

## Training in Japan and Abroad

No.	Name of Trainee	From	To	Days	Year	JFY	Theme	Training Institute	Type	Training Title/ Contents	Position	Institute	Assignment/ Present	Fund
17	Prof. Dr. Fatimah Md Yusoff	2017/11/10	2017/11/14	5	2017	JFY2017			Invitation		Professor	UPM		JICA
18	Dr. Norio Nagao	2016/10/25	2016/10/29	5	2016	JFY2016			Invitation	To design a reactor		UPM		JICA
19	Dr. Norio Nagao	2017/8/27	2017/9/4	9	2017	JFY2017			Invitation	To discuss the details of the bench-scale and pilot-scale reactors.		UPM		JICA
20	Dr. Norio Nagao	2017/5/27	2017/6/7	12	2017	JFY2017			Invitation			UPM		JICA
21	Prof. Mohd Effendy B. Abd Wahid	2017/11/8	2017/11/12	5	2017	JFY2017			Invitation	To conduct a special lecture at UTokyo.		UMT		JICA
22	Mr. Thirukanthan Cnadra Segaran	2017/11/8	2017/11/12	5	2017	JFY2017			Invitation	To conduct a special lecture at UTokyo.		UMT		JICA
23	Dr. Nobuyuki Kawasaki	2017/1/15	2017/1/21	7	2017	JFY2016			Invitation			UNISEL		JICA
24	Prof. Dato Dr. Mohamed Shariff	2018/7/4	2018/7/8	5	2018	JFY2018			Invitation			UPM		JICA
25	Dr. Emi Fazlina Hashim	2018/9/1	Upto-date					Soka University	Ph.D course	研究題目 2) の分画された土壌抽出物質の微細藻類への効果をテーマとして学位の取得を目指している。	Lecturer	UNISEL		
26	Ms. Norazira Binti Abdu Rahman	2018/3/1	Upto-date					Tokyo University	Research			UMT		SATREPS 枠 の国費留学生
	<b>26</b>			<b>395</b>										

**TECHNICAL COOPERATION  
BY THE GOVERNMENT OF JAPAN  
PROPOSAL**

By the Government of Malaysia to the Government of Japan for the supply of equipment

- Notes-* (1) This form has been devised for the general guidance of co-operating countries in order to facilitate the supply of relevant information and data necessary to afford an adequate appreciation of the nature of the technical assistance required. The careful completion of this proposal form will avoid much reference back and lead to speedier action.
- (2) The requisite number of copies of the Form A4 duly endorsed by the appropriate Foreign Aid Department of the requesting government should be forwarded to the donor government concerned through the appropriate channels.
- (3) The equipment to be supplied by the Government of Japan will become the property of the requesting government upon receipt of the shipping documents through the Japanese Embassy. Since the equipment is supplied on C.I.F. basis, it is requested that the recipient government will meet:
- (a) customs duties, internal taxes and other similar charges, if any, imposed in respect of the equipment, and  
(b) expenses necessary for the transportation, installation, operation and maintenance of the equipment.

**I. Background Information**

Please describe as concisely as possible the general outlines of the project for which the equipment is required, indicating whether the latter is (a) for use by an expert in the performance of his duties (b) for a training scheme of institution or (c) for a research institution. If either (b) or (c) please say whether the equipment is for the establishment of a new institution or the expansion or re-organization of an existing one (e.g. by the provision of a new department, etc.). The name and exact location of the institution, its approximate cost and the authority responsible for it should be stated. Where appropriate details should be given of the availability of any services required for the operation of the equipment. This would include operation by electricity (i.e. type of current, periodicity, voltage and any variations, phases, frequency etc. and if D.C. is the only current available please give full details), water reticulation or steam gas etc. Details of similar equipment already in use should be given.

In Asia, where 90 percent of the world's aquaculture industry is concentrated, the aquaculture wastewater is drained into the river and sea, causing serious damage to the natural fishing ground; and/or natural ecosystems. On the other hand, the wastewater contains nutrients that can be used to grow microalgae. Microalgae are not only potential bioenergy resources, but also the source of high-value substances such as unsaturated fatty acids and antioxidants. If the key nutrients required for microalgae growth can be efficiently recovered from rich aquaculture sludge, and if high-value products can be produced simultaneously, it may be possible to construct a highly economical recycling process.

**Project Purpose:**

Sustainable mass-cultivation technology for high-value tropical microalgae using an innovative nutrient recovery system from aquaculture organic sludge is established.

**Indicators:**

1. Annual algal biomass production of one (1) tonne or more per hectare is achieved.
2. Biomass yield per gigajoule of two (2) times or more than the conventional raceway system is achieved for two (2) indigenous microalgae species.
3. More than one (1) tonne of aquaculture pond sludge is reduced for every ten (10) kilograms algal biomass production (dry weight basis).

**Scope of Work:**

1. To discover high-value microalgae from various coastal and inland water bodies in Peninsular Malaysia.
2. To investigate natural growth-promoting substances for enhancing microalgae productivity.
3. To develop a novel photo-bioreactor for optimum microalgae mass-culture.
4. To develop a process of nutrient recovery from aquaculture organic sludge.

**2. Description of equipment required.**  
Please give a full description of each item and general specifications where possible. The manufacturer and estimated cost of each item if known together with details of the proposed end use of item should be given. Where applicable, give details of any special packing or tropic proofing required and indicate whether handbooks or instruction data supplied in English will suffice. If appropriate, please indicate any required priorities or phasing of deliveries and advise whether adequate facilities exist for maintenance and servicing of the type of equipment requested. (If lengthy, detailed lists should be annexed; it would be convenient to have separate annexures for (a) films, (b) books and (c) other equipment.)


No.	Equipment and instruments	Quantity		
		UPM	UMT	UNISEL
1	Liquid chromatography-mass spectrometry	1		
2	Liquid Fractionation system			1
3	Auto analyzer for inorganic macro nutrients	1		
4	High performance liquid chromatography		1	
5	TOC Analyzer			1
6	Continuous flow centrifuge	1		
7	Portable gas analyzer (CH <sub>4</sub> , CO, CO <sub>2</sub> , O <sub>2</sub> )	1		
8	Fluorescence Multi Plate reader	1	1	
9	Inverted fluorescence microscope imaging system		1	
10	Gas chromatography FID		1	
11	Fluorescence microscope imaging system	1		
12	Ultrapure water equipment		1	1
13	Freeze drier		1	1
14	Multi thermo incubator		1	
15	Large Centrifuge			1
16	Ultra Micro balance	1		
17	Anti Vibration table for Ultra Micro balance	1		
18	Spectroradiometer			
19	Incubator		1	
20	Stereo microscope			
21	Freeze drier (SEM)	1		
22	Multi plate reader			1
23	Inverted microscope			1
24	Ultrasonic homogenizer	1		
25	Deep freezer			1
26	Large Autoclave for photobioreactor	1		
27	Autoclave		1	1
28	Indoor quantum sensor for air and water		1	
29	Multi Spectrophotometer	1		
30	Outdoor Light logging system	1		
31	Indoor Light Measuring system	1		
32	Micro-centrifuge		1	
33	Small Centrifuge	1		
34	Low temperature Dry mill	1		
35	Environmental Soil quality sensor			1
36	Multi Filtration system for 2 inch filters			1
37	Multi Filtration system for 1 & 2 inch filters	1		
38	Environmental water quality sensor		1	
39	Muffle furnace	1		
40	Drying oven		1	1
41	Liquid nitrogen transfer vessel		1	
42	Thermostat reactor	1		
43	Cryobiological storage vessel		1	
44	Electric balance		1	1
45	Indoor experimental small-scale reactors	1		

46	Cooling system (SEM)	1		
47	Drying rack		1	
48	Thermal cycler	1		
49	Gel documentation system	2		
50	Outdoor scaled-up bag reactor unit system	1		
51	Outdoor scaled-up multiple bag reactor system	1		
52	Outdoor large-scale nutrient recycling system	1		
53	Outdoor medium-scale nutrient recycling system	1		
54	Sampling Vehicle	1		
55	Clean bench		1	1
56	Crossflow concentrator		1	
57	Gas burner		1	
58	Niskin Water sampler		1	
59	Peristaltic pump		1	
60	Microplate shaker	2	1	1
61	Plankton net		1	
62	Pulse amplitude modulation	1		
63	Air compressor	1		
64	Coulter counter	1		
65	Manifold	1		
66	Desk type pH meter			1
67	Laptop Computer	1		
68	Portable Hard Disk	1		
69	Video Camera	1		
70	Camera	1		
71	All-in-one Printer	1		
72	Projector	1		
3. Has this equipment request already been directed to any other Agency or country and if so to whom was it addressed and with what result?	None			
4. Has the list of equipment already been discussed with representatives of the supplying country / ies ? If so, please indicate what stage the discussions have reached.	Yes, the list above had been discussed and agreed between Malaysian research team and Japanese research team already.			
5. Furnish full particulars in respect of (a) Consignee; (b) Official to receive documents and enquires; and (c) Clearing agent at port of entry.	(a) and (b) UPM: Prof. Dr. Fatimah Md. Yusoff UMT: Prof. Dr. Mohd Effendy bin Abd. Wahid UNISEL: Prof. Dr. Mohd Kushairi Mohd Rajuddin (c) UPM			

Form A 4.

(2)

<p>6. Where equipment is required for use by an expert Please indicate-</p> <p>(a) The country or agency from which the expert has been requested or obtained.</p> <p>(b) His duties and length of secondment (a reference to the relative Form A.1 will suffice when the expert is being provided by the country to whom the equipment request is addressed).</p> <p>(c) What use is proposed for the equipment when the expert's period of secondment terminates?</p> <p>(d) By what date is the equipment required?</p>	<p>(a) Japan</p> <p>(b) Sampling and analyzing for one (1) week to six (6) months per visit several times a year during five (5) years of project period.</p> <p>(c) Malaysian researchers will continuously use the equipment for the same research purpose.</p> <p>(d) The equipment will be installed accordingly with the progress of research work.</p>
<p>7. Where equipment is required for Training or Research Institutions Please indicate-</p> <p>(a) Nature and standard of training or research to be undertaken</p> <p>(b) Total number of students to be accommodated from within the country or from elsewhere in the Region, the qualifications for admission, the duration of courses, and the annual output of trainees</p> <p>(c) Whether there is already a similar institute(s) in existence in the country. If so, please give details</p> <p>(d) Whether buildings are already available. If not has construction started and when is it expected to be completed?</p> <p>(e) Whether qualified staff to handle the equipment has been recruited or is proposed to be recruited locally. If not is it proposed:- (i) to recruit foreigners under aid programmes? (ii) to train locally recruited personnel abroad in handling equipment? (the reference numbers of any Forms A.1 or A.2 relating to such requests should be quoted)</p> <p>(f) Taking into account the answers to (d) and (e) above, what is the date by which the equipment is required and the date on which training or research work is to commence.</p> <p>(g) Whether any assistance in drawing up the Scheme has been obtained from outside experts? (Any specialist reports or Government surveys (e.g., Educational Committee Reports, etc.), bearing on the request should be provided if possible)</p>	<p>(a) None</p> <p>(b) Total 50 students will join research activities (30 Malaysian students and 20 Japanese students)</p> <p>(c) None</p> <p>(d) Yes</p> <p>(e) Yes</p> <p>(f) The equipment will be installed accordingly with the progress of research work.</p> <p>(g) Yes (Dr. Makie Kokubun, Program Officer, Science and Technology Research Partnership for sustainable development (SATREPS) Program)</p>
<p>8. Correspondence: Name, postal and telegraphic address of official to whom correspondence regarding this proposal should be forwarded</p>	<p>Economic Planning Unit, Prime Minister's Department, International Cooperation Section Level 2, Block B5, Federal Government Administrative Centre, 62250 Putrajaya</p>

Signed   
on behalf of the Government of Malaysia

Date: 15 Aug. 2016

**For use only by Donor Government**

Proposal accepted/rejected/withdrawn \_\_\_\_\_  
on behalf of the Department of \_\_\_\_\_

Date: \_\_\_\_\_

Copy from A4 Form of 15 August 2016

Orange colour cells indicate changes in number after acquisition of A4 Form.

No.	Item	UPM		UMT		UNISEL		Note
No.	Item	Request	Handover Date	Request2	Handover Date2	Request3	Handover Date3	特記事項
1	Liquid chromatography mass spectrometry	1	2017A					
2	Liquid fractionation system					1	2019/9/26	
3	Auto analyzer for inorganic macro nutrients	1	2017A					
4	High performance liquid chromatography			1	2017B			
5	TOC Analyzer					1	2019/9/26	
6	Continuous flow centrifuge	1	2017A					
7	Portable gass analyzer (CH4, CO, CO2,O2)	1	2017A					
8	Fluoresces multi plate reader	1	2017A	1	2017B			
9	Inverted fluorescence microscope imaging system			1	2017B			
10	Gas chromatography FID			1	2017B			
11	Fluorescence microscope imaging system	1	2017A					
12	Ultrapure water equipment			1	2017B	1	2019/9/26	
13	Freeze drier			1	2017B	1	2019/9/26	
14	Multi thermo incubator			2	2017B			
15	Large centrifuge					1	2019/9/26	
16	Ultra Micro balance	1	2017A					
17	Anti vibration table for ultra micro balance	1	2017A					
18	Spectroradiometer			1	2017B			
19	Incubator	2	2020/6/25	3	2017B			
20	Stereo microscope			1	2017B			
21	Freeze drier (SEM)	1	2017A					
22	Multi-plate reader					1	2019/9/26	
23	Inverted microicope					1	2019/9/26	
24	Ultrasonic homogenizer	1	2017A					
25	Deep freezer			1	2017B	1	2019/9/26	
26	Large autoclave for photobioreactor	1	2017A					
27	Autoclave			2	2017B 2018/11/1	1	2019/9/26	
28	Indoor quantum censor for air and water			1	2017B			
29	Multi-spectrophotometer	1	2017A					
30	Outdoor lighting logging system	1	2017A					
31	Indoor light measuring system	1	2017A					
32	Micro centrifuge			1	2017B			
33	Small centrifuge	1	2017A					
34	Low temperature dry mill	1	2017A					
35	Environmental soil quality sensor					1	2019/9/26	
36	Multi filtration system for 2 inch filter			1	2017B	1		
37	Multi filtration system for 1 and 2 inch filter	1	2017A			2	2019/9/26	
38	Enviromental water quality sensor			1	2017B			
39	Muffle furnace	1	2017A					
40	Drying oven			1	2017B	1	2019/9/26	
41	Liquid nitrogen transfer vessel			1	2017B			
42	Thermostat reactor	1	2017A					
43	Cryobiological strage vessel			1	2017B			
44	Electric balance			1	2017B	1	2019/9/26	
45	Indoor experimental small-scale reactor	1	2017A					
46	Cooling system (SEM)	1	2017A					
47	Drying rack			1	2017B			
48	Thermal cyler	1	2017A					
49	Gel documentation system	2	2017A					

No.	Item	UPM		UMT		UNISEL		Note
No.	Item	Request	Handover Date	Request2	Handover Date2	Request3	Handover Date3	特記事項
50	Outdoor scaled-up bag reactor unit system	1	2017A					
51	Outdoor scaled-up multiple bag reactor system	1	2021/10/15					
52	Outdoor large-scale nutrient recycle system	1	2019/9/27					
53	Outdoor medium-scale nutrient recycle system	1	2017A					
54	Sampling vehicle	1	2016/12/7					
55	Clean bench			1	2020/6/25	1	2020/6/25	
56	Crossflow concentrator			1	2020/6/25			
57	Gas burner		2017/12/22	1	2020/6/25			
58	Niskin water sampler			1	2019/11/26			
59	Peristaltic pump	2	2020/6/25	1	2019/11/26			
60	Microplate shaker	1 (2)	To be discussed	1	To be discussed	1	To be discussed	Lending from Soka Univ.
61	Plankton net			2	2020/6/25			
62	Pulse amplitude modulation	1						Lended and returned to Japan
63	Air compressor	1						This was cancelled.
64	Coulter counter	1						Lending and will be returned to Japan later
65	Manifold	1						This was cancelled.
66	Desk type pH meter					1	2020/6/25	
67	Laptop computer	1	2020/6/25					
68	Portable hard disk	1	2020/6/25					
69	Video camera	1	2020/6/25					
70	Camera	1	2020/6/25					
71	All-in-one printer	1	2020/6/25					
72	Projector	1	2020/6/25					
73	Steam distillation (Kjeldahl analysis system)	1	2017A					Added later. Not in the original.
74	Fiber-optic oxygen meter	1	2017A					Added later. Not in the original.
75	Portable carbon dioxide densimeter	1	2017A					Added later. Not in the original.
76	Box Furnace					1	2018//01/04	Added later. Not in the original.
77	Centrifuge for the demo site	1	2021/10/15					Added later. Not in the original.
	<b>TOTAL</b>	<b>47</b>		<b>33</b>		<b>18</b>		<b>98</b>

The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (A4 Form) / A4 供与機材**

The items requested by the A4 Form issued 18 August 2016 as well as those items attached to them.

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*2	Qty	Unit price (JPY) *3	Unit price (RM)*4	Univ.:5	Building	Place	Year	JFY	Certificate Handover	Date (Purchase)
C011	1	Acrylic cover	Custom-made	Custom-made	Malaysia	m & m Pet Shop	Local	1		1,720	UPM	Faculty Agriculture	MPU	2018	JFY2018	2020/6/25	2018/08/30
H001	1	Liquid chromatography-mass spectrometry	Shimadzu	LCMS-2020	Japan		Handover	1	18,954,000		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
J022	1	Colum	Waters	Xbridge BEH C18 colum,130 A, 5pm, 2.1mmx150mm	Malaysia	GAIA	Local	1		3,448	UPM	Faculty Agriculture	MPU	2017	JFY2017	2020/6/25	2017/9/14
J023	1	Colum Protection	Waters	VanGuard cartridge, 130A, 5pm, 2.1mmx5mm	Malaysia	GAIA	Local	1		2,399	UPM	Faculty Agriculture	MPU	2017	JFY2017	2020/6/25	2017/9/14
H201	2	Liquid fractionation system	Custom made	Custom made. 00411702-01	Japan		Handover	1	10,800,000		UNISEL	LaMBO	Main	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H002	3	Auto analyzer for inorganic macro nutrients	BL-TEC	QuAAtro39	Japan		Handover	1	9,504,000		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H300	4	High performance liquid chromatography	Shimadzu	LC-20AB. Prominence DGU-20ASPD-M20A3R - Degassing Unit	Japan		Handover	1	6,080,400		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H205	5	TOC Analyzer	Shimadzu	TOC-L csh. H57415401420 SA	Japan		Handover	1	5,151,600		UNISEL	LaMBO	Main	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H003	6	Continuous flow centrifuge	Beckman	Avanti J-26S XP	Japan		Handover	1	8,015,220		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H012	7	Portable gas analyzer	Horiba	PG-344 P (CH4,CO,CO2,O2). AC 100V to 240V ±10% (maxim 250 V), 160W.	Japan		Handover	1	6,410,556		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H012	7	Portable gas analyzer (Pair: no details)	Horiba	Sampling unit, PS30	Japan		Handover	1			UPM	Faculty Agriculture	MPU				
H072	8	Fluorescence Multi Plate reader	Thermo Fisher Scientific	VarioSkan LUX	Japan	9,072,000	Handover	1	4,536,000		UPM	Faculty Agriculture	MBA	2016	JFY2016	2017A	2016 (Shipping doc)
H301	8	Fluorescence Multi Plate reader	Thermo Fisher Scientific	VarioSkan LUX	Japan		Handover	1	4,536,000		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
J025	8	Computer Desktop 1 (for Fluorescence Multi Plate reader)	HP	ProDesk 400G3 i3-6100 SFF, SN: SGH725TDCZ & 3CQ7330X29	Malaysia	Win-Tek Solution Sdn. Bhd	Local	1		2,777	UPM	Faculty Agriculture	MPU	2017	JFY2017	2020/6/25	2017/10/6
J308	8	Computer Desktop 3 (for Fluorescence Multi Plate reader)	HP	ProDesk 400G3 i3-6100 SFF, SN: SGH725TDCW & 3CQ7330X50	Malaysia	Win-Tek Solution Sdn. Bhd	Local	1		2,830	UMT	Kompleks Makmal	COSMOS Lab	2017	JFY2017	2020/6/25	2017/10/27
	8	マイクロプレートリーダー発光装置 Light for Fluorescence Multi Plate reader	No photo	3期契約清算	Japan		Handover	1	992,520		UPM	IBS	Prof. Natrah			Missing	
H302	9	Inverted fluorescence microscope imaging system	Leica	M205C (DM18). S/N: 5933449	Japan		Handover	1	4,252,824		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H303	10	Gas chromatography FID	Shimadzu	GC-2010 Plus. S/N: C12095403328	Japan		Handover	1	3,369,600		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H004	11	Fluorescence microscope imaging system	Leica	DM2500	Japan		Handover	1	2,658,204		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H216	12	Ultrapure water equipment	Merck	Milli-Q Integral 3. F6JA64227	Japan		Handover	1	2,813,400		UNISEL	LaMBO	Middle	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H304	12	Ultrapure water equipment	Merck	Milli-Q Integral 3	Japan		Handover	1	2,813,400		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)



