

SENARAI & STATUS ALAT HI END SEMUA PTJ

BIL	PTJ	NAMA ALAT :	LOKASI :	PEGAWAI BERTANGGUNG JAWAB :	NO TEL	STATUS PERALATAN :	APLIKASI	Harga Servis Peralatan
1	MB	Microinjector Manipulator & Research Fluorescence Microscope	Bilik Instrumentasi, MB	Nik Mohd Hafiz Bin Abdullah (Pegawai Sains)	09-668 3752	Boleh Digunakan	<ul style="list-style-type: none"> • Single cell isolation, microinjection into adherent and suspension cells • Usage in life cells viewing, injection of foreign substance into cell; embryology. 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
2	MB	Gas Chromatography Mass Spectrophotometer	Bilik Instrumentasi Kromatografi, MB	Muhammad Zulhildi Bin Ramlee (Pegawai Sains)	09-668 3998	Boleh Digunakan	<ul style="list-style-type: none"> • Monitoring and tracking organic pollutants in the environment. • Analysis - chloro-phenols in water and soil, polycyclic aromatic hydrocarbons (PAH), essential oil and identification of unknown 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
3	MB	Semi-Preparative High Performance Liquid Chromatography	Bilik Instrumentasi Spektroskopi, MB	Nik Mohd Hafiz Bin Abdullah (Pegawai Sains)	09-668 3752	Boleh Digunakan	<ul style="list-style-type: none"> • Chromatographic separation, sample purification & recovery • Fractionate target components • Analysis - peptides, chemistry, environment, and food products. 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
4	MB	Chemical Descrete Analyzer	Bilik Instrumentasi Spektroskopi, MB	Nor Atiyah Binti Mohamed (Pegawai Sains)	09-668 3360	Boleh Digunakan	<ul style="list-style-type: none"> • Water quality & nutrient testing analysis • Analysis - drinking water, wastewater, environmental samples 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)

5	MB	Surface Area & Porosimetry Analyzer	Bilik Instrumentasi Terma 2, MB	Mohd Azlien Bin A. Jalil (Penolong Pegawai Sains)	09-668 3292	Boleh Digunakan	<ul style="list-style-type: none"> • Determination of surface surface areas, pore sizes, shapes and distributions of material • Analysis - catalysts & activated carbon 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
6	MB	Total Organic Carbon And Nitrogen Analyzer	Bilik Instrumentasi Spektroskopi, MB	Muhammad Zulhilmi Bin Ramlee (Pegawai Sains)	09-668 3998	Boleh Digunakan	<ul style="list-style-type: none"> • Measurement of total carbon and nitrogen content in water, quantity dissolved, quantity suspended* • Measurement of total carbon, organic carbon, inorganic carbon in water • Measurement of dissolved CO2 in water 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
7	PPIMG	Fundamental Of Network Application And Development System Trainer	Makmal Rangkaian Piawaian CISCO	Encik Sumazly Bin Sulaiman (Pensyarah)	09-668 3393	Boleh Digunakan	CISCO: Routing and Switching (R&S) Module 1 and 2	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
8	AKUATROP	Measuring Microscope	Bilik Mikroskop 2, AKUATROP	Gusti Afiz Bin Gusti Ruslan Noor Pegawai Perikanan	09-668 3662	Jarang Digunakan	High precision measuring microscopes featuring the latest in digital imaging technology Measuring microscopes are excellent solutions when you need to inspect and measure 2D and 3D small parts	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)

