNIVERSITI PUTRA MALAYSIA**

**KADAR ANALISIS JABATAN BIOLOGI:**

BIL	ANALISIS ALATAN	KATEGORI A (RM)	KATEGORI B (RM)	KATEGORI C (RM)	CATATAN
1.	Atomic Absorption Spectrophotometer	10.00 - 15.00	15.00 – 20.00	20.00 – 25.00	Per elemen
2.	Autoclave	15.00 – 20.	20.00 – 25.00	25.00 – 30.00	Per Run
3.	Basic centrifuge	20.00 – 25.00	25.00 – 30.00	30.00 – 35.00	Per hari
4.	Compound Microscope	20.00 – 22.00	22.00 – 24.00	24.00 – 26.00	Per jam
5.	Freeze Dryer System	17.00 – 20.00	20.00 – 23.00	23.00 – 26.00	Per jam
6.	Gas Chromatography – FID (GC-FID)	100.00 – 130.00	130.00 – 170.00	170.00 – 200.00	Per suntikan
7.	Gas Chromatography Mass Spectrometry/Mass Spectrometry	150.00 – 250.00	170.00 – 270.00	190.00 – 290.00	Per suntikan
8.	High Performance Liquid Chromatography	80.00 – 100.00	100.00 – 150.00	150.00 – 180.00	Per suntikan
9.	High Speed Centrifuge	60.00 – 80.00	80.00 – 100.00	100.00 – 120.00	Per jam
10.	Inverted Microscope	36.00 – 40.00	40.00 – 44.00	44.00 – 48.00	Per jam
11.	Microplate Reader	50.00 – 60.00	60.00 – 70.00	70.00 – 80.00	Per run
12.	Multiparameter Water Quality Meter	50.00 – 60.00	60.00 – 70.00	70.00 – 80.00	Per hari
13.	Pemprosesan Slaid – Unit Histologi	30.00 – 40.00	40.00 – 50.00	50.00 – 60.00	Per sampel
14.	UV/VIS Spectrophotometer	10.00 – 30.00	30.00 – 50.00	50.00 – 80.00	Per jam

**KADAR ANALISIS JABATAN FIZIK:**

BIL	ANALISIS ALATAN	KATEGORI A (RM)	KATEGORI B (RM)	KATEGORI C (RM)	CATATAN
1.	X-Ray Diffraction (XRD) Powder/pellet/solid 20-80 (2 theta) MS ISO/IEC 17025	250.00 – 300.00	250.00 – 300.00	250.00 – 300.00	/sampel
2.	X-Ray Diffraction (XRD) Powder/pellet/solid 20-80 (2 theta)	200.00 – 250.00	250.00 – 300.00	300.00 – 350.00	/sampel
3.	X-Ray Diffraction (XRD) Powder/pellet/solid 4-90 (2 theta)	300.00 – 350.00	350.00 – 400.00	400.00 – 450.00	/sampel
4.	X-Ray Diffraction (XRD) Thin Film 20-80 (2 theta)	300.00 – 350.00	350.00 – 400.00	400.00 – 450.00	/sampel
5.	X-Ray Diffraction (XRD) Thin Film 4-90 (2 theta)	500.00 – 550.00	550.00 – 600.00	600.00 – 650.00	/sampel
6.	UV VIS NIR Spectrometer- Direct method	70.00 – 90.00	90.00 – 120.00	110.00 – 140.00	/sampel
7.	UV VIS NIR Spectrometer- Integrating sphere	200.00 – 250.00	250.00 – 300.00	300.00 – 350.00	/sampel
8.	Hall Effect Measurement System (HEMS)-Hall effect (room temperature)	150.00 – 200.00	200.00 – 250.00	250.00 – 300.00	/sampel
9.	Hall Effect Measurement System (HEMS)-IV curve (room temperature)	150.00 – 200.00	200.00 – 250.00	250.00 – 300.00	/sampel
10.	Hall Effect Measurement System (HEMS)-Resistance vs temperature	200.00 – 250.00	250.00 – 300.00	300.00 – 350.00	/sampel
11.	Hall Effect Measurement System (HEMS)-Magneto resistance	250.00 – 300.00	300.00 – 350.00	350.00 – 400.00	/sampel
12.	Hall Effect Measurement System (HEMS)-Resistance vs temperature included magneto resistance measurement	500.00 – 550.00	800.00 – 850.00	1000.00 – 1050.00	/sampel
13.	Atomic Force Microscope (AFM) -Topography (ScanAssist/Non-Contact) -Penambahan titik (RM20/titik) -Penambahan saiz imej (RM20/imej) -Topography Tips (RM200/tips)	200.00 – 400.00	300.00 – 500.00	350.00 – 550.00	/sampel
14.	Atomic Force Microscope (AFM)	200.00 – 250.00	250.00 – 300.00	300.00 – 350.00	/jam (tidak termasuk tips)