J203	12	UPS 1. Attached to Mili-Q water	Right Power	Titan Neo P Series, 10KVA, Inputs 110-300V, 15-20 min supply depends on load, SN: 83921711100010	Malaysia	GAIA	Local	1		7,833	UNISEL	LaMBO	Middle	2017	JFY2017	2020/6/25	2017/12/27
H200	13	Freeze drier 1	Labconco	FZ-6. 160627973	Japan		Handover	1	7,781,076		UNISEL	LaMBO	Door 1	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H305	13	Freeze drier 2	Labconco	Free zone 6. S/N: 160627975 E	Japan		Handover	1	7,781,076		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
J204	13	UPS 2. Attached to Freeze drier	Right Power	Titan Neo P Series, 10KVA, Inputs 110-300V, 15-20 min supply depends on load, SN: 83921711100011	Malaysia	GAIA	Local	1		7,833	UNISEL	LaMBO	Door 1	2017	JFY2017	2020/6/25	2017/12/27
H306	14	Multi thermo incubator 1	Eyela	MTI-202B. S/N:11610687	Japan		Handover	1	1,879,200		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H307	14	Multi thermo incubator 2	Eyela	MTI-202B. S/N:11610688	Japan		Handover	1	1,879,200		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H206	15	Large Centrifuge	Beckman	Allegra X-30R. ALZ17D031	Japan		Handover	1	1,212,948		UNISEL	LaMBO	Main	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H041	16	Ultra Micro balance	Mettler	XP6V	Japan		Handover	1	2,134,944		UPM	Faculty Agriculture	Prof. Toda	2016	JFY2016	2017A	2016 (Shipping doc)
H042	17	Anti Vibration table for Ultra Micro balance	Mettler	ST-600	Japan		Handover	1	225,720		UPM	Faculty Agriculture	Prof. Toda	2016	JFY2016	2017A	2016 (Shipping doc)
H308	18	Spectro radiometer	Apogee Instruments	SpectraWiz PS-100	Japan		Handover	1	1,382,400		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H309	19	Incubator 1	TOMY KOGYO CO. LTD	CLE-305. S/N: 51272038	Japan		Handover	1	1,352,592		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H310	19	Incubator 2	TOMY KOGYO CO. LTD	CLE-305. S/N: 51272039	Japan		Handover	1	1,352,592		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H311	19	Incubator 3	TOMY KOGYO CO. LTD	CLE-305. S/N: 51272037	Japan		Handover	1	1,352,592		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
J006	19	Incubator 4	MMM	Incucell 404, standard bule line, capacity 404L, SN: D160570	Malaysia	PLT Scientific Sdn Bhd	Local	1		15,977	UPM	IBS		2019	JFY2018	2020/6/25	2019/2/19
J033	19	Incubator 5	MMM	Friocell 222, confrot blue line, capacity 222L, SN: B060851	Malaysia	PLT Scientific Sdn Bhd	Local	1		17,688	UPM	Port Dickson	I-AQUAS	2019	JFY2018	2020/6/25	2019/2/19
J310	19	UPS 3 attached to the Incubator	Right Power	Titan Neo P Series, 10KVA, Inputs 110-300V, 15-20 min supply depends on load, SN: 1SR7Y3000004	Malaysia	GAIA	Local	1		9,116	UMT	Kompleks Makmal	COSMOS Lab	2018	JFY2018	2020/6/25	2018/2/27
J311	19	UPS 4 attached to the Incubator	Right Power	Titan Neo P Series, 10KVA, Inputs 110-300V, 15-20 min supply depends on load, SN: 1SR7Y3000005	Malaysia	GAIA	Local	1		9,116	UMT	Kompleks Makmal	COSMOS Lab	2018	JFY2018	2020/6/25	2018/2/27
H312	20	Stereo microscope	Leica Microsystem CMS GmbH	DMi8 (M205C). S/N: 401705	Japan		Handover	1	1,420,092		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H044	21	Freeze drier (SEM) Attached to A4 No.46	SAN Technologies	FD6510	Japan		Handover	1	1,296,000		UPM	IBS	Microscopy unit	2016	JFY2016	2017A	2016 (Shipping doc)
H207	22	Multi plate reader	Tecan	INFINITE 200 PRO. 1610003031	Japan		Handover	1	1,296,000		UNISEL	LaMBO	Main	2016	JFY2016	2019/9/26	2016 (Shipping doc)
J201	22	Computer Desktop 2 (attached to the Multi-plate reader)	HP	ProDesk 400G3 i3-6100 SFF, SN: SGH725TDCY & 3CQ7330WMK	Malaysia	Win-Tek Solution Sdn. Bhd	Local	1		2,830	UNISEL	LaMBO	Main	2017	JFY2017	2020/6/25	2017/10/11
H208	23	Inverted microscope	Leica	DMIL LED. 417858	Japan		Handover	1	864,000		UNISEL	LaMBO	Main	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H005	24	Ultrasonic homogenizer	TAITEC	VP-300N	Japan		Handover	1	981,720		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H209	25	Deep freezer	Thermo Fisher Scientific	REVCO Cx F ULT-390-10-V (ULT-390-10). S/N: 300092992	Japan		Handover	1	1,075,140		UNISEL	LaMBO	Main	2016	JFY2016	2019/9/26	2016 (Shipping doc)

H313	25	Deep freezer	Thermo Fisher Scientific	REVCO Cx F ULT-390-10-V (ULT-390-10). S/N: 300092988	Japan		Handover	1	1,075,140		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H006	26	Large Autoclave for photobioreactor	Tomy	SX-700	Japan		Handover	1	946,080		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H214	27	Autoclave 1	Tomy	SX-500. S/N: 88067237	Japan		Handover	1	819,720		UNISEL	LaMBO	Middle	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H314	27	Autoclave 2	TOMY KOGYO CO. LTD	SX-500. S/N: 52155002	Japan		Handover	1	819,720		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H315	27	Autoclave 3	Hirayama	HICLAVETM HV-85. elective volume 85 liters, sterilizing temperature 135 Celsius, dimension 400 x 615 mm, power AC 200 - 240V	Malaysia	Interscience SDN BHD	Local	1		40,000	UMT	Kompleks Makmal	COSMOS Lab	2018	JFY2018	2018/11/01	2018/11/01
H316	28	Indoor quantum sensor for air and water	Biospherical Instrument	QSPL-2100. S/N: 10712	Japan		Handover	1	837,756		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H013	29	Multi Spectrophotometer	HACH	DR1900	Japan		Handover	1	621,000		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H014	30	<b>Outdoor light logging system</b>	<b>Climatec</b>	<b>Consisting of the item H015 to H026</b>	Japan		Handover	1			UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H015	30	Solar Radiation Sensor	Climatec	CHF-SRI2	Japan		Handover	1	669,600		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H016	30	Quantum Sensor	Climatec	CLI-I90SB-WC	Japan		Handover	1	658,800		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H017	30	Data Logger	Climatec	C-CR850-4M	Japan		Handover	1	658,800		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H018	30	12V Charging Regulators	Climatec	C-PS150	Japan		Handover	1	181,980		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H019	30	Mounting Bracket	Climatec	CAP-AM-IIO	Japan		Handover	2	76,540		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H020	30	Enclosure	Climatec	C-ENC12-MM	Japan		Handover	1	179,496		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H021	30	Surge Terminal Array	Climatec	C-PT10	Japan		Handover	1	108,000		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H022	30	3-Wire Half Bridge Terminal Input Module	Climatec	C-3WHB-10K	Japan		Handover	1	24,365		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H023	30	RS232C Cable	Climatec		Japan		Handover	1	5,400		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H024	30	USB Serial Cable	Climatec		Japan		Handover	1	10,800		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H025	30	Manual	Climatec		Japan		Handover	1	8,640		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H026	30	Light Meter	Climatec	LI-250A	Japan		Handover	1	71,820		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H027	31	<b>Indoor light measuring system</b>	<b>Meiwafofis</b>	<b>Consisting of the item H028 to H033</b>	Japan		Handover	1			UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H028	31	Light Quantum Sensor	Meiwafofis	LI-I92SA	Japan		Handover	1	74,844		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H029	31	Light Quantum Sensor	Meiwafofis	LI-190R-BNC-50	Japan		Handover	1	49,140		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H030	31	Radiant Heat Sensor	Meiwafofis	LI-200R-BNC-50	Japan		Handover	1	39,312		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)

H031	31	Light Sensor	Meiwafoxis	LI-1500G	Japan		Handover	1	173,880		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H032	31	Substrate Fixing Stage	Meiwafoxis	2003S	Japan		Handover	1	30,780		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H033	31	Substrate Fixing Stage	Meiwafoxis	2003S	Japan		Handover	1	30,780		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H034	31	Cable (for water)	Meiwafoxis	2222UWB-50	Japan		Handover	1	69,120		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
C300	32	Adapter	Beckman coulter	For 15mL conical	Malaysia		Local	1		286	UMT	Kompleks Makmal	COSMOS Lab	2017	JFY2017	2020/6/25	2017/12/22
H317	32	Micro-centrifuge	Beckman Coulter	Microfuge 20R. S/N: MRZ17D015	Japan		Handover	1	535,248		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
J309	32	Rotor	Beckman Coulter	C0650 Angle Rotor	Malaysia	Straits Scientific SDN BHD	Local	1		14,692	UMT	Kompleks Makmal	COSMOS Lab	2017	JFY2017	2020/6/25	2017/12/24
H007	33	Small Centrifuge	Beckman	Allegra X-30R	Japan		Handover	1	989,712		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H035	34	Low temperature Dry mill	Makino	KGW-G015	Japan		Handover	1	584,820		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H210	35	Environmental Soil quality sensor	Thermo	STAR A3295. OrionTM Star A3295. 52155001	Japan		Handover	1	322,920		UNISEL	LaMBO	Main	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H318	36	Multi filtration system 1	Custom made	1 and 2 inch filters (精算書類 2inch)	Japan		Handover	1	486,000		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H036	37	Multi filtration system 2	Custom made	1 and 2 inch filters (精算書類 2 Inch)	Japan		Handover	1	486,000		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H202	37	Multi filtration system 3	Custom made	1 and 2 inch filters. S250F108C0042-0903	Japan		Handover	1	486,000		UNISEL	LaMBO	Main	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H203	37	Multi filtration system 4	Custom made	1 and 2 inch filters. S250F108C0042-0903	Japan		Handover	1	Missing Invoice		UNISEL	LaMBO	Main	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H319	38	Environmental water quality sensor	Horiba	U5000. U-515-TDS (Total dissolve solid), pH, conductivity, salinity, DO (Dissolve oxygen)	Japan		Handover	1	380,000		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H008	39	Muffle furnace	Shimadzu	MPN-200	Japan		Handover	1	345,600		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H215	40	Drying oven	Yamato	DKM-400. 57900364R	Japan		Handover	1	382,752		UNISEL	LaMBO	Middle	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H320	40	Drying oven	Yamato	DKM-400	Japan		Handover	1	382,752		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H321	41	Liquid nitrogen transfer vessel	Thermo Fisher Scientific	Thermo20	Japan		Handover	1	379,080		UMT	Kompleks Makmal	Used at supplier	2016	JFY2016	2017B	2016 (Shipping doc)
H010	42	Thermostat reactor	HACH	DRB200	Japan		Handover	1	244,080		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H322	43	Cryobiological storage vessel	Thermo Fisher Scientific	Bio-Cane20 Biocane20	Japan		Handover	1	242,028		UMT	Kompleks Makmal	Cold room	2016	JFY2016	2017B	2016 (Shipping doc)
H204	44	Electric balance	Mettler	ME204. B631829594	Japan		Handover	1	159,840		UNISEL	LaMBO	Main	2016	JFY2016	2019/9/26	2016 (Shipping doc)
H323	44	Electric balance	Mettler Toledo	ME204	Japan		Handover	1	159,840		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H009	45	<b>Indoor experimental small-scale reactors</b>	Custom made	SPECIAL ORDER	Japan		Handover	1	8,100,000		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)

H045	46	Cooling system (SEM). Attached to A4 No.21	SAN TECHNOLOGIES	FDC10	Japan		Handover	1	648,000		UPM	IBS	Microscopy unit	2016	JFY2016	2017A	2016 (Shipping doc)
H324	47	Drying rack	AS ONE	Super Drying-Shelf DS-HS (DS-QD)	Japan		Handover	1	200,232		UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2017B	2016 (Shipping doc)
H011	48	Thermal cyler	ASTECC	G02	Japan		Handover	1	500,040		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H037	49	Gel documentation system	Mupid	Mupid - 2Plus	Japan		Handover	1	74,952		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H038	49	Gel documentation system	Mupid	Mupid - 2Plus	Japan		Handover	1	74,952		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H073	50	<b>Outdoor scaled-up bag reactor unit system</b>	Nikkyo Technos	<b>Consisting of the item H074 to H077 屋外大型藻類培養装置(単位プロセス)</b>	Japan		Handover	1			UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H074	50	Coordination tank unit A	Nikkyo Technos	Custom made	Japan		Handover	1	2,850,000		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H075	50	Coordination tank unit B	Nikkyo Technos	Custom made	Japan		Handover	1	2,850,000		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H076	50	Control panel unit	Nikkyo Technos	Custom made	Japan		Handover	1	9,000,000		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H077	50	LED light unit	Nikkyo Technos	Custom made	Japan		Handover	1	300,000		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H055	51	<b>Outdoor scaled-up multiple bag reactor system (needs follow-up)</b>		<b>Consisting of the following: items H055A to H064</b>	Japan		Handover	1			UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22	
H055A	51	Floating plastic bag reactor	Kawasou	Plastic bag. 1 set (81 pcs)	Japan	Kawasou	Handover	81	996,300		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H055B	51	Floating plastic bag reactor	Shouei kagaku	Acrylic box. 1 set (12 pcs)	Japan	Shouei kagaku	Handover	12	480,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H056A	51	PVC Reactor-frame & float system	Ai-R	SUS frame. 1set (14 pcs)	Japan	Ai-R	Handover	14	600,600		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H056B	51	PVC Reactor-frame & float system	Ai-R	Plastic float. 1 set (21 pcs)	Japan	Ai-R	Handover	21	319,200		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H056C	51	PVC Reactor-frame & float system	Ai-R	PVC Plipe. 1 set (9 pcs)	Japan	Ai-R	Handover	9	270,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H056D	51	PVC Reactor-frame & float system	Ai-R	SUS Shaft. 1 set (9 pcs)	Japan	Ai-R	Handover	9	360,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H057A	51	Electronic motor system	Touei Denki	Motor G3K32N. 1 set (3pcs)	Japan	Touei Denki	Handover	3	150,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H057B	51	Electronic motor system	Touei Denki	Motor control pane. 1 set (3 pcs)	Japan	Touei Denki	Handover	3	450,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H058	51	Small scale floating plastic bag reactor	Shouei Kagaku	Small scale acrylic box	Japan	Shouei Kagaku	Handover	1	43,700		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059A	51	Laboratory instruments & consumables	Iwaki	Magnet pump MD55R	Japan	Iwaki	Handover	1	50,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059B	51	Laboratory instruments & consumables	Taiko Kikai Industries	Blower pump DF-40	Japan	Taiko Kikai Industries	Handover	1	50,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059C	51	Laboratory instruments & consumables	Satotech	Dissolved oxygen meter (WA-2017SDJ-DO)	Japan	Satotech	Handover	8	240,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059D	51	Laboratory instruments & consumables	Monotaro	Belts for reactor. 1 set (40 pcs)	Japan	Monotaro	Handover	40	20,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8

H059E	51	Laboratory instruments & consumables	Asone	Tube hose	Japan	Asone	Handover	4	16,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059F	51	Laboratory instruments & consumables	Ozonemart	Ozone water generator OZNBSTR PRO	Japan	Ozonemart	Handover	1	110,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059G	51	Laboratory instruments & consumables	Iwaki	Magnet pump MD70R	Japan	Iwaki	Handover	1	50,000		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059H	51	Laboratory instruments & consumables	Ai-R	Metal bolts for float	Japan	Ai-R	Handover	1	28,200		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059I	51	Multiparameter Digital Water Quality Meter	Xylem	ProDSS Multiparameter Digital Water Quality Meter	Japan	Xylem	Handover	1	834,300		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H060	51	Aeration Unit	ORION	Custom made. Dry-pump, KRF15A-B-02, Serial K19700216 and Serial K1970003.	Japan		Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H061	51	Compressor	ANEST IWATA	Oil free recip. TFP55CF-10, Serial XG2504, 3 Phase 200V, 50Hz, Capacity 155 liter, 1.48 MPa	Japan		Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H062	51	Electrical components	Infini	Custom made	Japan		Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H063	51	Nutrient/water reservoir tank	Infini	Custom made	Japan		Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H064	51	UV lamps	Infini	Custom made	Japan		Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H066	52	Outdoor large-scale nutrient recycling system	Suzuki plastic.	Consisting of the following: items H067 to H072	Japan	Nikkyo Technos, Co., Ltd.	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H067	52	Polypropylene Reactor	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	4,480,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H068	52	Aluminum reinforcement frame	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	490,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H069	52	SUS stirring blade	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	545,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H070	52	Steel frame for tank	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	545,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H071	52	Parts for reactor	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	370,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
J037	52	Air Compressor	Euro Power	Eurox, EAX-7120, 3Hp 100L Belt driven	Malaysia	RLand Technic Resources	Local	1		2,395	UPM	Faculty Agriculture	Demo site	2019	JFY2019	2020/6/25	2019/9/19
J038	52	Air tank	Custom made	Vertical Air Receiver Tank. 400 Liters, 120 Kg, Length1998 mm x Diameter 511 mm	Malaysia	RLand Technic Resources	Local	1		4,335	UPM	Faculty Agriculture	Demo site	2019	JFY2019	2020/6/25	2019/9/19
J039	52	Stabilizer and transformer	Success electronic & transformer	QPS, Model: VST35-2S. Input: 415V (fractionation 12%), neutral (4 wire), Output 200V phase to phase (1.5%) 115V (Phase to neutral). 100A (35KVA). Weather proof outdoor unit.	Malaysia	ZKK SDN BHD	Local	1		19,100	UPM	Faculty Agriculture	Demo site	2019	JFY2019	2020/6/25	2019/12/5
H048	53	Outdoor medium-scale nutrient recycling system		Consisting of the item H049 to H053	Japan		Handover	1			UPM	Faculty Agriculture	Demo site	2016	JFY2016	2017A	2016 (Shipping doc)
H049	53	Hand lift	Monotaro	HP-2000	Japan		Handover	1	50,000		UPM	Faculty Agriculture	Demo site	2016	JFY2016	2017A	2016 (Shipping doc)
H050	53	Concrete mixer	Dream Link	DLM230	Japan		Handover	1	100,000		UPM	Faculty Agriculture	Demo site	2016	JFY2016	2017A	2016 (Shipping doc)
H051	53	Ammonia trap	Suzuki plastic.	Custom made	Japan		Handover	1	0		UPM	Faculty Agriculture	Demo site	2016	JFY2016	2017A	
H051	53	Reactor	Suzuki plastic.	Custom made	Japan		Handover	1	450,000		UPM	Faculty Agriculture	Demo site	2016	JFY2016	2017A	2016 (Shipping doc)