9	AKUATROP	Table Top Microscope	Bilik Mikroskop 1, AKUATROP	Farizan Abdullah Pegawai Sains	09-668 3883	Boleh Digunakan	<ul style="list-style-type: none"> • To observe with fresh, frozen and cryosectioned material • To observe a non-conductive sample without coating • Stereoscopic morphological observation with high resolution and a greater depth of focus 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
10	AKUATROP	Palletizer Machine	Hatcheri Kelah, AKUATROP	Ahmad Ideris Bin Abdul Rahim Pegawai Sains	09-668 3532	Rosak	<ul style="list-style-type: none"> i. Extruder - to produce floating fish feed pellet via extrusion process ii. Drying oven - To drying raw material and pellet iii. Grinder - to grinding gross raw material iv. Mixer - to mixing raw material 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
11	AKUATROP	Biological Inverted Microscope	Bilik Mikroskop 1, AKUATROP	Zulizah Binti Ochi Pegawai Sains	09-668 3839	Jarang Digunakan	<ul style="list-style-type: none"> 1) For in-vitro fertilization, live cell microscopy and biological work. 2) Epi-fluorescence and video microscopy. 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
12	IMB	Ultra Performance Liquid Chromatography (UPLC)	Bilik Instrumen, Makmal IMB	Julius Yong Fu Siong (Pegawai Sains Kanan)	09-668 3679	Boleh Digunakan	Fractionation of crude samples into fractions/ compounds	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
13	IMB	Superconducting Fourier NMR Spectrometer	Bilik NMR, Makmal IMB	Desy Fitriya Binti Syamsumir (Pegawai Sains)	09-668 3779	Boleh Digunakan	Elucidation of compounds and determination of chemical formula	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)

14	IMB	Floor Type Ultracentrifuge	Makmal IMB	Desy Fitriya Binti Syamsumir (Pegawai Sains)	09-668 3779	Boleh Digunakan	Separation of protein samples for protein analysis	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
15	IMB	Cabinet Freeze Dryer	Makmal IMB	Julius Yong Fu Siong (Pegawai Sains Kanan)	09-668 3679	Boleh Digunakan	Samples drying in large scale	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
16	IMB	Automated Bacterial Identification System	Makmal Mikrobiologi	Nor Atikah bt Mohamed Zin (Pegawai Sains Kanan)	09-668 3603	Boleh Digunakan	Identification of bacteria and antibiotic susceptibility test	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
17	IMB	Gas Chromatography Mass Spectrometer Shimadzu/GCMS QPP2010 Ultra/Jepun	Bilik GC&LC	Julius Yong Fu Siong (Pegawai Sains Kanan)	09-668 3679	Boleh Digunakan	Determination of volatile compound (gas phases)	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
18	IMB	High Resolution Liquid Chromatograph Tandem Mass Spectrometer With-MS And TOF Technology Shimadzu/LCMS-IT -TOF/Jepun	Bilik GC&LC	Julius Yong Fu Siong (Pegawai Sains Kanan)	09-668 3679	Boleh Digunakan	Determination of compound mass (liquid phases)	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
19	IMB	High Performance Thin Layer Chromatography	Makmal Produk Semulajadi	Desy Fitriya Binti Syamsumir (Pegawai Sains)	09-668 3779	Boleh Digunakan	Separation of crude samples based on rf value	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
20	IMB	High Content Screening	Makmal Kultur Sel Haiwan	Murni Nur Islamiah bt Kassim (Pegawai Sains)	09-668 3690	Boleh Digunakan	Animal cell culture analysis (cells pathways)	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)

21	IMB	Fast Protein Liquid Chromatography	Makmal Genomik & Proteomik	Thirukanthan Chandra Segaran (Pegawai Sains Kanan)	09-668 3675	Boleh Digunakan	Purification of protein samples within molecular weight	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
22	INOS	Inductively Coupled Plasma-Mass Spectrometer (ICPMS)	Makmal ICP-MS, INOS	Joseph Anak Bidai (Pegawai Sains Kanan)	09-668 3368	Digunakan	a) Measurement of rare earth element, trace and heavy metals in any kind of sample. b) Detecting metals and several non-metals at concentrations as low as one part in 10 ¹⁵ (part per quadrillion, ppq) on non-interfered low-background isotopes.	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
23	INOS	120 KV Scanning Eletron Microscope (SEM) (JEOL)	Makmal Operasi SEM, INOS	Mahamad Nasir Bin Abdullah (Pegawai Sains Kanan)	09-668 3546	Digunakan	• SEM is a type of electron microscope that produces images of a sample by scanning it with a focused beam of electrons. The electrons interact with atoms in the biological and material sample, producing various signals that contain information about the sample's surface topography and composition (EDS)	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
24	INOS	Fully Intrergrated Alpha Spectrometry Counting System	Makmal Instrumentasi Radioaktif, INOS	Mohd Zulkamal Bin Radzi (Pegawai Sains Kanan)	09-668 3178	Rosak	• Measurement of alpha wave from environment material.	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
25	INOS	Research Grade Fluorescent Microscope With Digital System LEICA DM IRE2	Makmal Biodiversiti 1, INOS	Shaharul Suhaila Binti Ismail (Pegawai Sains Kanan)	09-668 3266	Jarang Digunakan	Fluorescence microscopy even allows users to determine the distribution of a single molecule species, its amount and its localization inside a cell.	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)