	-Topography (ScanAssist/Non-Contact) -Penambahan titik (RM20/titik) -Penambahan saiz imej (RM20/imej) -Topography Tips (RM200/tips)				
15.	Atomic Force Microscope (AFM) -Thickness	200.00 – 250.00	250.00 – 300.00	300.00 – 350.00	/jam
16.	Conductive Atomic Force Microscope (CAFM) -CAFM tips (RM400/tips)	300.00 – 350.00	350.00 – 400.00	400.00 – 450.00	/jam (tidak termasuk tips)
17.	Magnetic Force Microscopy (MFM) -MFM tips (RM400/tips)	300.00 – 350.00	350.00 – 400.00	400.00 – 450.00	/jam (tidak termasuk tips)
18.	Piezoelectric Force Microscopy (PFM) -PFM tips (RM400/tips)	350.00 – 400.00	400.00 – 450.00	450.00 – 500.00	/jam (tidak termasuk tips)
19.	Atomic Force Microscope (AFM) -Force spectroscopy	250.00 – 400.00	300.00 – 350.00	350.00 – 600.00	/titik
20.	Contact Angle (Model: Theta Lite) -Contact angle	100.00 – 150.00	150.00 – 200.00	200.00 – 250.00	/sampel
21.	Thermal Evaporator (Model: Edwards Auto 306) -Tungsten Filament (RM100) -Tungsten/molydebnium boat (RM200)	250.00 – 300.00	300.00 – 350.00	350.00 – 400.00	/sampel (tidak termasuk boats)
22.	Monowave 400 -Standard setting measurement	100.00 – 150.00	150.00 – 200.00	200.00 – 250.00	/jam
23.	Oven	160.00 – 210.00	215.00 – 280.00	270.00 – 350.00	/hari
24.	Oven	15.00 – 20.00	20.00 – 25.00	25.00 – 35.00	/jam
25.	Furnace (Max 1000 degree)	215.00 – 280.00	290.00 – 375.00	360.00 – 470.00	/jam
26.	4 Point Probe / 2 probe technique (room temperature)	50.00 – 100.00	80.00 – 130.00	100.00 – 150.00	/sampel
27.	Ball Mill	20.00 – 26.00	30.00 – 39.00	40.00 – 52.00	/hari
28.	High Energy Ball Mill	30.00 – 39.00	45.00 – 58.50	60.00 – 78.00	/hari
29.	Dispersive X-Ray Fluorescence (XRF) Shimadzu RDX 720 - Elemental & Oxide Group Analysis	200.00 – 250.00	200.00 – 250.00	250.00 – 300.00	/run

30.	Electron Spin Resonance Spectrometer (ESR) - Detecting G-Value (unpair electron) room temperature	150.00 – 200.00	200.00 – 250.00	250.00 – 300.00	/run
31.	Electron Spin Resonance Spectrometer (ESR) - Detecting G-Value (unpair electron) High temperature (up to 200°C) Additional RM50	200.00 – 250.00	250.00 – 300.00	300.00 – 350.00	/run
32.	Electron Spin Resonance Spectrometer (ESR) - Detecting G-Value (unpair electron) low temperature (up to 165°C) Additional RM50 per step (-40°C from room temperature)	(-20°C) 200.00 – 250.00  (-60°C) 250.00 – 300.00  (-100°C) 300.00 – 350.00  (-140°C) 350.00 – 400.00  (-165°C) 400.00 – 450.00	(-20°C) 250.00 – 300.00  (-60°C) 300.00 – 350.00  (-100°C) 350.00 – 400.00  (-140°C) 400.00 – 450.00  (-165°C) 450.00 – 500.00	(-20°C) 300.00 – 350.00  (-60°C) 350.00 – 400.00  (-100°C) 400.00 – 450.00  (-140°C) 450.00 – 500.00  (-165°C) 500.00 – 550.00	/run
33.	Photoluminescence Spectrometer A.Emmission B.Excitation	160.00 – 210.00	200.00 – 250.00	250.00 – 300.00	/sampel
34.	Photoluminescence Spectrometer (low temperature additional RM50 per step)	300.00 – 350.00	350.00 – 400.00	400.00 – 450.00	/run
35.	Dynamic Mechanical Analyzer (DMA) -Mechanical analysis	150.00 – 165.00	180.00 – 198.00	190.00 – 200.00	/sampel
36.	AC Susceptometer System (ACS) -AC susceptibilty measurement	150.00 – 200.00	200.00 – 250.00	300.00 – 350.00	/sampel
37.	Vibrating Sample Magnetometer (VSM) -M vs H hysteresis curve measured at room temperature	80.00 – 130.00	150.00 – 200.00	250.00 – 300.00	/sampel

38.	DC and RF Magnetron Sputtering System -Thin film fabricate via sputtering process	150.00 – 200.00	200.00 – 250.00	300.00 – 350.00	/sampel
39.	Direct Q3-UV package Dionized Water	20.00 – 25.00	25.00 – 30.00	30.00 – 35.00	/liter
40.	Hydraulic Pellet Press-Oil Pressure System	85.00 – 90.00	110.00 – 115.00	140.00 – 145.00	/hari
41.	Rockwell Hardness Tester	30.00 – 33.00	35.00 – 39.00	50.00 – 50.00	/sampel
42.	Instron Universal Tester	80.00 – 100.00	110.00 – 140.00	140.00 – 180.00	/sampel
43.	Metkon Micracut 125 Diamond Precision	95.00 – 125.00	130.00 – 170.00	160.00 – 210.00	/jam