H051	53	Reactor	Suzuki plastic.	Custom made	Japan		Handover	1	450,000		UPM	Faculty Agriculture	Demo site	2016	JFY2016	2017A	
H052	53	Turning rolls	Denyo	DT-3S. 140kg+90kg; 3 phase, 200V; 100W; max load 3 ton	Japan		Handover	1	600,000		UPM	Faculty Agriculture	Demo site	2016	JFY2016	2017A	2016 (Shipping doc)
H053	53	Air compressor	Iwata Anest	Voyager, FX8701. Pressure 0.80MPa, Capacity 38 liters, Power rate 0.75kW (1.5kW), 100V 14A.	Japan		Handover	1	50,000		UPM	Faculty Agriculture	Demo site	2016	JFY2016	2017A	2016 (Shipping doc)
H046	54	Vehicle	Mitsubishi	Triton VGT Auto 4x4 Double Cabin 2.5L Diesel, Silver (U25). Registration No. BPB2237. Engine No. 4D56UAG3346. Chassis No. MMBJYKL30GH066363	Malaysia	Target Orion Star Sdn. Shd.	Handover	1	95,800	UPM	IBS	Parking	2016	JFY2016	2016/12/07	2016/12/07	
J200	55	Clean bench 1	Schoner	4ft Schoner Horizontal Laminar Flow, , Dimesnion: 1200 (W) x850x 1800. Model:SHLF-1200, S/N:LQ1607008M.	Malaysia	LabQuip	Local	1	9,169	UNISEL	LaMBO	Door 1	2017	JFY2017	2020/6/25	2017/2/2	
J306	55	Clean bench 2	Schoner	4ft Schoner Horizontal Laminar Flow, Dimesnion: 1200 (W) x850x 1800. Model:SHLF-1200, S/N:LQ1607009M	Malaysia	LabQuip	Local	1	11,170	UMT	Kompleks Makmal	COSMOS Lab	2017	JFY2017	2020/6/25	2017/2/2	
J301	56	Crossflow concentrator (Laboratory Cross Flow)	Sartorius	Vivaflow 200, 0.2µm membrane, Sartorius, VF20P7	Malaysia	GAIA	Local	1	2,714	UMT	Kompleks Makmal	COSMOS Lab	2017	JFY2017	2020/6/25	2017/1/4	
J312	57	Gas burner	Asone	6-471-01, GB-2001	Malaysia		Local	1	392	UMT	Kompleks Makmal	COSMOS Lab	2017	JFY2016	2020/6/25	2017/12/22	
H325	58	Niskin water sampler	RIGO (RIGOSHA & Co. Ltd)	5026-C	Japan		Handover	1	148,176	UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2019/11/26	2016 (Shipping doc)	
H326	59	Peristaltic pump 1	Cole Palmer (Sartorius)	Masterflex L/S 07516-00 (VFP002, VFA012)	Japan		Handover	1	225,504	UMT	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2019/11/26	2016 (Shipping doc)	
J027	59	Peristaltic pump 2	Eyela	MP-2000 220V, flow range: 10-1,450mL/h x 2; max liquid pressure: 196kPa, SN: 11801845	Malaysia	Fisher Scieticf Sdn Bhd	Local	1	3,339	UPM	Faculty Agriculture	MPU	2018	JFY2018	2020/6/25	2018/4/18	
J028	59	Peristaltic pump 3	Eyela	MP-2000 220V, flow range: 10-1,450mL/h x 2; max liquid pressure: 196kPa, SN: 11801846	Malaysia	Fisher Scieticf Sdn Bhd	Local	1	3,339	UPM	Faculty Agriculture	MPU	2018	JFY2018	2020/6/25	2018/4/18	
J302	61	Plankton net 1	RIGO	RIGO 5546-PA	Malaysia	GAIA	Local	1	7,346	UMT	Kompleks Makmal	COSMOS Lab	2017	JFY2017	2020/6/25	2017/1/24	
J303	61	Plankton net 2	RIGO	RIGO 5546-PA	Malaysia	GAIA	Local	1	7,346	UMT	Kompleks Makmal	COSMOS Lab	2017	JFY2017	2020/6/25	2017/1/24	
H212	66	Desk Type PH meter	TOA DKK	HM-41X. 784795	Japan		Handover	1	145,800	UNISEL	LaMBO	Main	2017	JFY2017	2020/6/25		
C001	67	DVD R/W drive	Archgon	SN: 133910000019	Malaysia		Local	1	222	UPM	IBS	Project office	2016	JFY2016	2020/6/25	2016/12/27	
C002	67	Solid State Drive (SSD)	Samsung	860EVO, 500GB, 6GB/ sec. installed in laptop (J002)	Malaysia	Czone, IOI	Local	1	389	UPM	IBS	Project office	2019	JFY2019	2020/6/25	2019/10/18	
C003	67	Memory (DDR)	Kingston	4GB, 2400MHZ, DDR4 installed in laptop (J002)	Malaysia	Czone, IOI	Local	1	85	UPM	IBS	Project office	2019	JFY2019	2020/6/25	2019/10/18	
C012	67	Mouse	Logitech	M170, Black colour, wireless mouse	Malaysia	Thunder Match Technology	Local	1	28	UPM	IBS	Project office	2020	JFY2019	2020/6/25		
J002	67	Laptop computer	HP	HP Pavilion 14"HD laptop computer.	Malaysia	Data Plus Marketing SDN BHD	Local	1	2,599	UPM	IBS	Project office	2016	JFY2016	2020/6/25	2016/12/25	
C004	68	HDD	Seagate	Seagate backup plus 4TB. SN: NA7PLGDF	Malaysia	Viewnet computer system	Local	1	669	UPM	IBS	Project office	2016	JFY2016	2020/6/25	2016/11/07	
C005	69	Video camera	SONY	HDR-PJ440, SN: 3741769	Malaysia	Photo flash	Local	1	1,660	UPM	IBS	Project office	2016	JFY2016	2020/6/25	2016/12/23	
C006	70	Camera	Canon	EOS M10 (WH) MC: 0922C013{AA} GS1-128	Malaysia	Thuder match technology	Local	1	1,550	UPM	IBS	Project office	2018	JFY2018	2020/6/25	2018/08/08	
C007	70	Lens guard (attached to camera)	Hakuba	49 mm, SMC-PRO. Super multi coated lens guard	Malaysia	Thunder Match Technology	Local	1	180	UPM	IBS	Project office	2020	JFY2019	2020/6/25	2020/01/06	


C008	71	Printer	HP	Deskjet ink 4729 all-in-one printer, Serial No. CN98A8H0NF. FPU No. F5S65-64001	Malaysia	All IT	Local	1		379	UPM	Faculty Agriculture		2020	JFY2019	2020/6/25	2020/01/22
C309	71	Printer	HP	Deskjet ink 4729 all-in-one printer, SN:	Malaysia	Data plus marketing	Local	1		415	UMT	Kompleks Makmal	COSMOS office	2016	JFY2016	2020/6/25	2016/12/25
J001	71	Printer	HP	Color Laser Jet Pro MFP M477fdw	Malaysia	Win-Tek Solution Sdn. Bhd	Local	1		3,270	UPM	IBS	Project office	2016	JFY2016	2022/1/8	2016/9/28
C009	72	Projector	Epson	XGA2800lm, EB-X04, SN: WD5K6600877	Malaysia	All IT	Local	1		1,642	UPM	IBS	Project office	2016	JFY2016	2020/6/25	2016/11/11
C010	72	Laser pointer	Logitech	R800, wireless	Malaysia	All IT	Local	1		285	UPM	IBS	Project office	2016	JFY2016	2020/6/25	2016/12/23
H043	73	Steam distillation (Kjeldahl analysis system)	C. Gerhardt GmbH & Co. Kg	VAPODEST450, GH/12-0550. (1 set = 2 pcs)	Japan		Handover	1	2,653,000		UPM	IBS	MARSLA B/ Wet	2016	JFY2016	2017A	2016 (Shipping doc)
H047	74	Fiber-optic oxygen meter	Firesting	4 ch, USB stick (software inside), USB cable, quick start (in Japanese)	Japan		Handover	1	940,788		UPM	IBS	Project office	2016	JFY2016	2017A	2016 (Shipping doc)
H054	75	Portable carbon dioxide densimeter	TOA DKK	本部精算資料から価格確認	Japan		Handover	1	293,760		UPM	Faculty Agriculture	MPU	2016	JFY2016	2017A	2016 (Shipping doc)
H213	76	Box Furnace	VT FURNACE	Box Furnace 1150°C, VT FURNACE / BF-1150 – 36L.	Malaysia	Techno Science supply	Handover	1		26,474	UNISEL	LaMBO	Main	2018	JFY2017	2018/01/04	2018/01/04
H078	77	Centrifugal Separator	KANSAI CENTRIFUGAL	U-1-HR, Seral: 19-3767, Bowl No.19-3767, Input: 0.75KW×200-240V Single phase. Dimension: 1,310×930×H 1180mm, 217kg.	Japan	KANSAI CENTRIFUGAL	Handover	1	3,839,000		UPM	Faculty Agriculture	Demo site	2020	JFY2019	2021/10/15	2020/1/31
<b>174</b>	<b>175</b>		<b>175</b>	<b>Total</b>					<b>187,005,705</b>	<b>344,837</b>							

Cross exchanged 8,965,758 7,192,527

Grand total in JPY (Appx)	195,971,463	7,537,364	Grand total in RM
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**Handover Equipment (A4 Form) / A4 供与機材**








As of 8 January 2022


Sr.	A4	Univ	Photo	Photo
C011	01	UPM		Acrylic cover (custom made)
H001	01	UPM		
J022	01	UPM		
J023	01	UPM		
H201	02	UNISEL		









Sr.	A4	Univ	Photo	Photo
H002	03	UPM		
H300	04	UMT		
H205	05	UNISEL		
H003	06	UPM		
H012	07	UPM		










Sr.	A4	Univ	Photo	Photo
H012	07	UPM		 <p data-bbox="927 461 1366 483"><b>Broken:</b> Moisture filtration unit. To filter before entering the gas analyzer.</p>
H072	08	UPM		
H301	08	UMT		
J025	08	UPM		
J308	08	UMT		





Sr.	A4	Univ	Photo	Photo
H302	09	UMT		
H303	10	UMT		
H004	11	UPM		
H216	12	UNISEL		
H304	12	UMT		

Sr.	A4	Univ	Photo	Photo
J203	12	UNISEL		Attached to the Mili-Q water 
H200	13	UNISEL		
H305	13	UMT		
J204	13	UNISEL		Attached to the freeze dry 
H306	14	UMT		

Sr.	A4	Univ	Photo	Photo
H307	14	UMT		
H206	15	UNISEL		
H041	16	UPM		
H042	17	UPM		
H308	18	UMT		

Sr.	A4	Univ	Photo	Photo
H309	19	UMT		
H310	19	UMT		
H311	19	UMT		
J006	19	UPM		<p>To be relocated</p>
J033	19	UPM		
J310	19	UMT		

Sr.	A4	Univ	Photo	Photo
J311	19	UMT		
H312	20	UMT		
H044	21	UPM	 <p>Attached to A4 No.46</p>	
H207	22	UNISEL		
J201	22	UNISEL		
H208	23	UNISEL		










Sr.	A4	Univ	Photo	Photo
H005	24	UPM		
H209	25	UNISEL		
H313	25	UMT		
H006	26	UPM		
H214	27	UNISEL		



Sr.	A4	Univ	Photo	Photo
H314	27	UMT		
H315	27	UMT		
H316	28	UMT		
H013	29	UPM		
H014	30	UPM	H014-H026	
H015	30	UPM		








Sr.	A4	Univ	Photo	Photo
H016	30	UPM		
H017	30	UPM		
H026	30	UPM		
H027	31	UPM	Indoor light measuring system	Consisting of the item H028 to H031
H028	31	UPM		
H029	31	UPM		







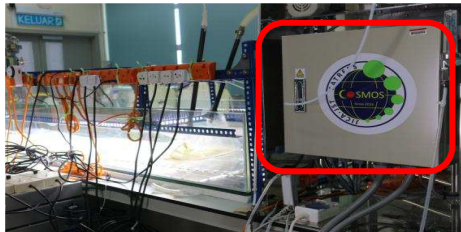
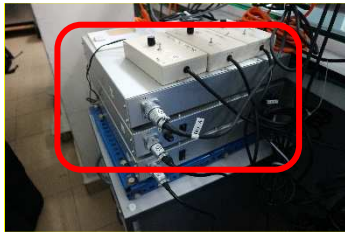


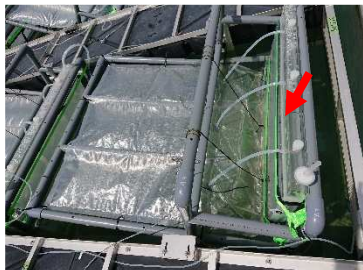

Sr.	A4	Univ	Photo	Photo
H030	31	UPM	 <p>Image copied from Web- missing item</p>	
H031	31	UPM		
C300	32	UMT		
H317	32	UMT		
J309	32	UMT		
H007	33	UPM		

Sr.	A4	Univ	Photo	Photo
H035	34	UPM		
H210	35	UNISEL		
H318	36	UMT		
H036	37	UPM		
H202	37	UNISEL		
H203	37	UNISEL		

Sr.	A4	Univ	Photo	Photo
H319	38	UMT		
H008	39	UPM		
H215	40	UNISEL		
H320	40	UMT		
H321	41	UMT		

Sr.	A4	Univ	Photo	Photo
H010	42	UPM		
H322	43	UMT		
H204	44	UNISEL		
H323	44	UMT		
H009	45	UPM		

Sr.	A4	Univ	Photo	Photo
H045	46	UPM	 <p data-bbox="708 454 852 474">Attached to A4</p> <p data-bbox="427 506 488 526">No.21</p>	
H324	47	UMT		
H011	48	UPM		
H037	49	UPM		
H038	49	UPM		
H073	50	UPM	H073 – H077	



Sr.	A4	Univ	Photo	Photo
H074	50	UPM		
H075	50	UPM		
H076	50	UPM		
H077	50	UPM		
H055	51	UPM	Consisting of the following: items H055A to H064	
H055A	51	UPM	 Plastic bag. 1 set (81 pcs)	
H055B	51	UPM	 Acrylic box. 1 set (12 pcs)	



Sr.	A4	Univ	Photo	Photo
H056A	51	UPM	 <p>SUS frame. 1 set (14 pcs)</p>	
H056B	51	UPM	 <p>Plastic float. 1 set (21 pcs)</p>	
H056C	51	UPM	 <p>PVC Pipe. 1 set (9 pcs)</p>	
H056D	51	UPM	 <p>SUS Shaft. 1 set (9 pcs)</p>	
H057A	51	UPM	 <p>Motor G3K32N. 1 set (3pcs)</p>	












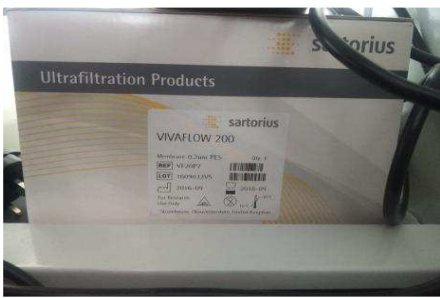

Sr.	A4	Univ	Photo	Photo
H057B	51	UPM	 <p data-bbox="427 459 686 488">Motor control pane. 1 set (3 pcs)</p>	
H058	51	UPM	 <p data-bbox="427 846 614 875">Small scale acrylic box</p>	
H059A	51	UPM	 <p data-bbox="427 1227 606 1256">Magnet pump MD55R</p>	
H059B	51	UPM	 <p data-bbox="427 1518 590 1547">Blower pump DF-40</p>	
H059C	51	UPM	 <p data-bbox="427 1899 774 1928">Dissolved oxygen meter (WA-2017SDJ-DO)</p>	

Sr.	A4	Univ	Photo	Photo
H059D	51	UPM	 <p data-bbox="432 315 671 338">Belts for reactor. 1 set (40 pcs)</p>	
H059E	51	UPM	 <p data-bbox="432 792 512 815">Tube hose</p>	
H059F	51	UPM	 <p data-bbox="432 1133 743 1155">Ozone water generator OZNBSTR PRO</p>	
H059G	51	UPM	 <p data-bbox="432 1464 603 1487">Magnet pump MD70R</p>	
H059H	51	UPM	 <p data-bbox="432 1850 584 1872">Metal bolts for float</p>	

Sr.	A4	Univ	Photo	Photo
H059I	51	UPM		
			ProDSS Multiparameter Digital Water Quality Meter 1 unit	
				
H060	51	UPM		
H061	51	UPM		
H062	51	UPM		
H063	51	UPM		
H064	51	UPM		UV lamps built in Nutrient/water reservoir tank. Connecting pipes attached.










Sr.	A4	Univ	Photo	Photo
H078	77	UPM	 <p data-bbox="427 405 687 439">Centrifugal Separator</p>	
H066	52	UPM	H066 – H071	
H067	52	UPM		
H068	52	UPM		
H069	52	UPM	Blade installed inside of the tank	
H070	52	UPM		
J037	52	UPM		
J038	52	UPM		




Sr.	A4	Univ	Photo	Photo
J039	52	UPM		
H048	53	UPM	H048 – H053	
H049	53	UPM		
H050	53	UPM		
H051	53	UPM		
H051	53	UPM		
H051	53	UPM		




Sr.	A4	Univ	Photo	Photo
H052	53	UPM		
H053	53	UPM		
H046	54	UPM	 Project Vehicle (Mitsubishi Triton) Front view	 Rear view
H046	54	UPM	 Side view (Left)	 Side view (Right)
J200	55	UNISEL		
J306	55	UMT		
J301	56	UMT		

Sr.	A4	Univ	Photo	Photo
J312	57	UMT		
H325	58	UMT		
H326	59	UMT		
J027	59	UPM		
J028	59	UPM		
J302	61	UMT		
J303	61	UMT		



Sr.	A4	Univ	Photo	Photo
H212	66	UNISEL		
C001	67	UPM		
C002	67	UPM		
C012	67	UPM		
J002	67	UPM		UPM, IBS, 4F, Project office, Cabinet
C004	68	UPM		
C005	69	UPM		
C006 C007	70	UPM		

Sr.	A4	Univ	Photo	Photo
C008	71	UPM		
C309	71	UMT		
J001	71	UPM		
C009	72	UPM		
C010	72	UPM		
H043	73	UPM		
H047	74	UPM		IBS, Project office
H054	75	UPM		

Sr.	A4	Univ	Photo	Photo
H213	76	UNISEL		
	77	UPM	 <p data-bbox="427 645 687 680">Centrifugal Separator</p>	

*The end of the document*



24<sup>th</sup> August, 2020

Ref. No. JICA/ST/COSMOS/20-012

Prof. Dr. Fatimah Md. Yusoff,  
Project Manager, Unuiversiti Putra Malaysia

Dear Professor,

**RE : RESEARCH EQUIPMENT GRANTED TO SATREPS COSMOS PROJECT**

With reference to the Official Letter from Economic Planning Unit (Ref. No. : UPE(S)40/240/120) and SOKA University dated 07 October 2016, please be informed that the research equipment stated in Official Request of Form A4 (except the items stipulated below) were duly procured and handed over to the respective collaborating universities, i.e., Universiti Putra Malaysia (UPM), Universiti Malaysia Trengganu (UMT) and Universiti Selangor (UNISEL).

The remaining items are: 1) The Centrifuge and 2) Bio-reactor for UPM, which will be handed over upon installation at the demonstration site of UPM, in which the entire procurement and handover of all required equipment will be completed.

Taking this opportunity, we would like to sincerely thank Prof., as well as the Project's team members and staff who have supported all the logistic arrangements (including custom clearance and transportation), as well as operation and maintenance of the related research equipment and laboratory apparatus procured by JICA.

I trust that all the research equipment granted to COSMOS Project have contributed towards the collaborative research between the collaborating universities in Japan and Malaysia, as well as development of new technology and applications in the bio-resources field, particularly algal biomass in the country.