26	INOS	Dual frequency side scan sonar (GEO ACOUSTICS/LC MK II + GEO PRO)	Makmal Oseanografi Fizikal Dan Geologi 1, INOS	Shukri Bin Arsad (Pegawai Sains Kanan)	09-668 3471	Rosak	side scan is a specialized system	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
27	INOS	High Performance Liquid Chromatography System (AGILENT 1100 SERIES)	Makmal Am 2, INOS	Shaharul Suhaila Binti Ismail (Pegawai Sains Kanan)	09-668 3384	Digunakan	High-performance liquid chromatography (HPLC; formerly referred to as high-pressure liquid chromatography), is a technique in analytical chemistry used to separate, identify, and quantify each component in a mixture.	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
28	INOS	PC-Control Total Organic Carbon And Total Nitrogen Analyzer And Solid Module System	Makmal Instrumentasi Kimia, INOS	Mohd Zulkamal Bin Radzi (Pegawai Sains Kanan)	09-668 3178	Digunakan	<ul style="list-style-type: none"> • Measurement of total carbon and nitrogen content in water and marine sediment 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
29	INOS	Gas Chromatography Mass Spectrometer	Makmal Instrumentasi Radioaktif, INOS	Mohd Zulkamal Bin Radzi (Pegawai Sains Kanan)	09-668 3178	Rosak	<ul style="list-style-type: none"> • Measurement of chlorophenols in water and soil, polycyclic aromatic hydrocarbons (PAH), essential oil 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
30	INOS	Hyper Germanium Detector	Makmal Instrumentasi Radioaktif, INOS	Mohd Zulkamal Bin Radzi (Pegawai Sains Kanan)	09-668 3178	Tidak Digunakan	<ul style="list-style-type: none"> • Measurement of gamma wave from environment material. 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)

31	INOS	CTD Rosette Water Sampler	Makmal Oseanografi Fizikal Dan Geologi 2, INOS	Shukri Bin Arsad (Pegawai Sains Kanan)	09-668 3471	Jarang Digunakan	To determine the conductivity, temperature, and depth of the ocean and the sampling bottles close at predefined depths, triggered either manually or by a computer, and the water samples may subsequently be analyzed further for biological and chemical parameters.	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
32	INOS	Skalar Air Segmented Auto Analyzer	Makmal Oseanografi Kimia Dan Pencemaran Marin 2, INOS	Nurzuhrah Binti Hassan (Pegawai Sains Kanan)	09-668 3304	Jarang Digunakan	<ul style="list-style-type: none"> • Measurement of water quality parameter(Si, NH4,NO2 and NO3,P) 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
33	INOS	Current Profiler	Makmal Oseanografi Fizikal Dan Geologi 1, INOS	Shukri Bin Arsad (Pegawai Sains Kanan)	09-668 3471	Jarang Digunakan	(UCTD) is a recently developed system for obtaining deep vertical profile CTD data from a moving ship	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
34	INOS	MODIS Ground Receiving System	Aras 4, Makmal Berpusat (MB)	Azri Bin Muhamad (Penolong Pegawai Sains Kanan)	09-668 3113	Digunakan	<ul style="list-style-type: none"> • Pencerapan imej satelit dari Suomi NPP, Aqua & Terra. • Penerimaan imej satelit 8 hingga 10 imej setiap hari. • Produk utama ialah Sea Surface Temperature, Klorofil, NDVI, Particle Inorganic/Organic Carbon. 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
35	PPSTM	High Performance Liquid Chromatograph (HPLC)	Bilik Instrumentasi 1, Makmal Pemakanan Manusia PPSTM	Fadlina Binti Yusof (Pegawai Sains Kanan)	09-668 4564	Digunakan	<ul style="list-style-type: none"> • Compound identification (Vitamins, Antioxidants, Food additives) 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)