**KADAR ANALISIS JABATAN KIMIA:**

BIL	ANALISIS PERKHIDMATAN	KATEGORI A (RM)	KATEGORI B (RM)	KATEGORI C (RM)	CADANGAN HARGA FAST-TRACK (RM)	CATATAN
1.	ICP-OES	10.00 – 15.00	15.00 – 20.00	20.00 - 25.00	Harga asal x2	/logam
2.	AAS	10.00 – 15.00	15.00 – 20.00	20.00 – 25.00		/logam
3.	CHNS	80.00 - 100.00	100.00 – 150.00	150.00 – 180.00		/sampel
4.	BET/Surface area/porosity	200.00 – 300.00	300.00 – 500.00	400.00 – 600.00		/sampel
5.	HPLC/UPLC	80.00 – 100.00	100.00 – 150.00	150.00 – 180.00		/Suntikan
6.	GC-FID	100.00 – 130.00	130.00 – 170.00	170.00 – 200.00		/Suntikan
7.	GC-MS	130.00 – 150.00	150.00 – 200.00	200.00 – 250.00		/Suntikan
8.	FTIR	80.00 – 100.00	100.00 – 150.00	150.00 – 180.00		/Sampel
9.	NMR 500 MHz-1H	40.00 – 80.00	50.00 – 100.00	80.00 – 120.00		/Sampel
10.	NMR 500 MHz-13C	60.00 – 120.00	70.00 – 250.00	100.00 – 280.00		/Jam
11.	NMR 500 MHz-13C (jam seterusnya)	40.00 – 120.00	50.00 – 250.00	80.00 – 280.00		/Jam
12.	NMR 500 MHz-DEPT	70.00 – 130.00	80.00 – 250.00	100.00 – 280.00		/Jam
13.	NMR 500 MHz-DEPT (jam seterusnya)	50.00 – 130.00	60.00 – 250.00	80.00 – 280.00		/Jam
14.	NMR 500 MHz-COSY	80.00 – 150.00	100.00 – 250.00	120.00 – 280.00		/Jam
15.	NMR 500 MHz-COSY (jam seterusnya)	70.00 – 150.00	80.00 – 250.00	100.00 – 280.00		/Jam
16.	NMR 500 MHz-HMQC	80.00 – 150.00	100.00 – 250.00	120.00 – 280.00		/Jam
17.	NMR 500 MHz-HMQC (jam seterusnya)	70.00 – 150.00	80.00 – 250.00	100.00 - 280.00		/Jam
18.	NMR 500 MHz-HMBC	80.00 – 150.00	100.00 – 250.00	120.00 – 280.00		/Jam
19.	NMR 500 MHz-HMBC (jam seterusnya)	70.00 – 150.00	80.00 – 250.00	100.00 - 280.00		/Jam
20.	NMR 500 MHz-NOESY	80.00 – 200.00	100.00 – 300.00	120.00 – 350.00		/Jam
21.	NMR 500 MHz-NOESY (jam seterusnya)	70.00 – 200.00	80.00 – 300.00	100.00 – 350.00		/Jam

22.	Pelarut NMR	20.00	30.00	30.00	/Jam
23.	NMR 500 MHz- Proses Data 1D	5.00	5.00	5.00	/Data
24.	NMR 500 MHz- Proses Data 2D	10.00	10.00	10.00	/Data
25.	TGA	180.00 – 200.00	200.00 – 250.00	250.00 – 400.00	/Sampel
26.	DSC	100.00 – 120.00	120.00 – 160.00	160.00 – 300.00	/Sampel
27.	TGA/DSC1 (With DSC Thermogram)	180.00 – 250.00	250.00 – 300.00	350.00 – 450.00	/Sampel
28.	Powder X-Ray Diffraction (PXRD)	100.00 – 130.00	200.00 – 250.00	250.00 – 300.00	/Sampel
29.	UV-VIS/ Spectrofluorometer	10.00 – 30.00	30.00 – 50.00	50.00 – 80.00	/Sampel
30.	XRD Single Crystal (SCXRD)	300.00 – 400.00	400.00 – 500.00	500.00 – 600.00	/Sampel
31.	TPDRP (TPD-CO2)	130.00 – 200.00	200.00 – 300.00	300.00 – 350.00	/Sampel

**Kategori A: Kakitangan Universiti, Pelajar, Persatuan UPM dan Anak Syarikat UPM**

**Kategori B: Kerajaan / Badan Berkanun / Agensi Kerajaan**

**Kategori C: Badan Perniagaan Kerajaan / Swasta / Persendirian / Koperasi / Orang Awam**

**HUBUNGI : Fakulti Sains  
Universiti Putra Malaysia  
43400 Serdang  
Selangor Darul Ehsan  
MALAYSIA**

**Tel. : 03-9769 3701/3174 (Pentadbiran)  
Tel. : 03-9769 6601/6602/6603 (General Line)  
Faks : 03-9769 3237  
Emel : fs.enquiry@upm.edu.my**