Your Sincerely,

*M. Takizawa*

TAKIZAWA Masahiko  
Chief Representative  
JICA Malaysia Office

CC :

1. Prof. Mohd Effendy B. Abd Wahid, Team Leader, UMT
2. Dr. Nor Suhaila binti Yaacob, Team Leader/ Director, Institute of Bio-IT/CFGS, UNISEL
3. Prof. Tatsuki Toda, Project Leader, Soka University

Enclosed :

1. Copy of Official Request by the Economic Planning Unit with Form A4
2. Copy of Official Letter by SOKA University
3. Status of Equipment Granted to COSMOS Project



Date: 7th October 2016

Prof. Fatimah Md. Yusoff  
Head, Laboratory of Marine Biotechnology  
Institute of Bioscience  
Universiti Putra Malaysia  
43400 UPM, Serdang, Selangor  
Malaysia

Dear Prof. Fatimah

**Re: Charge-free Equipment for SATREPS-COSMOS Project in the Laboratory of Marine Biotechnology, IBS, UPM**

I am pleased to inform you that we agree to lend equipment listed as below for 5 years at no charge for research use in your laboratory of Marine Biotechnology. I hope these instruments will be useful for the project.

Item	Brand /model	Condition	Unit	Cost JPY/RM
Coulter counter	Beckman / Multisizer 3	Used	1	JPY3,000,000 RM 115,384
Microplate shaker	Greiner/J849050	New	2	JPY160,000/ RM 6,513
Air compressor	Straight/17-6016	Used	1	JPY180,000/ RM 6,923
Pulse amplitude modulation	Walz/Water-PAM	Used	1	JPY3,500,000/RM RM 134,615

Best wishes.

Tatsuki Toda, PhD  
Professor  
Dean of Graduate School of Engineering  
Soka University

Department of Science and Engineering  
for Sustainable Innovation  
Faculty of Science and Engineering  
SOKA University  
1-236, Tangi-cho, Hachioji-shi,  
Tokyo, 192-8577, JAPAN

[www.soka.ac.jp/](http://www.soka.ac.jp/)

## The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

## Procured Equipment by Japanese Universities for the A4 Form/ 大学独自の対応 (as of 2 May 2020)



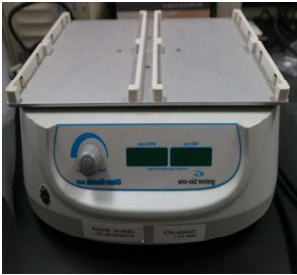

The items requested by the A4 Form issued 18 August 2016 and handled by the Japanese Universities (NOT by JICA).

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*2	Qty	Unit price (JPY) *3	Unit price (RM)*4	Univ.:5	Univ. ID	Building	Place	Year	JFY	Certificate Handover	
H039	60	Microplate shaker 1	Greiner	J849050	Japan	Unknown		1	86,184		UPM		Faculty Agriculture	MPU	2016	JFY2016	To be handed over later	
H211	60	Microplate shaker 2	Greiner	ORBI-Shaker, 4 plates, J849050. ASBT1502004	Japan	Unknown		1	86,184		UNISEL	To be i	LaMBO	Main	2017	JFY2017	To be handed over later	
H327	60	Microplate shaker 3	Greiner-bio one	Orbi Shaker MP (J849050)	Japan	Unknown		1	86,184		UMT	ORBITA L SHAKE	Kompleks Makmal	COSMOS Lab	2016	JFY2016	2019/11/26	
H040	64	Coulter counter	Beckman	Multisizer 3 (Used one)	Japan	Unknown		1	5,853,600		UPM		Faculty Agriculture	MPU	2016	JFY2016	To be returned to Japan	
	62	Pulse amplitude modulation	Unknown	Unknown	Japan	Unknown		1			UPM		Returned to Japan already	N.A.			Returned to Japan	
	63	Air compressor	N.A.	Cancelled procurement and handover	N.A.	N.A.		0			UPM			N.A.			Cancelled	
	65	Manifold	N.A.	Cancelled procurement and handover	N.A.	N.A.		0			UPM			N.A.			Cancelled	
<b>4</b>	<b>7</b>		<b>7</b>	<b>Total</b>					<b>6,112,152</b>	<b>0</b>								
									Cross exchanged	0	235,083							
									Grand total in JPY	6,112,152	235,083	Grand total in RM						

**Procured Equipment**

**Lending Items from Japanese Univs. for the A4 Form/ 大学独自対応**

As of 2 May 2020

Sr.	A4	Univ	Photo	Note
H039	60	UPM		To be handed over by Soka Univ. Detials to be discussed later
H211	60	UNISEL		To be handed over by Soka Univ. Detials to be discussed later
H327	60	UMT		To be handed over by Soka Univ. Detials to be discussed later
N.A.	62	UPM	Pulse amplitude modulation	Returned to Japan
H040	64	UPM		To be returned to Japan
N.A.	63	UPM	Air compressor	Cancelled
N.A.	65	UPM	Manifold	Cancelled



**Status of Equipment Granted to COSMOS Project as of August, 2020**

No.	Item	UPM		UMT		UNISEL		Note
		Qty	Handover Year	Qty	Handover Year	Qty	Handover Year	
1	Liquid Chromatography Mass Spectrometry	1	2017					
2	Liquid Fractionation System					1	2019/09/26	
3	Auto Analyzer for Inorganic Macro Nutrients	1	2017					
4	High Performance Liquid Chromatography			1	2017			
5	TOC Analyzer					1	2019/09/26	
6	Continuous Flow Centrifuge	1	2017					
7	Portable Gass Analyzer (CH4, CO, CO2,O2)	1	2017					
8	Fluoresces Multi Plate Reader	1	2017	1	2017			
9	Inverted Fluorescence Microscope Imaging System			1	2017			
10	Gas Chromatography FID			1	2017			
11	Fluorescence Microscope Imaging System	1	2017					
12	Ultrapure Water Equipment			1	2017	1	2019/09/26	
13	Freeze Drier			1	2017	1	2019/09/26	
14	Multi Thermo Incubator			2	2017			
15	Large Centrifuge					1	2019/09/26	
16	Ultra Micro Balance	1	2017					
17	Anti Vibration Table for Ultra Micro Balance	1	2017					
18	Spectroradiometer			1	2017			
19	Incubator	2	2020/06/25	3	2017			
20	Stereo Microscope			1	2017			
21	Freeze Drier (SEM)	1	2017					
22	Multi-Plate Reader					1	2019/09/26	
23	Inverted Microicope					1	2019/09/26	
24	Ultrasonic Homogenizer	1	2017					
25	Deep Freezer			1	2017	1	2019/09/26	
26	Large Autoclave for Photobioreactor	1	2017					
27	Autoclave			2	2017 2018/11/1	1	2019/09/26	
28	Indoor Quantum Censor for Air and Water			1	2017			
29	Multi-Spectrophotometer	1	2017					
30	Outdoor Lighting Logging System	1	2017					
31	Indoor Light Measuring System	1	2017					
32	Micro Centrifuge			1	2017			
33	Small Centrifuge	1	2017					
34	Low Temperature Dry Mill	1	2017					
35	Environmental Soil Quality Sensor					1	2019/09/26	
36	Multi Filtration System for 2 Inch Filter			1	2017	1		
37	Multi Filtration System for 1 and 2 Inch Filter	1	2017			2	2019/09/26	
38	Enviromental Water Quality Sensor			1	2017			
39	Muffle Furnace	1	2017					
40	Drying Oven			1	2017	1	2019/09/26	
41	Liquid Nitrogen Transfer Vessel			1	2017			
42	Thermostat Reactor	1	2017					
43	Cryobiological Strage Vessel			1	2017			
44	Electric Balance			1	2017	1	2019/09/26	

No.	Item	UPM		UMT		UNISEL		Note
		Qty	Handover Year	Qty	Handover Year	Qty	Handover Year	
45	Indoor Experimental Small-Scale Reactor	1	2017					
46	Cooling System (SEM)	1	2017					
47	Drying Rack			1	2017			
48	Thermal Cycler	1	2017					
49	Gel Documentation System	2	2017					
50	Outdoor Scaled-Up Bag Reactor Unit System	1	2017					
51	Outdoor Scaled-Up Multiple Bag Reactor System	1	Scheduled					
52	Outdoor Large-Sacle Nutrient Recycle System	1	2019/09/27					
53	Outdoor Meidum-Scale Nutrient Recycle System	1	2017					
54	Sampling Vehicle	1	2016/12/07					
55	Clean Bench			1	2020/06/25	1	2020/06/25	
56	Crossflow Concentrator			1	2020/06/25			
57	Gas Burner		2017/12/22	1	2020/06/25			
58	Niskin Water Sampler			1	2019/11/26			
59	Peristaltic Pump	2	2020/06/25	1	2019/11/26			
60	Microplate Shaker	1 (2)		1		1		Lending from Soka Univ.
61	Plankton Net			2	2020/06/25			
62	Pulse Amplitude Modulation	1						Lended and returned to Soka Univ.
63	Air Compressor	1						This was cancelled.
64	Coulter Counter	1						Lending and will be returned to Soka Univ. later
65	Manifold	1						This was cancelled.
66	Desk Type PH Meter					1	2020/06/25	
67	Laptop Computer	1	2020/06/25					
68	Portable Hard Disk	1	2020/06/25					
69	Video Camera	1	2020/06/25					
70	Camera	1	2020/06/25					
71	All-in-One Printer	1	2020/06/25					
72	Projector	1	2020/06/25					
73	Steam Distillation (Kjeldahl Anaysis System)	1	2017					Additional items (Not in the Original Form A4)
74	Fiber-Optic Oxgen Meter	1	2017					Additional items (Not in the Original Form A4)
75	Portable Carbon Dioxide Densimeter	1	2017					Additional items (Not in the Original Form A4)
76	Box Furnace					1	2018//01/04	Additional items (Not in the Original Form A4)
77	Centrifuge for the Demo Site	1	Scheduling					Additional items (Not in the Original Form A4)
	<b>TOTAL</b>	<b>47</b>		<b>33</b>		<b>18</b>		

The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (without A4 Form) / 供与機材(その他)**

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C020	N.A.	Heat block	Thermo Scientific	REACTI-BLOCK Q-1, TPR#TS-18814	Malaysia		Local	1		689	UPM		Faculty Agriculture	MPU	2018	JFY2018	2020/6/25
C021	N.A.	Heat block	Thermo Scientific	REACTI-BLOCK B-1, 9 X 3mL, TPR#TS-18802	Malaysia		Local	1		689	UPM		Faculty Agriculture	MPU	2018	JFY2018	2020/6/25
C022	N.A.	Heat block	Thermo Scientific	REACTI-BLOCK M-1, TPR#TS-18811	Malaysia		Local	1		689	UPM		Faculty Agriculture	MPU	2018	JFY2018	2020/6/25
C023	N.A.	Chiller	Hai Lea	HS28A, Power: 1/10HP, Iced medium: R134a	Malaysia		Local	1		1,480	UPM		Faculty of agriculture	MPU	2018	JFY2018	2020/6/25
C024	N.A.	Chiller	Hai Lea	HS28A, Power: 1/10HP, Iced medium: R134a	Malaysia		Local	1		1,480	UPM		Faculty of agriculture	MPU	2018	JFY2018	2020/6/25
C025	N.A.	Fridge	Sharp	SJ366MSS 360L	Malaysia		Local	1		1,696	UPM		IBS	LHS	2018	JFY2017	2020/6/25
C026	N.A.	High pressure washer	Karcher	K2.360. 20 cubic meter/h, 20-120 bar, 360 L/h, 1,400W	Malaysia	Home Pro	Local	1		549	UPM		Faculty of agriculture	Demo site	2019	JFY2019	2020/6/25
C027	N.A.	Vacuum pump	Nitto	DP0102-X1	Malaysia		Local	1		793	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C028	N.A.	Vertical microtube holder	Scientific Industries	SI-V524	Malaysia	GAIA	Local	1		750	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C029	N.A.	Vertical microtube holder	Scientific Industries	SI-V524	Malaysia	GAIA	Local	1		750	UPM		IBS	MARSLAB	2017	JFY2017	2020/6/25
C030	N.A.	Voetex mixer	Scientific Industries	Genie 2, SI-0266, SN: 2E225236, 2E-225259	Malaysia	GAIA	Local	1		1,450	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C031	N.A.	Voetex mixer	Scientific Industries	Genie 2, SI-0266, SN: 2E225236, 2E-225259	Malaysia	GAIA	Local	1		1,450	UPM		IBS	MARSLAB	2017	JFY2017	2020/6/25
C032	N.A.	Water pump	Eheim	SN: 07023, 07033	Malaysia		Local	1		450	UPM		Faculty of agriculture	MPU	2018	JFY2018	2020/6/25
C033	N.A.	Water pump	Eheim	SN: 07023, 07033	Malaysia		Local	1		450	UPM		Faculty of agriculture	MPU	2018	JFY2018	2020/6/25
C034	N.A.	Micropipette	Nichipet	EX-plus II, 1000µL	Malaysia	GAIA	Local	1		1,134	UPM		Faculty of agriculture	MPU	2017	JFY2016	2020/6/25
C035	N.A.	Air pump	Ehiem	Air pumo 400	Malaysia		Local	1		223	UPM		Faculty of agriculture	MPU	2018	JFY2017	2020/6/25
C037	N.A.	Ladder		Holding, aluminium	Malaysia	Home Pro	Local	1		319	UPM		Faculty of agriculture	Demo site	2019	JFY2019	2020/6/25
C038	N.A.	Cabinet 1	N/A	Beige colour, metal swing door, 3 adjustable shelves. 915W x 457D x 1828H mm	Malaysia	Aimsure Office System	Local	1		347	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C039	N.A.	Cabinet 2	N/A	Beige colour, metal swing door, 3 adjustable shelves. 915W x 457D x 1828H mm	Malaysia	Aimsure Office System	Local	1		347	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C040	N.A.	Mobile pedestal 1		Grey colour. 2D+1F, 410W x 500D x 640H mm	Malaysia	Aimsure Office System	Local	1		198	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C041	N.A.	Mobile pedestal 2		Grey colour. 2D+1F, 410W x 500D x 640H mm	Malaysia	Aimsure Office System	Local	1		198	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C042	N.A.	Mobile pedestal 3		Grey colour. 2D+1F, 410W x 500D x 640H mm	Malaysia	Aimsure Office System	Local	1		198	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C043	N.A.	Mobile pedestal 4		Grey colour. 2D+1F, 410W x 500D x 640H mm	Malaysia	Aimsure Office System	Local	1		198	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C044	N.A.	Mobile pedestal 5		Grey colour. 2D+1F, 410W x 500D x 640H mm	Malaysia	Aimsure Office System	Local	1		198	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C050	N.A.	pH electrode	HORIBA	9625-10D	Malaysia		Local	1		827	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C051	N.A.	pH meter	HORIBA	LAQUATWIN-PH-22B	Malaysia		Local	1		1,151	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C052	N.A.	Distillation system	PLT Scientific	W4L, SN: W021353	Malaysia		Local	1		1,353	UPM		Faculty of agriculture	MBA	2018	JFY2018	2020/6/25
C053	N.A.	Dry cabinet	SAMURAI	GP-150LA	Malaysia	Tarita Multimedia Camera	Local	1		1,699	UPM		Faculty of agriculture	L2	2017	JFY2016	2020/6/25
C054	N.A.	Fridge	Sharp	SJ406MSS 400L	Malaysia		Local	1		1,599	UPM		Faculty of agriculture	MPU?	2017	JFY2017	Missing
C055	N.A.	Almi trunk case	TACT	530 61-2486-38	Malaysia	GAIA	Local	1		816	UPM		Faculty of agriculture	MPU	2017	JFY2016	2020/6/25
C056	N.A.	Almi trunk case	TACT	530 61-2486-38	Malaysia	GAIA	Local	1		816	UPM		Faculty of agriculture	MPU	2017	JFY2016	2020/6/25
C057	N.A.	Scale	Tanita	P-D/EL	Malaysia	Isetan	Local	1		169	UPM		Faculty of agriculture	MPU?	2017	JFY2016	Missing
C058	N.A.	Speakerphone 1	YAMAHA	YVC-300, unified communication speakerphone, S/N: S4P058847	Malaysia		Local	1		1,800	UPM		Faculty of agriculture	L2	2019	JFY2019	2020/6/25
C059	N.A.	Transformer		Step down, 1.5KVA	Malaysia	Melectron Marketing SDN BHD	Local	1		470	UPM		Faculty of agriculture	MPU/ Demo site	2019	JFY2019	2020/6/25
C060	N.A.	Voltage regulator		Slide (dial), 2KVA	Malaysia	Melectron Marketing SDN BHD	Local	1		365	UPM		Faculty of agriculture	MPU/ Demo site	2019	JFY2019	2020/6/25
C061	N.A.	Steel basket with lid	Maruyama stainless	Stainless steel basket with lid, 4-105-03	Malaysia		Local	1		170	UPM		Faculty of agriculture	MPU?	2017	JFY2017	Missing
C062	N.A.	Sterilization box	Asone	Stainless pipette sterilization box	Malaysia		Local	1		551	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C063	N.A.	Webcam 1	Logitech	C922 Pro HD Stream Webcam, S/N: 1902LZ0D3XX9	Malaysia		Local	1		299	UPM		Faculty of agriculture	L2	2019	JFY2019	2020/6/25
C064	N.A.	Acrylic cover	Custom-made	950mmx660mmx800mm	Malaysia		Local	1		1,600	UPM		Faculty of agriculture	MPU	2018	JFY2018	2020/6/25
C065	N.A.	Cool box	IGLOO	Wheelie cool, 38Qt cooler, red & white	Malaysia	Unisersal Fitness & Leisure	Local	1		289	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
C066	N.A.	Micropipette	Nichipet	EX-plus II, 100-1,000µL, Grey, Serial J17703131	Malaysia	GAIA	Local	1		877	UPM		Faculty Agriculture	MPU	2017	JFY2017	2020/6/25
C067	N.A.	Micropipette	Nichipet	EX-plus II, 100-1,000µL, Yellow, Serial J17500071	Malaysia	GAIA	Local	1		877	UPM		Faculty Agriculture	MPU	2017	JFY2017	2020/6/25
C068	N.A.	Micropipette	Nichipet	EX-plus II, 20µL, 00-MPLO2-20, Grey, Serial A78002351	Malaysia	GAIA	Local	1		1,051	UPM		Faculty of agriculture	MPU	2017	JFY2016	2020/6/25