36	PPSTM	Protein Purification System	Bilik Instrumentasi 1, Makmal Pemakanan Manusia PPSTM	Fadlina Binti Yusof (Pegawai Sains Kanan)	09-668 4564	Digunakan	<ul style="list-style-type: none"> • Sample Protein preparation • Fractionate target protein • Chromatographic separation, protein purification & recovery 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC.)
37	PPSTM	Atomic Absorption Spectrometer (AAS)	Bilik Instrumentasi 1, Makmal Pemakanan Manusia PPSTM	Fadlina Binti Yusof (Pegawai Sains Kanan)	09-668 4564	Digunakan	<ul style="list-style-type: none"> • Determination of mineral content in food sample • Detection of heavy metal contamination in food 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC.)
38	PPSTM	Trace Gas Chromatography Ultra FID/ECD	Makmal Pengurusan Penyakit Dan Perosak Agro-Makanan, PPSTM	Mohd Redhuan Bin Mohd Noor (Pegawai Sains Kanan)	09-668 4952	Digunakan	<ul style="list-style-type: none"> • Detection of Eethylene gas produces by fruits in Post Hrvest treatment such as packaging and storage temperature. • Detection of FAME (Fatty Acid Methyl Ester) on poultry study. 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC.)
39	PPSTM	Inductively Couple Plasma-Optical Emission Spectrometer (ICP-OES)	Bilik Instrumentasi, Makmal Sains Tanah PPSTM	Mohd Kamarul Izhar Bin Kamaruddin (Pegawai Sains Kanan)	09-668 4561	Digunakan	<ul style="list-style-type: none"> • Determination of mineral content in sample (food, fertilizer and soil) • Detection of heavy metal contamination in sample (food, fertizer, sediment and soil) 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC.)

40	PPSTM	HR-2 Discovery Hybrid Rheometer	Bilik Instrumentasi 2, Makmal Pemakanan Manusia PPSTM	Suhana Binti Muhamad Hanidun (Pegawai Sains Kanan)	09-668 4458	Digunakan	<ul style="list-style-type: none"> • Characterize the rheological properties (flow and deformation) of materials. • Measurement of both viscosity and viscoelasticity of fluids, semi-solid and solids sample. 	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
41	PPKK	GMDSS Simulator With Instructor & Trainee Unit	Makmal GDMSS, PPKK	Izhar Bin Mohd Mustaat (Pegawai Sains)	09-668 3642	Digunakan	GMDSS simulators accurately imitate actual ship-to-ship communications and ship-to-shore stations using highly realistic simulated terrestrial and satellite communication systems. Trainees can be familiarised with the correct operation of a variety of GMDSS equipment for distress and general communication as the software emulates recognised GMDSS equipment.	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
42	PPKK	Electronics & Instrumentation Equipments & DAS (CBT)	Makmal Elektrik, PPKK	Zulkifly Bin Mohamed Adnan (Pegawai Sains Kanan)	09-668 3658	Boleh Digunakan	Basic and advance alternative current (AC) and Direct Current(DC) application	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)