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C069	N.A.	Micropipette	Nichipet	EX-plus II, 20µL, 00-MPLO2-20, Yellow, Serial J17504791	Malaysia	GAIA	Local	1		1,051	UPM		Faculty of agriculture	MPU	2017	JFY2016	2020/6/25
C070	N.A.	Micropipette	Nichipet	EX-plus II, 5000µL, Yellow, Serial J17610881	Malaysia	GAIA	Local	1		1,255	UPM		Faculty of agriculture	MPU	2017	JFY2016	2020/6/25
C071	N.A.	Cabinet 1		Steel, light gray colour, swing door, size (mm): 915W x 457D x 1,830W.	Malaysia	AIMsure	Local	1		399	UPM		Faculty of agriculture	Demo site	2020	JFY2019	2020/6/25
C072	N.A.	Cabinet 2		Steel, light gray colour, swing door, size (mm): 915W x 457D x 1,830W.	Malaysia	AIMsure	Local	1		399	UPM		Faculty of agriculture	Demo site	2020	JFY2019	2020/6/25
C073	N.A.	Cabinet 3		Steel, light gray colour, swing door, size (mm): 915W x 457D x 1,830W.	Malaysia	AIMsure	Local	1		399	UPM		Faculty of agriculture	L1	2020	JFY2019	2020/6/25
C074	N.A.	UV Lamp (Sterilizer)		Submersible for aquarium tank:60W, quartz glass, AC 220V 50Hz, UV Transmission: >90%, UV Band: 254nm, Proof Pressure: 0.7Mpa. Lamp Service Life: 10,000h	Malaysia	HAKIKAT INSAN NIAGA	Local	1		885	UPM		Faculty of agriculture	Demo site	2020	JFY2019	2020/6/25
C075	N.A.	Cool box	IGLOO	Wheelie cool, 38Qt cooler, red & white	Malaysia	Unisersal Fitness& Leisure	Local	1		289	UPM		IBS	Project office	2017	JFY2017	2020/6/25
C076	N.A.	Cool box	IGLOO	Wheelie cool, 38Qt cooler, red & white	Malaysia	Unisersal Fitness& Leisure	Local	1		289	UPM		IBS	Project office	2017	JFY2017	2020/6/25
C077	N.A.	CO2 Regulator multistage		Multi-stage Gas-Arc	Malaysia	RSS Instruments	Local	1		980	UPM		Faculty of agriculture	MPU	2019	JFY2019	2020/6/25
C078	N.A.	Multi-purpose container (400 gallons) 1		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		485	UPM		Faculty of agriculture	Demo site	2019	JFY2019	2021/3/26
C079	N.A.	Multi-purpose container (400 gallons) 2		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		485	UPM		Faculty of agriculture	Demo site	2019	JFY2019	2021/3/26
C080	N.A.	Multi-purpose container (400 gallons) 3		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		485	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C081	N.A.	Multi-purpose container (400 gallons) 4		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		485	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C082	N.A.	Multi-purpose container (400 gallons) 5		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		485	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C083	N.A.	Multi-purpose container (400 gallons) 6		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		485	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C084	N.A.	Multi-purpose container (500 gallons) 1		Black colour, 500 gallons (1,890 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		620	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C085	N.A.	Multi-purpose container (500 gallons) 2		Black colour, 500 gallons (1,890 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		620	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C086	N.A.	Tripod	Red buffalo	TR-888, colour black, aluminum, load capacity 1,250g, height 59.5 - 170cm	Malaysia	Key Colour Photo SDN	Local	1		150	UPM		IBS	Project office	2020	JFY2020	2021/3/26
C087	N.A.	Microphone	Boya	BY-M1; Omni direction; cable 6 m; black colour; LR44 battery	Malaysia	Remax	Local	1		115	UPM		IBS	Project office	2020	JFY2020	2021/3/26
C088	N.A.	Pallet 1		Plastic, blue colour, max load 1.5 tonne	Malaysia	FUKA Industries SDN BHD	Local	1		100	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C089	N.A.	Pallet 2		Plastic, blue colour, max load 1.5 tonne	Malaysia	FUKA Industries SDN BHD	Local	1		100	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C090	N.A.	Pallet 3		Plastic, blue colour, max load 1.5 tonne	Malaysia	FUKA Industries SDN BHD	Local	1		100	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C091	N.A.	Pallet 4		Plastic, blue colour, max load 1.5 tonne	Malaysia	FUKA Industries SDN BHD	Local	1		100	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C092	N.A.	Medium tank	Schutz	Ecobulk plastic tank with metal reinforcement, 1,000 liter: 1.2m x 1m x 1.16m(H) x 60kg. 4029302/ ECOULK MX1000/ 20 09 20/S23/1/030	Malaysia	SAFEHEM SOLUTION SDN BHD	Local	1		550	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C093	N.A.	Trash bin	Leader	Plastic, green colour, with wheel	Malaysia	FS Home Hardware	Local	1		188	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C094	N.A.	Power extension cable		25 meter, outdoor	Malaysia	Ace	Local	1		150	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C095	N.A.	Hammer drill	Black Decker	BDCHD18, 18V Lithium, with a carry case	Malaysia	Ace	Local	1		421	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C096	N.A.	Multi-purpose container (150 gallons) 1		Black colour, 150 gallons (597 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		220	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C097	N.A.	Multi-purpose container (150 gallons) 2		Black colour, 150 gallons (597 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		220	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C098	N.A.	Multi-purpose container (150 gallons) 3		Black colour, 150 gallons (597 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		220	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C099	N.A.	Multi-purpose container (150 gallons) 4		Black colour, 150 gallons (597 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1		220	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26
C100	N.A.	Solenoid valve	Sanlixin	Solenoid valve, digital timer. SLP1DF02N1D13 220V, 50Hz, Pressure 0.5-16kgf/cm, Pipe: 1/2" Orifice	Malaysia	ZA Edumed resources	Local	1		550	UPM		Faculty of agriculture	Demo site	2021	JFY2020	2021/3/26
C101	N.A.	Conical flask 1	Nice	1000ml	Malaysia	GAIA	Local	1		22	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C102	N.A.	Conical flask 2	Nice	1000ml	Malaysia	GAIA	Local	1		22	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C103	N.A.	Conical flask 3	Nice	1000ml	Malaysia	GAIA	Local	1		22	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C104	N.A.	Conical flask 4	Nice	1000ml	Malaysia	GAIA	Local	1		22	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C105	N.A.	Conical flask 1	Nice	3000ml	Malaysia	GAIA	Local	1		67	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C106	N.A.	Conical flask 2	Nice	3000ml	Malaysia	GAIA	Local	1		67	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C107	N.A.	Conical flask 3	Nice	3000ml	Malaysia	GAIA	Local	1		67	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C108	N.A.	Conical flask 4	Nice	3000ml	Malaysia	GAIA	Local	1		67	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C109	N.A.	Conical flask 1	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C110	N.A.	Conical flask 2	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C111	N.A.	Conical flask 3	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C112	N.A.	Conical flask 4	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C113	N.A.	Conical flask 5	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C114	N.A.	Conical flask 6	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C115	N.A.	Plastic chair 1		Plastic, black colour	Malaysia	HAPPY HOME HOUSEHOLD SDN. BHD.	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C116	N.A.	Plastic chair 2		Plastic, black colour	Malaysia	HAPPY HOME HOUSEHOLD SDN. BHD.	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C117	N.A.	Plastic chair 3		Plastic, black colour	Malaysia	HAPPY HOME HOUSEHOLD SDN. BHD.	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C118	N.A.	Plastic chair 4		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C119	N.A.	Plastic chair 5		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C120	N.A.	Plastic chair 6		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C121	N.A.	Plastic chair 7		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C122	N.A.	Plastic chair 8		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C123	N.A.	Plastic chair 9		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C124	N.A.	Plastic chair 10		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C125	N.A.	Holding table 1			Malaysia		Local	1		99	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C126	N.A.	Holding table 2			Malaysia		Local	1		99	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C127	N.A.	Cabinet 4		Swing Door with Lock, Grey. Size 915(W) x 457(D) x 1828(H)MM. Model FH1	Malaysia	ZKK SDN BHD	Local	1		520	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C128	N.A.	Cabinet 5		Swing Door with Lock, Grey. Size 915(W) x 457(D) x 1828(H)MM. Model FH1	Malaysia	ZKK SDN BHD	Local	1		520	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C129	N.A.	Cabinet 6		Swing Door with Lock, Grey. Size 915(W) x 457(D) x 1828(H)MM. Model FH1	Malaysia	ZKK SDN BHD	Local	1		520	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C130	N.A.	Oxygen Flowmeter 1		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C131	N.A.	Oxygen Flowmeter 2		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C132	N.A.	Oxygen Flowmeter 3		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C133	N.A.	Oxygen Flowmeter 4		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C134	N.A.	Oxygen Flowmeter 5		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C135	N.A.	Oxygen Flowmeter 6		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C136	N.A.	Oxygen Flowmeter 7		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C137	N.A.	Oxygen Flowmeter 8		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C138	N.A.	Oxygen Flowmeter 9		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C139	N.A.	Flow Meter 1		Model: K24. 10-120L/Min LCD Digital Diesel Oil Fuel Turbine. Length: 103MM. Flow range: 10-120L / min	Malaysia	ZKK SDN BHD	Local	1		196	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C140	N.A.	Flow Meter 2		Model: K24. 10-120L/Min LCD Digital Diesel Oil Fuel Turbine. Length: 103MM. Flow range: 10-120L / min	Malaysia	ZKK SDN BHD	Local	1		196	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C141	N.A.	Flow Meter 3		Model: K24. 10-120L/Min LCD Digital Diesel Oil Fuel Turbine. Length: 103MM. Flow range: 10-120L / min	Malaysia	ZKK SDN BHD	Local	1		196	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C142	N.A.	Flow Meter 4		Model: K24. 10-120L/Min LCD Digital Diesel Oil Fuel Turbine. Length: 103MM. Flow range: 10-120L / min	Malaysia	ZKK SDN BHD	Local	1		196	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C143	N.A.	Container		White Tank DAM 200 MX	Malaysia	ZKK SDN BHD	Local	1		450	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C144	N.A.	Pallet 5		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C145	N.A.	Pallet 6		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C146	N.A.	Pallet 7		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C147	N.A.	Pallet 8		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C148	N.A.	Pallet 9		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C149	N.A.	Pallet 10		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C150	N.A.	IBC Tank 01		IBC tank, 1000 Liter (with Aluminium Cage) , size: 1200mm (L) x 1000mm (W) x1155mm (H)	Malaysia	ZA Edumed	Local	1		660	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C151	N.A.	IBC Tank 02		IBC tank, 1000 Liter (with Aluminium Cage) , size: 1200mm (L) x 1000mm (W) x1155mm (H)	Malaysia	ZA Edumed	Local	1		660	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C152	N.A.	IBC Tank 03		IBC tank, 1000 Liter (with Aluminium Cage) , size: 1200mm (L) x 1000mm (W) x1155mm (H)	Malaysia	ZA Edumed	Local	1		660	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C153	N.A.	IBC Tank 04		IBC tank, 1000 Liter (with Aluminium Cage) , size: 1200mm (L) x 1000mm (W) x1155mm (H)	Malaysia	ZA Edumed	Local	1		660	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C154	N.A.	Chair armrest 01		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C155	N.A.	Chair armrest 02		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C156	N.A.	Chair armrest 03		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C157	N.A.	Chair armrest 04		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15



PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C158	N.A.	Chair armrest 05		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C159	N.A.	Chair armrest 06		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C160	N.A.	Chair armrest 07		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C161	N.A.	Chair armrest 08		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C162	N.A.	Chair armrest 09		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C163	N.A.	Chair armrest 10		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C164	N.A.	Table 01		Steel 1,200 x 600mm	Malaysia	ZKK SDN BHD	Local	1		490	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C165	N.A.	Table 02		Steel 1,200 x 600mm	Malaysia	ZKK SDN BHD	Local	1		490	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
J003	N.A.	Generator	YAMAHA	EF3000ISE, Inverter silent generator, S/N:2510569.DC12V12A, AC 2.8KVA, 230V, single phase, 50HZ, Gasoline.	Malaysia	My Power Tools	Local	1		8,800	UPM		Faculty Agriculture	Demo site	2017	JFY2016	2022/1/8
J004	N.A.	Safety box	Sterling	Fire resistant home safe (WW300). Dimension 0.375M (W)x 0.39 (D) x 0.435(H). S/N. 120200.	Malaysia	KS office supplies Sdn Bhd	Local	1		848	UPM		IBS	Project office	2017	JFY2017	2022/1/8
J005	N.A.	UV lamp	Spectroline	ENF-280C/FBE, SN: 2126206	Malaysia	Fisher Scientific Sdn Bhd	Local	1		2,600	UPM		IBS	Project office	2019	JFY2018	2020/6/25
J007	N.A.	Evaporator	Thermo Pierce	REACTI-VAP™ III Evaporator, 27-port, TPR#TS-18826, SN: 0003170700024	Malaysia	Fisher Scientific Sdn Bhd	Local	1		7,208	UPM		Faculty Agriculture	MPU	2018	JFY2018	2020/6/25
J024	N.A.	Data Logger	As One	GL840-M, SN: GL840-M C70116139	Malaysia	GAIA	Local	1		7,399	UPM		Faculty Agriculture	MPU	2017	JFY2017	2020/6/25
J026	N.A.	UPS 5	Right Power	True Online UPS, Titan Vista Series 9+2KS, 10KW load 6-hour backup. 12V 150AH, Battery cabinet 2 tier, SN: 83221710102657	Malaysia	GAIA	Local	1		11,522	UPM		Faculty Agriculture	MPU	2018	JFY2018	2020/6/25
J029	N.A.	Heating module	Thermo Pierce	REACTI-THERM™ III, Dry block sample incubation system. Heating module (triple block). TPR#TS-18824, SN: 0024180100001	Malaysia	Fisher Scientific Sdn Bhd	Local	1		10,388	UPM		Faculty Agriculture	Molecular	2018	JFY2018	2020/6/25
J032	N.A.	Photosynthetically Active Radiation (PAR) sensor	Biospherical Instruments	BIP-QSL2101 QSL-2101 Digital Output Laboratory Scalar PAR Sensor. SN: 10743	Malaysia	GAIA	Local	1		14,400	UPM		Faculty Agriculture	MPU	2018	JFY2018	2020/6/25
J033	N.A.	Multi-pipet 2	Gilson	PipetmanL FA10013. Multi 8- channel, 0.5-10µL.	Malaysia	GAIA	Local	1		4,971	UPM		Faculty of agriculture	MPU	2017	JFY2017	2020/6/25
J034	N.A.	pH/Orp/Ion portable sensor	Horiba	Laquaact PH130, SN: D08K0007.water proof PH/ ORP ION portable handheld data meter	Malaysia	GAIA	Local	1		2,850	UPM		Faculty Agriculture	MPU	2019	JFY2018	2020/6/25
J035	N.A.	Ammonia combination ion electrode	Horiba	Ammonia combination ion electrode. 5002S-10C, 5B9A0004	Malaysia	GAIA	Local	1		3,860	UPM		Faculty Agriculture	MPU	2019	JFY2018	2020/6/25
J036	N.A.	Glassware for distillation reactor	Kyoritsu	Chemical-check lab, Corp, WA-CN-D	Malaysia	GAIA	Local	1		2,080	UPM		Faculty Agriculture	Syukri's office	2019	JFY2019	2020/6/25
J040	N.A.	Submersible pump (for seawater)		Model HQP 330. Discharge Bore 40 - 80 mm, Output 1.50 KW, three phase 50 Hz, Max liter per min: 800 L/min. Max water head 17m.	Malaysia	HAKIKAT INSAN NIAGA	Local	1		3,250	UPM		Faculty Agriculture	Demo site	2020	JFY2019	2020/6/25
J041	N.A.	Acid chamber	Custom-made	Mild steel, powder coating; dimension: 1.5m x 1.5m x 1.8m(H); door and pad lock; hole: ventilation holes; leaking proof 20cm from the floor	Malaysia	ZA EDUMED RESOURCES	Local	1		9,400	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
J042	N.A.	Metal framework (de-watering system)	Custom-made	Mild steel, anti rust& heavy duty paint; size: 2m(H) x 2m(W) x 3m(L); loading capacity:1.5 tones for each side; stainless chain with mild steel hook	Malaysia	ZA EDUMED RESOURCES	Local	1		15,900	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26
J043	N.A.	Concrete mixer	Hisaki	Capacity mixed liter 75, engine Robin EY-20D, air-cooled gasoline, max output 5.5 hp, recoil start, weight 70kg, LxWxH: 1.4x0.65x1.15m	Malaysia	HAKIKAT INSAN NIAGA	Local	1		2,160	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26
J044	N.A.	Submersible pump (for water)	Tsunami pump	HQP-330. 240V (12A), 330W (12HP), Water head 17 meter, Output 16 Cubic-meter/ hour, Outlet diameter 3 inch	Malaysia	Bumi Intelligent Resources	Local	1		2,750	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26
J045	N.A.	Submersible pump (for sewage 1)	EVERGUSH	HQP-330. 240V (12A), 2,880W (1 HP), Water head 17 meter, Output 16 Cubic-meter/ hour, Outlet diameter 3 inch	Malaysia	ZA EDUMED	Local	1		2,240	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26
J046	N.A.	Submersible pump (for sewage 2)	EVERGUSH	HQP-330. 240V (12A), 2,880W (1 HP), Water head 17 meter, Output 16 Cubic-meter/ hour, Outlet diameter 3 inch	Malaysia	ZA EDUMED	Local	1		2,240	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26
J047	N.A.	Diaphragm Pump	Shanghai Jofee Pump Co., Ltd.	Model: MK25PP. Suction and discharge 1 inch, Max particle diameter 4mm, Air inlet 1/2 Inch; Max flow 157 l/min; Max air inlet pressure 8.4, Weight 9kg.	Malaysia	ZKK SDN BHD	Local	1		3,500	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22
J048	N.A.	UPS 6	Right Power	Titan Pro 10KS, Single phase, 10,000 VA / 9000 W, Input 208/220/230/240VAC, Output 208/220/230/240VAC, BATTERY TYPE: 12V / 9AH, DIMENSION D x W x H (mm): 442 x 190 x 688 S/N 8922107100059	Malaysia	GAIA	Local	1		8,975	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22
J049	N.A.	UPS 7	Right Power	Titan Pro 10KS, Single phase, 10,000 VA / 9000 W, Input 208/220/230/240VAC, Output 208/220/230/240VAC, BATTERY TYPE: 12V / 9AH, DIMENSION D x W x H (mm): 442 x 190 x 688 S/N 8922107100061	Malaysia	GAIA	Local	1		8,975	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22
J050	N.A.	Hand lift -Hand Pallet Truck	Geolift	Standard Hand Pallet Truck - Model: AC25-N. Capacity: 2500 kg.Truck Width: 520/685mm Fork Length: 1150/1220mm Fork Width: 160mm Min. Fork Height: 85mm Max Fork Height: 200mm Wheel Type: PU Standards: Conforms to EN	Malaysia	ZKK SDN BHD	Local	1		1,875	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22
J051	N.A.	Hand lift - Manual Hydraulic Stacker	Geolift	Manual Hydraulic Stacker Model: MS2016 (Germany Hydraulic Pump System) Capacity: 2000 kg. Min. Fork Height: 85mm Max Fork Height: 1600mm Mast Height: 2120mm Size of Fork: 160 x 60mm Length of Fork: 1150mm. Fork	Malaysia	ZKK SDN BHD	Local	1		4,000	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22
J052	N.A.	Peristaltic Pump 1	Verderflex	DURA 10, Model: D10. Flow rate: 129 l/h max, Hose ID: 10mm, Pressure: 6 bar max, Power: 0.55 kW, Serial No.148693A, YR.2021	Malaysia	MIKA TECH RESOURCES	Local	1		13,526	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
J053	N.A.	Peristaltic Pump 2	Verderflex	DURA 10, Model: D10. Flow rate: 129 l/h max, Hose ID: 10mm, Pressure: 6 bar max, Power: 0.55 kW, Serial No.148693B, YR.2021	Malaysia	MIKA TECH RESOURCES	Local	1		13,526	UPM		Faculty Agriculture	Demo site	2022	JFY2021	2022/1/8
J054	N.A.	Distill water system	Favorit	W4L. Output 4 L/hr, water supply 1L /min (pressure 3 p.s.i.), pH 5.0 to 6.5, Conductivity 3.0 to 4.0 µs/cm, Temp 35 to 50 °C, Pyrogen free, Power 220/240V, 50/60 Hz single, 13A fused, Size 50 x 15 x45 cm	Malaysia	GAIA	Local	1		1,550	UPM		Faculty Agriculture	MPU	2021	JFY2021	2022/1/8
J055	N.A.	TV	Sony	Google TV, KD 65X85J. Screen 65". Weight: 32 kg, HDCP2.3(for HDMI™ 1/2/3/4). USB ports 2: FAT16/FAT32/exFAT/NTFS.	Malaysia	Harvey Norman	Local	1		5,412	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
J056	N.A.	Lap-top PC 1	ASUS	Intel Core i5-1135G7, 8MB, 2.4GHz SSD 512GB NVME, 8GB DDR4, 14 inch FHD IPS display	Malaysia	All It	Local	1		3,598	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
J057	N.A.	Lap-top PC 2	ASUS	Intel Core i5-1135G7, 8MB, 2.4GHz SSD 512GB NVME, 8GB DDR4, 14 inch FHD IPS display	Malaysia	All It	Local	1		3,598	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
J058	N.A.	Chest Freezer		Top Open. 420L, 74kgs, Size: 1325 (W) x 705 (D) x 865 (H) mm. Temp: -18 to -26 Deg Cel, c/w Lock & key, Mechanical Thermostat. Serial No.3211255272	Malaysia	AS SCIENTIFIC SUPPLIES	Local	1		1,890	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
J059	N.A.	Mobile TV Stand	ISRAK	Model: TS190-BLK, SPCC steel plate, aluminium alloy, black colour, loading capacity: 70kg, tray loading capacity: 4.5kg,TV Size: 50" - 80", Adjustable Height: 950 - 1600mm	Malaysia	Bumi Intelligent Resources	Local	1		1,980	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8










PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
J060	N.A.	Blower 1	Greenco	2RB410-7AA11 Ring Blower 800w, 2416L/min, 160mbar	Malaysia	ZKK SDN BHD	Local	1		2,450	UPM		Faculty Agriculture	Demo site	2022	JFY2021	2022/3/15
J061	N.A.	Blower 2	Greenco	2RB410-7AA11 Ring Blower 800w, 2416L/min, 160mbar	Malaysia	ZKK SDN BHD	Local	1		2,450	UPM		Faculty Agriculture	Demo site	2022	JFY2021	2022/3/15
		174		<b>Total</b>					0	<b>249,376</b>							

**Handover Equipment (without A4 Form) / (供与機材その他)**









As of 24 February 2022

Sr.	A4	Univ	Photo	Photo
C020	N.A.	UPM		
C021	N.A.	UPM		
C022	N.A.	UPM		
C023	N.A.	UPM		Attached to H009 Indoor experimental small-scale reactors
C024	N.A.	UPM		Attached to H009 Indoor experimental small-scale reactors
C025	N.A.	UPM		
C026	N.A.	UPM		For cleaning the demo site
C027	N.A.	UPM		














Sr.	A4	Univ	Photo	Photo
C028	N.A.	UPM		
C029	N.A.	UPM		
C030	N.A.	UPM		
C031	N.A.	UPM		
C032	N.A.	UPM		Attached to H073 Outdoor scaled-up bag reactor unit system
C033	N.A.	UPM		Attached to H073 Outdoor scaled-up bag reactor unit system
C034	N.A.	UPM		
C035	N.A.	UPM		
C037	N.A.	UPM		











Sr.	A4	Univ	Photo	Photo
C038	N.A.	UPM		
C039	N.A.	UPM		
C040	N.A.	UPM		
C041	N.A.	UPM		
C042	N.A.	UPM		
C043	N.A.	UPM		
C044	N.A.	UPM		

Sr.	A4	Univ	Photo	Photo
C050	N.A.	UPM		Model 9681S-10D (2units) Model 9680-10D (1 unit) Missing (Haribo pH electrode 9625-10D)
C051	N.A.	UPM		Haribo pH meter LAQUATWIN-PH-22B
C052	N.A.	UPM		
C053	N.A.	UPM		
C055	N.A.	UPM		
C056	N.A.	UPM		
C058	N.A.	UPM		

Sr.	A4	Univ	Photo	Photo
C059	N.A.	UPM		
C060	N.A.	UPM		
C062	N.A.	UPM		
C063	N.A.	UPM		
C064	N.A.	UPM		
C065	N.A.	UPM		
C066	N.A.	UPM		










Sr.	A4	Univ	Photo	Photo
C067	N.A.	UPM		
C068	N.A.	UPM		
C069	N.A.	UPM		
C070	N.A.	UPM		
C071	N.A.	UPM		
C072	N.A.	UPM		
C073	N.A.	UPM		
C074	N.A.	UPM		
C075	N.A.	UPM		

Sr.	A4	Univ	Photo	Photo
C076	N.A.	UPM		
C077	N.A.	UPM		
C078	N.A.	UPM		At the demo site (400 gallon) 1,514 Liter
C079	N.A.	UPM		At the demo site (400 gallon) 1,514 Liter
C080	N.A.	UPM		At the demo site (400 gallon) 1,514 Liter
C081	N.A.	UPM		At the demo site (400 gallon) 1,514 Liter
C082	N.A.	UPM		At the demo site (400 gallon) 1,514 Liter
C083	N.A.	UPM		At the demo site (400 gallon) 1,514 Liter
C084	N.A.	UPM		At the demo site (500 gallon) 1,892 Liter
C085	N.A.	UPM		At the demo site (500 gallon) 1,892 Liter
C086	N.A.	UPM		









Sr.	A4	Univ	Photo	Photo
C087	N.A.	UPM		
C088	N.A.	UPM		
C089	N.A.	UPM		
C090	N.A.	UPM		
C091	N.A.	UPM		
C092	N.A.	UPM		
C093	N.A.	UPM		
C094	N.A.	UPM		

Sr.	A4	Univ	Photo	Photo
C095	N.A.	UPM		
C096	N.A.	UPM	Container (150 gallon) 	
C097	N.A.	UPM	Container (150 gallon) 	
C098	N.A.	UPM	Container (150 gallon) 	
C099	N.A.	UPM	Container (150 gallon) 	
C100	N.A.	UPM		Solenoid valve

Sr.	A4	Univ	Photo	Photo
C101	N.A.	UPM	 <p>1</p>	
C102	N.A.	UPM	 <p>2</p>	
C103	N.A.	UPM	 <p>3</p>	
C104	N.A.	UPM	 <p>4</p>	
C105	N.A.	UPM	 <p>1</p>	
C106	N.A.	UPM	 <p>2</p>	

Sr.	A4	Univ	Photo	Photo
C107	N.A.	UPM		
C108	N.A.	UPM		
C109	N.A.	UPM		
C110	N.A.	UPM		
C111	N.A.	UPM		
C112	N.A.	UPM		
C113	N.A.	UPM		










Sr.	A4	Univ	Photo	Photo
C114	N.A.	UPM	 6	
C115	N.A.	UPM	 1	
C116	N.A.	UPM	 2	
C117	N.A.	UPM	 3	
C118	N.A.	UPM	 4	
C119	N.A.	UPM	 5	
C120	N.A.	UPM	 6	
C121	N.A.	UPM	 7	
C122	N.A.	UPM	 8	
C123	N.A.	UPM	 9	
C124	N.A.	UPM	 10	

Sr.	A4	Univ	Photo	Photo
C125	N.A.	UPM	 1	
C126	N.A.	UPM	 2	
C127	N.A.	UPM	 Cabinet 4	
C128	N.A.	UPM	 Cabinet 5	
C129	N.A.	UPM	 Cabinet 6	
C130	N.A.	UPM	 Oxygen Flowmeter 1	
C131	N.A.	UPM	 Oxygen Flowmeter 2	
C132	N.A.	UPM	 Oxygen Flowmeter 3	
C133	N.A.	UPM	 Oxygen Flowmeter 4	
C134	N.A.	UPM	 Oxygen Flowmeter 5	
C135	N.A.	UPM	 Oxygen Flowmeter 6	







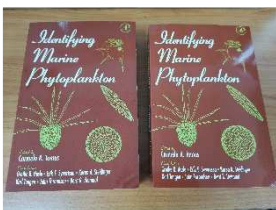


Sr.	A4	Univ	Photo	Photo
C136	N.A.	UPM	 Oxygen Flowmeter 7	
C137	N.A.	UPM	 Oxygen Flowmeter 8	
C138	N.A.	UPM	 Oxygen Flowmeter 9	
C139	N.A.	UPM	 Flow Meter 1	
C140	N.A.	UPM	 Flow Meter 2	
C141	N.A.	UPM	 Flow Meter 3	
C142	N.A.	UPM	 Flow Meter 4	
C143	N.A.	UPM		
C144	N.A.	UPM	 1	
C145	N.A.	UPM	 2	
C146	N.A.	UPM	 3	










Sr.	A4	Univ	Photo	Photo
C147	N.A.	UPM	 4	
C148	N.A.	UPM	 5	
C149	N.A.	UPM	 6	
C150	N.A.	UPM	 1	
C151	N.A.	UPM	 2	
C152	N.A.	UPM	 3	
C153	N.A.	UPM	 4	
C154	N.A.	UPM	 1	
C155	N.A.	UPM	 2	

Sr.	A4	Univ	Photo	Photo
C156	N.A.	UPM		
C157	N.A.	UPM		
C158	N.A.	UPM		
C159	N.A.	UPM		
C160	N.A.	UPM		
C161	N.A.	UPM		
C162	N.A.	UPM		
C163	N.A.	UPM		
C164	N.A.	UPM		

Sr.	A4	Univ	Photo	Photo
C165	N.A.	UPM		
C200	N.A.	UNISEL		
C201	N.A.	UNISEL	 0.5-5uL	
C202	N.A.	UNISEL	 20-200uL	
C203	N.A.	UNISEL	 100-1,000uL	
C204	N.A.	UNISEL		
C205	N.A.	UNISEL		
C302	N.A.	UMT		












Sr.	A4	Univ	Photo	Photo
C303	N.A.	UMT		
C310	N.A.	UMT		
C311	N.A.	UMT		
C312	N.A.	UMT		
C314	N.A.	UMT		
C315	N.A.	UMT		
C316	N.A.	UMT		Book titled "Identifying Marine Phytoplankton", Hard copy

Sr.	A4	Univ	Photo	Photo
C317	N.A.	UMT		Book titled "Identifying Marine Phytoplankton", Hard copy
J003	N.A.	UPM		
J004	N.A.	UPM		
J005	N.A.	UPM		UPM, IBS, 4F, Project office, Cabinet
J007	N.A.	UPM		
J024	N.A.	UPM		
J026	N.A.	UPM		

Sr.	A4	Univ	Photo	Photo
J029	N.A.	UPM		
J032	N.A.	UPM	 <p data-bbox="459 779 895 808">Photosynthetically Active Radiation (PAR) sensor</p>	
J033	N.A.	UPM		
J034	N.A.	UPM		
J035	N.A.	UPM		
J036	N.A.	UPM		
J040	N.A.	UPM		

Sr.	A4	Univ	Photo	Photo
J041	N.A.	UPM		
J042	N.A.	UPM		
J043	N.A.	UPM		
J044	N.A.	UPM		
J045	N.A.	UPM		
J046	N.A.	UPM		



Sr.	A4	Univ	Photo	Photo
J047	N.A.	UPM		
J048	N.A.	UPM	 UPS	
J049	N.A.	UPM	 UPS	
J050	N.A.	UPM		
J051	N.A.	UPM		
J052	N.A.	UPM	 Peristaltic Pump 1	
J053	N.A.	UPM	 Peristaltic Pump 2	

Sr.	A4	Univ	Photo	Photo
J054	N.A.	UPM	 <p data-bbox="461 488 703 521">Distill water system</p>	
J055	N.A.	UPM	 <p data-bbox="461 779 501 813">TV</p>	
J056	N.A.	UPM	 <p data-bbox="461 1064 571 1097">Laptop 1</p>	
J057	N.A.	UPM	 <p data-bbox="461 1350 571 1384">Laptop 2</p>	
J058	N.A.	UPM	 <p data-bbox="461 1644 643 1677">Chest Freezer</p>	
J059	N.A.	UPM	 <p data-bbox="461 1935 576 1968">TV stand</p>	

Sr.	A4	Univ	Photo	Photo
J060	N.A.	UPM	 <p data-bbox="459 443 563 472">Blower1</p>	
J061	N.A.	UPM	 <p data-bbox="459 685 563 714">Blower2</p>	
J202	N.A.	UNISEL		
J304	N.A.	UMT		
J305	N.A.	UMT		
J307	N.A.	UMT		

The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**The List: Certificate of Handover (Equipment and vehicle)**

As of 15 March 2022

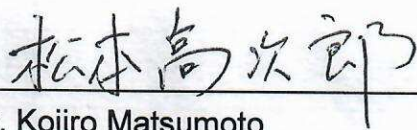
HO ID	University	Date (Signed)	Signed by (Malaysia)	Signed by (Japan)	Purchased from	Item
ID-01	UPM	2016/12/7	Prof. Fatimah, PM/ Team Leader	JICA Chief Representative	Malaysia	Vehicle
ID-02	UPM	2017A	Prof. Fatimah, PM/ Team Leader	Prof. Toda, Project Leader	Japan	Listed
ID-03	UPM	2019/9/27	Prof. Fatimah, PM/ Team Leader	Prof. Toda, Project Leader	Japan	Demo site (reactor and ammonia recovery system)
ID-04	UPM	2020/0/6/25	Prof. Fatimah, PM/ Team Leader	Prof. Toda, Project Leader	Malaysia/ Japan	Lab renovation/ Equipment (with/ without A4)
ID-05	UPM	2020/10/15	Prof. Fatimah, PM/ Team Leader	Prof. Toda, Project Leader	Japan	Demo site (centrifuge)
ID-06	UPM	2020/10/15	Prof. Fatimah, PM/ Team Leader	Prof. Toda, Project Leader	Japan	Demo site (bio-reactor)
ID-07	UPM	2022/1/8	Prof. Fatimah, PM/ Team Leader	Prof. Toda, Project Leader	Malaysia	Final (JICA Registered, peristaltic pump, distill water system etc)
ID-08	UPM	2022/3/15	Prof. Fatimah, PM/ Team Leader	Prof. Toda, Project Leader	Malaysia	Blower
ID-21	UNISEL	2018/1/4	Prof. Mohd Kushairi, Team Leader	JICA Chief Representative	Malaysia	Box furnace
ID-22	UNISEL	2019/9/26	Prof. Dato' Mohammad Redzuan Othman, President & vice chancellor	Prof. Toda, Project Leader	Japan	Listed (Liquid fractionation system)
ID-23	UNISEL	2020/0/6/25	Dr. Suhaila, Team Leader	Prof. Toda, Project Leader	Malaysia/ Japan	Equipment (with/ without A4)
ID-31	UMT	2018/11/1	Prof. Effendy, Team Leader	JICA Chief Representative	Malaysia	Auto crane
ID-32	UMT	No date (2017B)	Prof. Effendy, Team Leader	Prof. Toda, Project Leader	Japan	Listed (High performance liquid chromatography etc)
ID-33	UMT	2019/11/26	Prof. Effendy, Team Leader	Prof. Toda, Project Leader	Japan	Niskin water sampler, peristaltic pump. (Micoplate shaker cancelled.)
ID-34	UMT	2020/0/6/25	Prof. Effendy, Team Leader	Prof. Toda, Project Leader	Malaysia/ Japan	Listed Equipment (with/ without A4)
ID-35	UMT	2020/0/11/2	Prof. Effendy, Team Leader	Prof. Toda, Project Leader	Malaysia/ Japan	Reference book

## CERTIFICATE OF HANDOVER

PROJECT TITLE:

"CONTINUOUS OPERATION SYSTEM FOR MICROALGAE PRODUCTION  
OPTIMIZED FOR SUSTAINABLE TROPICAL AQUACULTURE (COSMOS)"

This is to certify that the equipment in the attached list for above-mentioned project have been handed over properly as of December 7, 2016 to Institute of Bioscience, Universiti Putra Malaysia.



Mr. Kojiro Matsumoto  
Chief Representative  
Japan International Cooperation  
Agency (JICA) Malaysia Office



Prof. Dr. Abdul Rahman Omar  
Director  
Universiti Putra Malaysia Institute of  
Bioscience

*December 7, 2016*

*Selangor, Malaysia*

## List of Equipment

No.	Name of Item	Qty.	Place of Delivery	Date of Handover
1	Mitsubishi Triton, 2.5L, VGT (AT)	1	IBS, UPM	Dec. 7, 2016
2				
3				
4				
5				
6				
7				
8				
9				
10				



# LESEN KENDERAAN MOTOR

AKTA PENGANGKUTAN JALAN 1987 KAEDAH KENDERAAN MOTOR (PENDAFTARAN DAN PELESENAN) 1959

Sila baca maklumat di muka sebelah sebelum melekatkan LKM ini di cermin kenderaan anda



LESEN KENDERAAN MOTOR  
AKTA PENGANGKUTAN JALAN 1987 KAEDAH KENDERAAN MOTOR (PENDAFTARAN DAN PELESENAN) 1959

**2017**

**BPB2237**      **01 DIS**      39174930

0114071 GYICqA1 02122016      02122016 01122017  
 VELO2000 021853 KHATIJA1      2477SP AE RM021.60  
 SEMENANJUNG      PERSENDIRIAN



GYICqA1

Layarilah portal JPJ di [www.jpj.gov.my](http://www.jpj.gov.my)



00474006

The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handed over Equipment/ 供与機材**

Note: These photos are taken 29 August 2019 for the monitoring purpose after the handover and is NOT attached to the original document of the certificate of handover.

As of 29 August 2019



No1a. Project Vehicle (Mitsubishi Triton) Front view



No1b. Rear view



No1c. Side view (Left)



No1.d. Side view (Right)

*The end of the document*



## CERTIFICATE OF HANDOVER

To: JICA Malaysia Office

Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for the SATREPS - COSMOS Project, have been handed over properly to Universiti Putra Malaysia.

Attached: List of Equipment

2017A



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Prof. Dr. Fatimah Md Yusoff  
Project Manager/ Professor  
Universiti Putra Malaysia  
Institute of Bioscience

for witness



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Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
SATREPS - COSMOS Project/ Soka  
University

## List of Equipment

No.	Name of Item	Qty.	Place of Installation
1	Liquid chromatography-mass spectrometry, Shimadzu LCMS-2020	1 ✓	SATREPS- COSMOS Laboratory, UPM
2	Auto analyzer for inorganic macro nutrients, BL-TEC QuAAtro39	1 ✓	SATREPS- COSMOS Laboratory, UPM
3	Continuous flow centrifuge, Beckman Avanti J-26S XP	1 ✓	SATREPS- COSMOS Laboratory, UPM
4 X	Portable gas analyzer, HORIBA PG-344	1 ✓	Aquaculture Experimental Station, Puchong, UPM
5 X	Fluorescence Multi Plate reader, Thermo VarioSkan LUX	1 ✓	Laboratory of Aquatic Bioproducts, UPM
6	Fluorescence microscope imaging system, Leica DM2500	1 ✓	SATREPS- COSMOS Laboratory, UPM
7	Ultra Micro balance, Mettler XP6V	1 ✓	SATREPS- COSMOS Laboratory, UPM
8	Anti Vibration table for Ultra Micro balance, Mettler ST-600	1 ✓	SATREPS- COSMOS Laboratory, UPM
9	Freeze drier (for SEM samples), SAN TECHNOLOGIES FD6510	1 ✓	IBS Microscopy Unit, UPM
10	Ultrasonic homogenizer, TAITEC VP-300N	1 ✓	SATREPS- COSMOS Laboratory, UPM
11	Large Autoclave for photobioreactor, TOMY SX-700	1 ✓	SATREPS- COSMOS Laboratory, UPM
12	Multi Spectrophotometer, HACH DR1900	1 ✓	SATREPS- COSMOS Laboratory, UPM
13	Outdoor light logging system, CLIMATEC	1 ✓	SATREPS- COSMOS Laboratory, UPM
14	Indoor light measuring system, Li-Cor	1 ✓	SATREPS- COSMOS Laboratory, UPM
15	Small Centrifuge, Beckman Allegra X-30R	1 ✓	SATREPS- COSMOS Laboratory, UPM
16	Low temperature Dry mill, MAKINO KGW-G015	1 ✓	SATREPS- COSMOS Laboratory, UPM
17 X	Multi filtration system for 2 inch filters, Custom-made	1 X	SATREPS- COSMOS Laboratory, UPM

Broken

→ Lab. 0

Level 2

IBS

? 誤記?

18	Muffle furnace, Shimadzu MPN-200	1	SATREPS- COSMOS Laboratory, UPM
19	Thermostat reactor, HACH DRB200	1	SATREPS- COSMOS Laboratory, UPM
20	Indoor experimental small-scale reactors, Custom-made	1	SATREPS- COSMOS Laboratory, UPM
21	Cooling system (for SEM sample preparation), SAN TECHNOLOGIES FDC10	1	IBS Microscopy Unit, UPM
22	Thermal cycler, ASTEC G02	1	SATREPS- COSMOS Laboratory, UPM
23	Gel documentation system, Mupid Mupid-2Plus	2	SATREPS- COSMOS Laboratory, UPM
24	Outdoor scaled-up bag reactor unit system, Custom-made	1	SATREPS- COSMOS Laboratory, UPM
25	Outdoor medium-scale nutrient recycling system, Custom-made	1	Aquaculture Experimental Station, Puchong, UPM
26	Fiber-optic oxygen meter (4ch), Firesting, 012981	? 1 ?	SATREPS- COSMOS Laboratory, UPM
27	Portable carbon dioxide densimeter, DKK-Toa Corporation, CGP-31	? 1 ?	SATREPS- COSMOS Laboratory, UPM
28	Distillation system, Gerhardt, VAP450	1	MARSLAB, UPM

## CERTIFICATE OF HANDOVER

To: JICA Malaysia Office

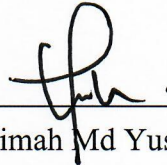
Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (hereinunder referred to as "COSMOS Project")

This certificate of handover is to certify that the equipment in the attached list, *which shall be utilized for the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture<sup>1</sup>*, have been handed over properly to Universiti Putra Malaysia (UPM), as of September 27, 2019.