43	PPKK	Steam Engine Module With Training Boiler	Bengkel Loji Kuasa, PPKK	Mohd Fadhil Bin Md Shukor (Pegawai Sains)	09-668 3652	Boleh Digunakan	- Beroperasi dengan kaedah mampatan wap air untuk memahami proses pengendalian dalam Loji Kuasa secara konvensional	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
44	PPKK	Benchtop X-Ray Diffractometer	Makmal Radiasi, PPKK	Nor Faizah Binti Adam (Pegawai Sains Kanan)	09-668 3365	Boleh Digunakan	can perform qualitative and quantitative analysis of polycrystalline materials (peak calculation, phase identification, Percent (%) crystallinity, Crystallite size and strain, Lattice parameter refinement, Rietveld refinement, Molecular structure)	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
45	PPKK	Kongsberg Full Mission Ship Handling Simulator	Marine Ship Bridge Simulator, PPKK	Mat Nasir bin Mat Zain (Pegawai Laut)	09-668 3641	Boleh Digunakan	A ship simulator is a system that simulates ships and maritime environments for training, research and is part of the basic training of maritime professionals at maritime school like UMT	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
46	PPKK	CNC Milling (5 Axis Ship Model Milling Machine)	Makmal Teknologi Maritim, PPKK	Mohd Fadhil bin Md Shukor (Pegawai Sains)	09-668 3652	Boleh Digunakan	- Beroperasi dengan mengikut rekabentuk yang dibuat oleh pereka cipta projek untuk menghasilkan suatu produk atau model dan lebih cenderung ke atas reka bentuk yang berkaitan dengan bidang maritim bagi tujuan ujikaji dan kajian.	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)

47	PPKK	Automated Marine Engine Test Bed	Loji Kuasa dan Jentera Kapal, PPKK	Mohd Fadhil bin Md Shukor (Pegawai Sains)	09-668 3652	Boleh Digunakan	- Mengukur kekuatan dan fleksibiliti engine dalam penguunaan bahan api (diesel) yang berbeza bagi tujuan kajian dan ujikaji.	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)	
48	PPKK	Electrokinetic Analyzer	Makmal Kejuruteraan Air dan Air Sisa, PPKK	Mohd Kamri Bin Mamat (Pegawai Sains Kanan)	09-668 3412	Jarang Digunakan	Solid surface charge analysis	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)	
49	PPSA	FT Infrared Spectrophotometer Perkin Elmer Spectrum GX	Telah diluluskan (PPSA/LPS/2016/067)						
50	PPSA	TGA & DSC Perkin Elmer Pyris 1	Telah diluluskan (PPSA/LPS/2016/068)						
51	PPSA	HPLC Agilent Tech/AT 1100 Series	Makmal Biokimia, PPSA	Norazlina Binti Abdul Aziz (Pegawai Sains Kanan)	09-668 3224	Jarang Digunakan		Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)	
52	PPSA	Dynamic Rheometer For Liquid Crystal And Emulsion Measurement (Thermo Haake RS 600)	Makmal Kimia Koloid, PPSA	Mohd Yusri Bin Mirang (Pegawai Sains Kanan)	09-668 3616	Boleh digunakan	Measurement of viscosity solid and liquid sample.	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)	
53	PPSMS	Gas Chromatograph Shimadzu GCMS 5050A	Telah diluluskan.						

54	PPSMS	High Performance Ion Chromatography System Dionex DX 600	Telah dilupuskan. PPSMS/LPS/2016/079					
55	PPSMS	Flame And Graphite Furnace Atomic Absorption Spectrometer Varian Spectra 200FS GTA	Makmal Oseanografi 1B, PPSMS	Sainol Aimi Bin Saidin (Pegawai Sains Kanan)	09-668 8540	Boleh digunakan dengan had yang tertentu dan ketepatan yang rendah . Tidak sesuai dijadikan sebagai alat kajian. Alat ini berfungsi tetapi terlalu usang untuk digunakan. Kadangkala mengalami kerosakan secara tiba-tiba	Bagi mengukur unsur logam berat dalam bentuk larutan dengan nilai ralat +/- 0.02ppm	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)

56	PPSMS	High Performance Liquid Chromatography System Agilent 1100 Series	Makmal Instrumentasi dan Bioteknologi, PPSMS	Mardiah Hayati Yahaya(Pegawai Sains Kanan)	09-668 3243	Boleh digunakan dengan had yang tertentu dan ketepatan yang rendah . Tidak sesuai dijadikan sebagai alat kajian. Alat ini berfungsi tetapi terlalu usang untuk digunakan. Kadangkala mengalami kerosakan secara tiba-tiba	Analisis kimia yang digunakan untuk pemisahan, mengenal pasti kompaun dan mengukur setiap komponen dalam campuran laruran atau pelarut dengan kaedah kromatografi larutan	Rujuk / Hubungi Pegawai B'tanggungjawab (PIC)
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