Attached: List of Equipment

September 27, 2019, Selangor, Malaysia

(Signature)<sup>2</sup>



Prof. Dr. Fatimah Md Yusoff  
Project Manager/ Professor  
Universiti Putra Malaysia

for witness

(Signature)



Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
COSMOS Project/ Soka University

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<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]

<sup>2</sup> 受領者（署名者）は、「当該相手国政府等の機関の長又はそれに準ずる者」とする。

## List of Equipment

No.	Name of Item	Qty.	Place of Installation
Outdoor scaled-up multiple bag reactor system, consisting of the following items		1	Demonstration site, nearby the Faculty of Agriculture, UPM
1	Tank - Main Body	1	<i>Ditto</i>
2	Aeration Unit	1	<i>Ditto</i>
3	Connection Piping unit for bag reactor	1	<i>Ditto</i>
4	Compressor	1	<i>Ditto</i>
5	Electrical components	1	<i>Ditto</i>
6	Nutrient/water reservoir tank	1	<i>Ditto</i>
7	UV lamps	1	<i>Ditto</i>
8	Connection piping unit	1	<i>Ditto</i>
9	Reactor bags	1	<i>Ditto</i>
Outdoor large-scale nutrient recycling system, consisting of the following items		1	<i>Ditto</i>
10	Polypropylene Reactor	1	<i>Ditto</i>
11	Aluminum reinforcement frame	1	<i>Ditto</i>
12	SUS stirring blade	1	<i>Ditto</i>
13	Steel frame for tank	1	<i>Ditto</i>
14	Parts for reactor	1	<i>Ditto</i>

Minamo Hirahara

*M. Hirahara*

27 September 2019

*All items are duly inspected and confirmed.*

## CERTIFICATE OF HANDOVER

To: JICA Malaysia Office

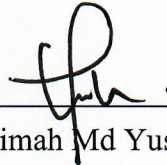
Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (hereinunder referred to as "COSMOS Project")

This certificate of handover is to certify that the equipment in the attached list, *which shall be utilized for the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture<sup>1</sup>*, have been handed over properly to Universiti Putra Malaysia (UPM), as of September 27, 2019.

Attached: List of Equipment

September 27, 2019, Selangor, Malaysia

(Signature)<sup>2</sup>



Prof. Dr. Fatimah Md Yusoff  
Project Manager/ Professor  
Universiti Putra Malaysia

for witness

(Signature)



Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
COSMOS Project/ Soka University

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<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]

<sup>2</sup> 受領者（署名者）は、「当該相手国政府等の機関の長又はそれに準ずる者」とする。

## List of Equipment

This note is added by Yamada,  
as of 16 November 2020.

No.	Name of Item	Qty.	Place of Installation
	Outdoor scaled-up multiple bag reactor system, consisting of the following items	1	Demonstration site, nearby the Faculty of Agriculture, UPM
1	Tank - Main Body <span style="color: blue;">Discarded already</span>	1	<i>Ditto</i> Disposed.
2	Aeration Unit <span style="color: red;">Modified and re-utilized for the new</span>	1	<i>Ditto</i>
3	Connection Piping unit for bag reactor <span style="color: blue;">Discarded already</span>	1	<i>Ditto</i>
4	Compressor <span style="color: green;">Keep at the demo site/ no immediate use</span>	1	<i>Ditto</i>
5	Electrical components <span style="color: red;">Modified and re-utilized for the new</span>	1	<i>Ditto</i>
6	Nutrient/water reservoir tank <span style="color: red;">Re-utilized for the new</span>	1	<i>Ditto</i>
7	UV lamps <span style="color: red;">Re-utilized for the new</span>	1	<i>Ditto</i>
8	Connection piping unit <span style="color: blue;">Discarded already</span>	1	<i>Ditto</i>
9	Reactor bags <span style="color: blue;">Discarded already</span>	1	<i>Ditto</i>
	Outdoor large-scale nutrient recycling system, consisting of the following items	1	<i>Ditto</i>
10	Polypropylene Reactor	1	<i>Ditto</i>
11	Aluminum reinforcement frame	1	<i>Ditto</i>
12	SUS stirring blade	1	<i>Ditto</i>
13	Steel frame for tank	1	<i>Ditto</i>
14	Parts for reactor	1	<i>Ditto</i>

Minamo Hirahara

*M. Hirahara*

27 September 2019

All items are duly inspected and confirmed.

## The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (A4 Form) / A4 供与機材**

The items requested by the A4 Form issued 18 August 2016 as well as those items attached to them.

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*2	Qty	Unit price (JPY) *3	Unit price (RM)*4	Univ.:5	Building	Place	Year	JFY	Certificate Handover
<del>H055</del>	<del>51</del>	<del>Outdoor scaled-up multiple bag reactor system (needs follow-up)</del>	<del>Infini</del>	<del>Consisting of the following: items H058 to H065</del>	<del>Japan</del>	<del></del>	<del>Handover</del>	<del>1</del>	<del></del>	<del></del>	<del>UPM</del>	<del>Faculty Agriculture</del>	<del>Demo site</del>	<del>2019</del>	<del>JFY2019</del>	<del>2019/9/27</del>
H056	51	Tank - Main Body	Infini	Custom made	Japan	Out of order	Handover	0			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H057	51	Aeration Unit	ORION	Custom made. Dry-pump, KRF15A-B-02, Serial K19700216 and Serial K1970003.	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H058	51	Connection Piping unit for bag reactor	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H059	51	Compressor	ANEST IWATA	Oil free recipro. compressor. TFP50CF-10, Serial XG2504, AC200 volt, 50Hz, Capacity 155 liter, 1.48 MPa	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H060	51	Electrical components	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H061	51	Nutrient/water reservoir tank	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H062	51	UV lamps	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H063	51	Connection piping unit	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H064	51	Reactor bags	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H066	52	Outdoor large-scale nutrient recycling system	Suzuki plastic.	Consisting of the following: items H067 to H072 アンモニア他栄養塩回収システム(特注)	Japan	Nikkyo Technos, Co., Ltd.	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H067	52	Polypropylene Reactor	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	4,480,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H068	52	Aluminum reinforcement frame	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	490,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H069	52	SUS stirring blade	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	545,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H070	52	Steel frame for tank	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	545,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H071	52	Parts for reactor	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	370,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
<b>16</b>	<b>16</b>	<b>16</b>		<b>Total</b>					<b>6,430,000</b>	<b>0</b>						



**Handover Equipment (A4 Form) / A4 供与機材**

As of 11 July 2020

Sr.	A4	Univ	Photo	Photo
H055	51	UPM	H055 – H065	
H056	51	UPM		<p>Dicarded alraedy</p>
H057	51	UPM		 <p>Modified and used for the new reactor system</p> 
H059	51	UPM		<p>Keep at the demo site. No immideate use</p>
H060	51	UPM		<p>Modified and used for the new reactor system. The timers below (manufacturer: Omron) are removed and re-utilized.</p> 
H061	51	UPM		<p>Used for the new reactor system as it is.</p>

Sr.	A4	Univ	Photo	Photo
H062	51	UPM		UV lamps built in nutrient/water reservoir tank. Connecting pipes attached. <b>Used for the new reactor system as it is.</b>
H063	51	UPM	 Discarded	
H064	51	UPM	 Discarded	
H066	52	UPM	H066 – H071	
H067	52	UPM		
H068	52	UPM		
H069	52	UPM	Blade installed inside of the tank	
H070	52	UPM		

*The end of the document*

## CERTIFICATE OF HANDOVER

To: JICA Malaysia Office

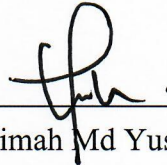
Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (hereinunder referred to as “COSMOS Project”)

This certificate of handover is to certify that the equipment in the attached list, *which shall be utilized for the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture<sup>1</sup>*, have been handed over properly to Universiti Putra Malaysia (UPM), as of September 27, 2019.

Attached: List of Equipment

September 27, 2019, Selangor, Malaysia

(Signature)<sup>2</sup>



Prof. Dr. Fatimah Md Yusoff  
Project Manager/ Professor  
Universiti Putra Malaysia

for witness

(Signature)



Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
COSMOS Project/ Soka University

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<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]

<sup>2</sup> 受領者（署名者）は、「当該相手国政府等の機関の長又はそれに準ずる者」とする。

## List of Equipment

This note is added by Yamada,  
as of 13 July 2020.

No.	Name of Item	Qty.	Place of Installation
Outdoor scaled-up multiple bag reactor system, consisting of the following items		1	Demonstration site, nearby the Faculty of Agriculture, UPM
1	Tank - Main Body	1	<i>Ditto</i>
2	Aeration Unit	1	<i>Ditto</i>
3	Connection Piping unit for bag reactor	1	<i>Ditto</i>
4	Compressor	1	<i>Ditto</i>
5	Electrical components	1	<i>Ditto</i>
6	Nutrient/water reservoir tank	1	<i>Ditto</i>
7	UV lamps	1	<i>Ditto</i>
8	Connection piping unit	1	<i>Ditto</i>
9	Reactor bags	1	<i>Ditto</i>
Outdoor large-scale nutrient recycling system, consisting of the following items		1	<i>Ditto</i>
10	Polypropylene Reactor	1	<i>Ditto</i>
11	Aluminum reinforcement frame	1	<i>Ditto</i>
12	SUS stirring blade	1	<i>Ditto</i>
13	Steel frame for tank	1	<i>Ditto</i>
14	Parts for reactor	1	<i>Ditto</i>

The items No.1-9 were found malfunctioning during the on-site installation in December 2019 and were cancelled and refunded at the JICA headquaters accordingly.

However, some components of No.2, 5, and 6 will be re-utilized as part (value).

plus No.4, 7, and 9. for re-utilization.

The items No.10-14 are all functioning and valid.

Minamo Hirahara

*M. Hirahara*

27 September 2019

All items are duly inspected and confirmed.

## The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (A4 Form) / A4 供与機材**









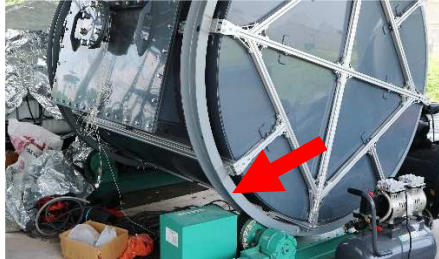
The items requested by the A4 Form issued 18 August 2016 as well as those items attached to them.

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*2	Qty	Unit price (JPY) *3	Unit price (RM)*4	Univ.:5	Building	Place	Year	JFY	Certificate Handover
<del>H055</del>	<del>51</del>	<del>Outdoor scaled-up multiple bag reactor system (needs follow-up)</del>	<del>Infini</del>	<del>Consisting of the following: items H058 to H065</del>	<del>Japan</del>	<del></del>	<del>Handover</del>	<del>1</del>	<del></del>	<del></del>	<del>UPM</del>	<del>Faculty Agriculture</del>	<del>Demo site</del>	<del>2019</del>	<del>JFY2019</del>	<del>2019/9/27</del>
H056	51	Tank - Main Body	Infini	Custom made	Japan	Out of order	Handover	0			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H057	51	Aeration Unit	ORION	Custom made. Dry-pump, KRF15A-B-02, Serial K19700216 and Serial K1970003.	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H058	51	Connection Piping unit for bag reactor	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H059	51	Compressor	ANEST IWATA	Oil free recipro. compressor. TFP50CF-10, Serial XG2504, AC200 volt, 50Hz, Capacity 155 liter, 1.48 MPa	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H060	51	Electrical components	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H061	51	Nutrient/water reservoir tank	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H062	51	UV lamps	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H063	51	Connection piping unit	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H064	51	Reactor bags	Infini	Custom made	Japan	Disposed	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H066	52	Outdoor large-scale nutrient recycling system	Suzuki plastic.	Consisting of the following: items H067 to H072 アンモニア他栄養塩回収システム(特注)	Japan	Nikkyo Technos, Co., Ltd.	Handover	1			UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H067	52	Polypropylene Reactor	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	4,480,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H068	52	Aluminum reinforcement frame	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	490,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H069	52	SUS stirring blade	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	545,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H070	52	Steel frame for tank	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	545,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
H071	52	Parts for reactor	Suzuki plastic.	Custom made	Japan	Nikkyo Technos, Co., Ltd.	Handover	1	370,000		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27
16	16	16		<b>Total</b>					6,430,000	0						

## Handover Equipment (A4 Form) / A4 供与機材

As of 11 July 2020

Sr.	A4	Univ	Photo	Photo
H055	51	UPM	H055 - H065	
H056	51	UPM		既に廃棄 承知しております
H057	51	UPM		 再利用? 再利用 予定です
H059	51	UPM		同品は再利用しませんか? 再利用予定です.
H060	51	UPM		オムロンのタイ マーを再利用? 内部のオムロンタイ マーのみ再利用 予定です.
H061	51	UPM		全て再利用? 全て再利用 予定です.

Sr.	A4	Univ	Photo	Photo
H062	51	UPM		UV lamps built in nutrient/water reservoir tank. Connecting pipes attached.  全て再利用？ 全て再利用予定です。
H063	51	UPM		
H064			 この袋は念のため保管希望です。	 使用済みのものは廃棄。
H066	52	UPM	H066 - H071	
H067	52	UPM		
H068	52	UPM		
H069	52	UPM	Blade installed inside of the tank	
H070	52	UPM		

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# CERTIFICATE OF HANDOVER

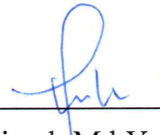
To: JICA Malaysia Office

Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (hereinunder referred to as “COSMOS Project”)

This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for *the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture*<sup>1</sup>, have been handed over properly to Universiti Putra Malaysia (UPM), as of *25 June 2020*.

Attached: List of Equipment

*25 June 2020*, Selangor, Malaysia

(Signature)<sup>2</sup> 

Prof. Dr. Fatimah Md Yusoff  
Project Manager/ Professor  
Universiti Putra Malaysia

for witness

(Signature) 

Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
COSMOS Project/ Soka University

<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]

<sup>2</sup> 受領者（署名者）は、「当該相手国政府等の機関の長又はそれに準ずる者」とする。



## The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (A4 Form) / A4 供与機材**

The items requested by the A4 Form issued 18 August 2016 as well as those items attached to them.

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*2	Qty	Unit price (JPY) *3	Unit price (RM)*4	Univ.:5	Univ. ID	Building	Place	Year	JFY
C001	67	DVD R/W drive	Archgon	SN: 133910000019	Malaysia		Local	1		222	UPM		IBS	Project office	2016	JFY2016
C002	67	Solid State Drive (SSD)	Samsung	860EVO, 500GB, 6GB/ sec. installed in laptop (J002)	Malaysia	Czone, IOI	Local	1		389	UPM		IBS	Project office	2019	JFY2019
C003	67	Memory (DDR)	Kingston	4GB, 2400MHZ, DDR4 installed in laptop (J002)	Malaysia	Czone, IOI	Local	1		85	UPM		IBS	Project office	2019	JFY2019
C004	68	HDD	Seagate	Seagate backup plus 4TB. SN: NA7PLGDF	Malaysia	Viewnet computer system	Local	1		669	UPM		IBS	Project office	2016	JFY2016
C005	69	Video camera	SONY	HDR-PJ440, SN: 3741769	Malaysia	Photo flash	Local	1		1,660	UPM		IBS	Project office	2016	JFY2016
C006	70	Camera	Canon	EOS M10 (WH) MC: 0922C013{AA} GS1-128	Malaysia	Thunder match technology	Local	1		1,550	UPM		IBS	Project office	2018	JFY2018
C007	70	Lens guard (attached to camera)	Hakuba	49 mm, SMC-PRO. Super multi coated lens guard	Malaysia	Thunder Match Technology	Local	1		180	UPM		IBS	Project office	2020	JFY2019
C008	71	Printer	HP	Deskjet ink 4729 all-in-one printer, Serial No. CN98A8H0NF. FPU No. F5S65-64001	Malaysia	All IT	Local	1		379	UPM		Faculty Agriculture		2020	JFY2019
C009	72	Projector	Epson	XGA2800lm, EB-X04, SN: WD5K6600877	Malaysia	All IT	Local	1		1,642	UPM		IBS	Project office	2016	JFY2016
C010	72	Laser pointer	Logitech	R800, wireless	Malaysia	All IT	Local	1		285	UPM		IBS	Project office	2016	JFY2016
C011	1	Acrylic cover	Custom-made	Custom-made	Malaysia	m & m Pet Shop	Local	1		1,720	UPM		Faculty Agriculture	MPU	2018	JFY2018
C012	67	Mouse	Logitech	M170, Black colour, wireless mouse	Malaysia	Thunder Match Technology	Local	1		28	UPM		IBS	Project office	2020	JFY2019
J002	67	Laptop computer	HP	HP Pavilion 14"HD laptop computer.	Malaysia	Data Plus Marketing SDN BHD	Local	1		2,599	UPM		IBS	Project office	2016	JFY2016
J006	19	Incubator 4	MMM	Incucell 404, standard bule line, capacity 404L, SN: D160570	Malaysia	PLT Scientific Sdn Bhd	Local	1		15,977	UPM		IBS		2019	JFY2018
J022	1	Colum	Waters	Xbridge BEH C18 colum,130 A, 5pm, 2.1mmx150mm	Malaysia	GAIA	Local	1		3,448	UPM		Faculty Agriculture	MPU	2017	JFY2017
J023	1	Colum Protection	Waters	VanGuard cartridge, 130A, 5pm, 2.1mmx5mm	Malaysia	GAIA	Local	1		2,399	UPM		Faculty Agriculture	MPU	2017	JFY2017
J025	8	Computer Desktop 1 (for Fluorescence Multi Plate reader)	HP	ProDesk 400G3 i3-6100 SFF, SN: SGH725TDCZ & 3CQ7330X29	Malaysia	Win-Tek Solution Sdn. Bhd	Local	1		2,777	UPM		Faculty Agriculture	MPU	2017	JFY2017
J027	59	Peristaltic pump 2	Eyela	MP-2000 220V, flow range: 10-1,450mL/h x 2; max liquid pressure: 196kPa, SN: 11801845	Malaysia	Fisher Sietific Sdn Bhd	Local	1		3,339	UPM		Faculty Agriculture	MPU	2018	JFY2018

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*2	Qty	Unit price (JPY) *3	Unit price (RM)*4	Univ.:5	Univ. ID	Building	Place	Year	JFY
J028	59	Peristaltic pump 3	Eyela	MP-2000 220V, flow range: 10-1,450mL/h x 2; max liquid pressure: 196kPa, SN: 11801846	Malaysia	Fisher Scientific Sdn Bhd	Local	1		3,339	UPM		Faculty Agriculture	MPU	2018	JFY2018
J033	19	Incubator 5	MMM	Friocell 222, confrot bule line, capacity 222L, SN: B060851	Malaysia	PLT Scientific Sdn Bhd	Local	1		17,688	UPM		Port Dickson	I-AQUAS	2019	JFY2018
J037	52	Air Compressor	Euro Power	Eurox, EAX-7120, 3Hp 100L Belt driven	Malaysia	RLanD Technic Resources	Local	1		2,395	UPM		Faculty Agriculture	Demo site	2019	JFY2019
J038	52	Air tank	Custom made	Vertical Air Receiver Tank. 400 Liters, 120 Kg, Length1998 mm x Diameter 511 mm	Malaysia	RLanD Technic Resources	Local	1		4,335	UPM		Faculty Agriculture	Demo site	2019	JFY2019
J039	52	Stabilizer and transformer	Success electronic & transformer	QPS, Model: VST35-2S. Input: 415V (fractuation 12%), neutral (4 wire), Output 200V phase to phase (1.5%) 115V (Phase to neutral). 100A (35KVA). Weather proof outdoor unit.	Malaysia	ZKK SDN BHD	Local	1		19,100	UPM		Faculty Agriculture	Demo site	2019	JFY2019
<b>23</b>	<b>23</b>		<b>23</b>	<b>Total</b>					<b>0</b>	<b>86,205</b>						

## The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

## Handover Equipment (without A4 Form) / 供与機材(その他)

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Date (Purchase)
C020	N.A.	Heat block	Thermo Scientific	REACTI-BLOCK Q-1, TPR#TS-18814	Malaysia		Local	1		689	UPM		Faculty Agriculture	MPU	2018/04/27
C021	N.A.	Heat block	Thermo Scientific	REACTI-BLOCK B-1, 9 X 3mL, TPR#TS-18802	Malaysia		Local	1		689	UPM		Faculty Agriculture	MPU	2018/04/27
C022	N.A.	Heat block	Thermo Scientific	REACTI-BLOCK M-1, TPR#TS-18811	Malaysia		Local	1		689	UPM		Faculty Agriculture	MPU	2018/04/27
C023	N.A.	Chiller	Hai Lea	HS28A, Power: 1/10HP, Iced medium: R134a	Malaysia		Local	1		1,480	UPM		Faculty of agriculture	MPU	2018/09/13
C024	N.A.	Chiller	Hai Lea	HS28A, Power: 1/10HP, Iced medium: R134a	Malaysia		Local	1		1,480	UPM		Faculty of agriculture	MPU	2018/09/13
C025	N.A.	Fridge	Sharp	SJ366MSS 360L	Malaysia		Local	1		1,696	UPM		IBS	LHS	2018/02/19
C026	N.A.	High pressure washer	Karcher	K2.360. 20 cubic meter/h, 20-120 bar, 360 L/h, 1,400W	Malaysia	Home Pro	Local	1		549	UPM		Faculty of agriculture	Demo site	2019/10/09
C027	N.A.	Vacuum pump	Nitto	DP0102-X1	Malaysia		Local	1		793	UPM		Faculty of agriculture	MPU	2017/12/22
C028	N.A.	Vertical microtube holder	Scientific Industries	SI-V524	Malaysia	GAIA	Local	1		750	UPM		Faculty of agriculture	MPU	2017/06/28
C029	N.A.	Vertical microtube holder	Scientific Industries	SI-V524	Malaysia	GAIA	Local	1		750	UPM		IBS	MARSLA B	2017/06/28
C030	N.A.	Voetex mixer	Scientific Industries	Genie 2, SI-0266, SN: 2E225236, 2E-225259	Malaysia	GAIA	Local	1		1,450	UPM		Faculty of agriculture	MPU	2017/06/28
C031	N.A.	Voetex mixer	Scientific Industries	Genie 2, SI-0266, SN: 2E225236, 2E-225259	Malaysia	GAIA	Local	1		1,450	UPM		IBS	MARSLA B	2017/06/28
C032	N.A.	Water pump	Eheim	SN: 07023, 07033	Malaysia		Local	1		450	UPM		Faculty of agriculture	MPU	2018/09/13
C033	N.A.	Water pump	Eheim	SN: 07023, 07033	Malaysia		Local	1		450	UPM		Faculty of agriculture	MPU	2018/09/13
C034	N.A.	Micropipette	Nichipet	EX-plus II, 1000µL	Malaysia	GAIA	Local	1		1,134	UPM		Faculty of agriculture	MPU	2017/02/16
C035	N.A.	Air pump	Ehiem	Air pumo 400	Malaysia		Local	1		223	UPM		Faculty of agriculture	MPU	2018/03/13
C037	N.A.	Ladder		Holding, aluminium	Malaysia	Home Pro	Local	1		319	UPM		Faculty of agriculture	Demo site	2019/09/20
C038	N.A.	Cabinet 1	N/A	Beige colour, metal swing door, 3 adjustable shelves. 915W x 457D x 1828H mm	Malaysia	Aimsure Office System	Local	1		347.17	UPM		Faculty of agriculture	MPU	2017/12/20
C039	N.A.	Cabinet 2	N/A	Beige colour, metal swing door, 3 adjustable shelves. 915W x 457D x 1828H mm	Malaysia	Aimsure Office System	Local	1		347.17	UPM		Faculty of agriculture	MPU	2017/12/20
C040	N.A.	Mobile pedestal 1		Grey colour. 2D+1F, 410W x 500D x 640H mm	Malaysia	Aimsure Office System	Local	1		198.00	UPM		Faculty of agriculture	MPU	2017/12/17
C041	N.A.	Mobile pedestal 2		Grey colour. 2D+1F, 410W x 500D x 640H mm	Malaysia	Aimsure Office System	Local	1		198.00	UPM		Faculty of agriculture	MPU	2017/12/17

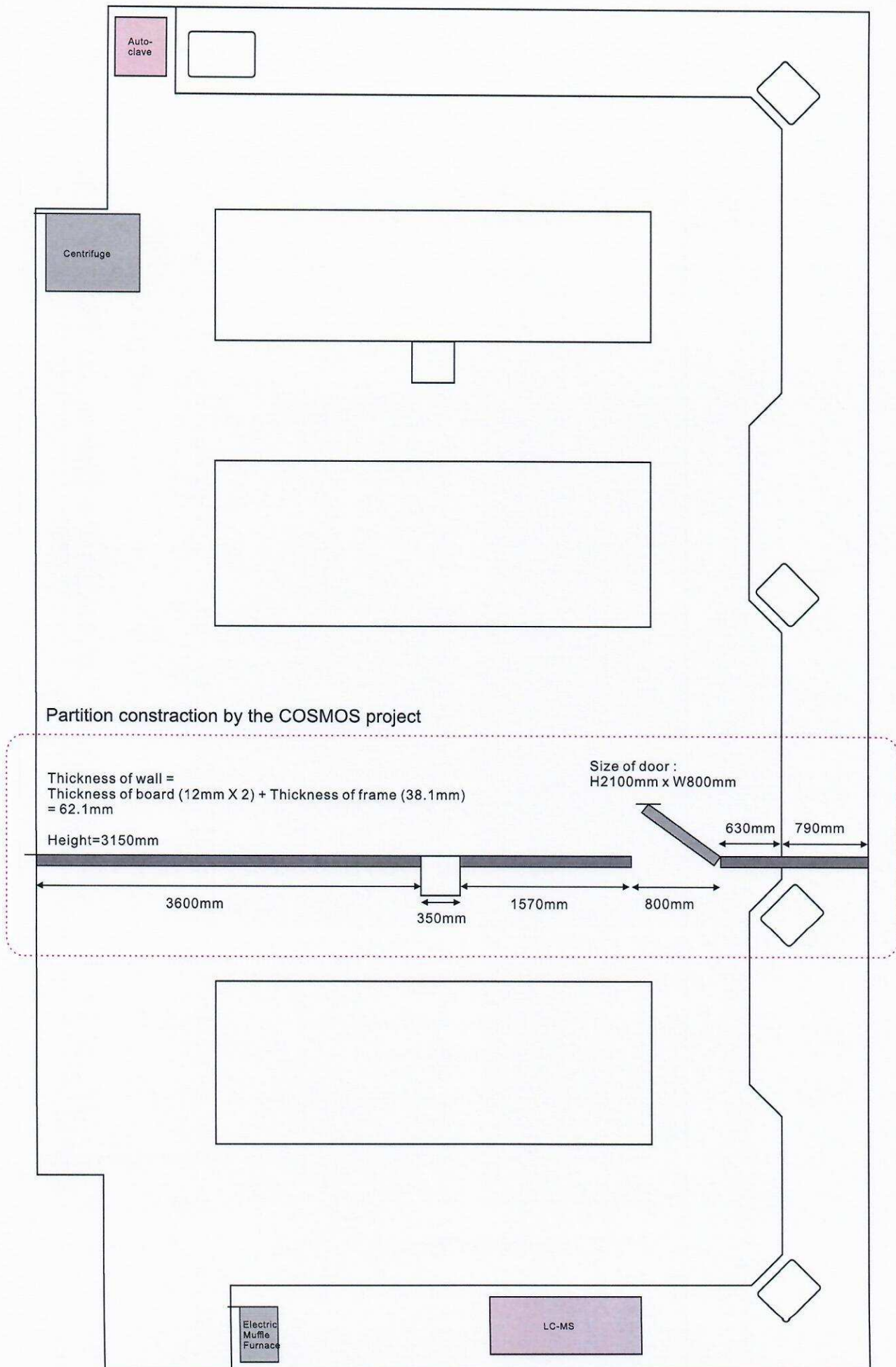
PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Date (Purchase)
C042	N.A.	Mobile pedestal 3		Grey colour. 2D+1F, 410W x 500D x 640H mm	Malaysia	Aimsure Office System	Local	1		198.00	UPM		Faculty of agriculture	MPU	2017/12/17
C043	N.A.	Mobile pedestal 4		Grey colour. 2D+1F, 410W x 500D x 640H mm	Malaysia	Aimsure Office System	Local	1		198.00	UPM		Faculty of agriculture	MPU	2017/12/17
C044	N.A.	Mobile pedestal 5		Grey colour. 2D+1F, 410W x 500D x 640H mm	Malaysia	Aimsure Office System	Local	1		198.00	UPM		Faculty of agriculture	MPU	2017/12/17
C050	N.A.	pH electrode	HORIBA	9625-10D	Malaysia		Local	1		827	UPM		Faculty of agriculture	MPU	2017/09/28
C051	N.A.	pH meter	HORIBA	LAQUATWIN-PH-22B	Malaysia		Local	1		1,151	UPM		Faculty of agriculture	MPU	2017/12/22
C052	N.A.	Distillation system	PLT Scientific	W4L, SN: W021353	Malaysia		Local	1		1,353	UPM		Faculty of agriculture	MBA	2018/12/20
C053	N.A.	Dry cabinet	SAMURAI	GP-150LA	Malaysia	Tarita Multimedia Camera	Local	1		1,699	UPM		Faculty of agriculture	L2	2017/03/13
C055	N.A.	Almi trunk case	TACT	530 61-2486-38	Malaysia	GAIA	Local	1		816	UPM		Faculty of agriculture	MPU	2017/03/10
C056	N.A.	Almi trunk case	TACT	530 61-2486-38	Malaysia	GAIA	Local	1		816	UPM		Faculty of agriculture	MPU	2017/03/10
C058	N.A.	Speakerphone 1	YAMAHA	YVC-300, unified communication speakerphone, S/N: S4P058847	Malaysia		Local	1		1,800	UPM		Faculty of agriculture	L2	2019/05/09
C059	N.A.	Transformer		Step down, 1.5KVA	Malaysia	Melectron Marketing SDN BHD	Local	1		470	UPM		Faculty of agriculture	MPU/ Demo site	2019/09/22
C060	N.A.	Voltage regulator		Slide (dial), 2KVA	Malaysia	Melectron Marketing SDN BHD	Local	1		365	UPM		Faculty of agriculture	MPU/ Demo site	2019/09/22
C062	N.A.	Sterilization box	Asone	Stainless pipette sterilization box	Malaysia		Local	1		551.20	UPM		Faculty of agriculture	MPU	2017/12/22
C063	N.A.	Webcam 1	Logitech	C922 Pro HD Stream Webcam, S/N: 1902LZ0D3XX9	Malaysia		Local	1		299.00	UPM		Faculty of agriculture	L2	2019/04/22
C064	N.A.	Acrylic cover	Custom-made	950mmx660mmx800mm	Malaysia		Local	1		1,600.00	UPM		Faculty of agriculture	MPU	2018/08/17
C065	N.A.	Cool box	IGLOO	Wheelie cool, 38Qt cooler, red & white	Malaysia	Unisersal Fitness & Leisure	Local	1		289.00	UPM		Faculty of agriculture	MPU	2017/06/20
C066	N.A.	Micropipette	Nichipet	EX-plus II, 100-1,000µL, Grey, Serial J17703131	Malaysia	GAIA	Local	1		876.62	UPM		Faculty Agriculture	MPU	2017/09/14
C067	N.A.	Micropipette	Nichipet	EX-plus II, 100-1,000µL, Yellow, Serial J17500071	Malaysia	GAIA	Local	1		876.62	UPM		Faculty Agriculture	MPU	2017/09/14
C068	N.A.	Micropipette	Nichipet	EX-plus II, 20µL, 00-MPLO2-20, Grey, Serial A78002351	Malaysia	GAIA	Local	1		1,051.00	UPM		Faculty of agriculture	MPU	2017/01/31
C069	N.A.	Micropipette	Nichipet	EX-plus II, 20µL, 00-MPLO2-20, Yellow, Serial J17504791	Malaysia	GAIA	Local	1		1,051.00	UPM		Faculty of agriculture	MPU	2017/01/31
C070	N.A.	Micropipette	Nichipet	EX-plus II, 5000µL, Yellow, Serial J17610881	Malaysia	GAIA	Local	1		1,255.00	UPM		Faculty of agriculture	MPU	2017/02/16
C071	N.A.	Cabinet		Steel, light gray colour, swing door, size (mm): 915W x 457D x 1,830W.	Malaysia	AIMsure	Local	1		399.00	UPM		Faculty of agriculture	Demo site	2020/02/18

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Date (Purchase)
C072	N.A.	Cabinet		Steel, light gray colour, swing door, size (mm): 915W x 457D x 1,830W.	Malaysia	AIMsure	Local	1		399.00	UPM		Faculty of agriculture	Demo site	2020/02/18
C073	N.A.	Cabinet		Steel, light gray colour, swing door, size (mm): 915W x 457D x 1,830W.	Malaysia	AIMsure	Local	1		399.00	UPM		Faculty of agriculture	L1	2020/02/18
C074	N.A.	UV Lamp (Sterilizer)		Submersible for aquarium tank:60W, quartz glass, AC 220V 50Hz, UV Transmission: >90%, UV Band: 254nm, Proof Pressure: 0.7Mpa. Lamp Service Life:10,000hrs	Malaysia	HAKIKAT INSAN NIAGA	Local	1		885.00	UPM		Faculty of agriculture	Demo site	2020/03/28
C075	N.A.	Cool box	IGLOO	Wheelie cool, 38Qt cooler, red & white	Malaysia	Unisersal Fitness & Leisure	Local	1		289.00	UPM		IBS	Project office	2017/06/20
C076	N.A.	Cool box	IGLOO	Wheelie cool, 38Qt cooler, red & white	Malaysia	Unisersal Fitness & Leisure	Local	1		289.00	UPM		IBS	Project office	2017/06/20
C077	N.A.	CO2 Regulator multistage		Multi-stage Gas-Arc	Malaysia	RSS Instruments	Local	1		980.00	UPM		Faculty of agriculture	MPU	2019/12/30
J005	N.A.	UV lamp	Spectroline	ENF-280C/FBE, SN: 2126206	Malaysia	Fisher Scientific Sdn Bhd	Local	1		2,600	UPM		IBS	Project office	2019/2/1
J007	N.A.	Evaporator	Thermo Pierce	REACTI-VAP™ III Evaporator, 27-port, TPR#TS-18826, SN: 0003170700024	Malaysia	Fisher Scientific Sdn Bhd	Local	1		7,208	UPM		Faculty Agriculture	MPU	2018/4/18
J024	N.A.	Data Logger	As One	GL840-M, SN: GL840-M C70116139	Malaysia	GAIA	Local	1		7,399	UPM		Faculty Agriculture	MPU	2017/9/26
J026	N.A.	UPS 5	Right Power	True Online UPS, Titan Vista Series 9+2KS, 10KW load 6-hour backup. 12V 150AH, Battery cabinet 2 tier, SN: 83221710102657	Malaysia	GAIA	Local	1		11,522	UPM		Faculty Agriculture	MPU	2018/4/18
J029	N.A.	Heating module	Thermo Pierce	REACTI-THERM™ III, Dry block sample incubation system. Heating module (triple block). TPR#TS-18824, SN: 0024180100001	Malaysia	Fisher Scientific Sdn Bhd	Local	1		10,388	UPM		Faculty Agriculture	Molecular	2018/4/18
J032	N.A.	Photosynthetically Active Radiation (PAR) sensor	Biospherical Instruments	BIP-QSL2101 QSL-2101 Digital Output Laboratory Scalar PAR Sensor. SN: 10743	Malaysia	GAIA	Local	1		14,400	UPM		Faculty Agriculture	MPU	2018/12/27
J033	N.A.	Multi-pipet 2	Gilson	PipetmanL FA10013. Multi 8- channel, 0.5-10µL.	Malaysia	GAIA	Local	1		4,971	UPM		Faculty of agriculture	MPU	2017/9/14
J034	N.A.	pH/Orp/Ion portable sensor	Horiba	Laquaact PH130, SN: D08K0007, water proof PH/ ORP ION portable handheld data meter	Malaysia	GAIA	Local	1		2,850	UPM		Faculty Agriculture	MPU	2019/3/12
J035	N.A.	Ammonia combination ion electrode	Horiba	Ammonia combination ion electrode. 5002S-10C, 5B9A0004	Malaysia	GAIA	Local	1		3,860	UPM		Faculty Agriculture	MPU	2019/3/12
J036	N.A.	Glassware for distillation reactor	Kyoritsu	Chemical-check lab, Corp, WA-CN-D	Malaysia	GAIA	Local	1		2,080	UPM		Faculty Agriculture	Syukri's office	2019/6/28
J037	N.A.	Submersible seawater pump		Model HQP 330. Discharge Bore 40 - 80 mm, Output 1.50 KW, three phase 50 Hz, Max liter per min: 800 L/min. Max water head 17m.	Malaysia	HAKIKAT INSAN NIAGA	Local	1		3,250	UPM		Faculty Agriculture	Demo site	2020/2/28
				<b>Total</b>					<b>0</b>	<b>108,040</b>					

## Renovation/ Rehabilitation of Infrastructure

No.	Purchase Date (YYYY/MM/DD)	Item	Category (Provisionn of material, Construction, Practical)	耐用年数	Site	Expenditure (RM)	Details
01	2017/1/31	Laborartoy partition	Renovation	10	UPM, Faculty of Agriculture, MPU	12,388	Renovation. Installing the partition to divde the lab into two section.Material: gypsum board (12mm thickness), half glass door (6.9ft x 2.7ft) and installation fee. (Nadi Lab Solutions)
02-1	2017/1/31	Free Standing Cabinet	Renovation	10	UPM, Faculty of Agriculture, MPU	950	Drawer (2), Door (1), Dimension: 0.9M (L) X 0.45M (W) X 0.88M (H)
02-2	2017/1/31	Island bench (pedestal system)	Renovation	10	UPM, Faculty of Agriculture, MPU	7,100	Dimesion: 4.12M (L) X 1.5M (W) X0.9M (H)
02-3	2017/1/31	Wall Hanging Cabinet 1	Renovation	10	UPM, Faculty of Agriculture, MPU	650	2 Swing metal doors. Dimension: 0.6M (L) X 0.35M (W) X 0.6M (H)
02-4	2017/1/31	Wall Hanging Cabinet 2	Renovation	10	UPM, Faculty of Agriculture, MPU	650	2 Swing metal doors. Dimension: 0.6M (L) X 0.35M (W) X 0.6M (H)
02-5	2017/1/31	Wall Hanging Cabinet 3	Renovation	10	UPM, Faculty of Agriculture, MPU	730	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X 0.6M (H)
02-6	2017/1/31	Wall Hanging Cabinet 4	Renovation	10	UPM, Faculty of Agriculture, MPU	730	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X 0.6M (H)
02-7	2017/1/31	Wall Hanging Cabinet 5	Renovation	10	UPM, Faculty of Agriculture, MPU	730	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X 0.6M (H)
02-8	2017/1/31	Wall Hanging Cabinet 6	Renovation	10	UPM, Faculty of Agriculture, MPU	730	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X 0.6M (H)
02-9	2017/1/31	Wall Hanging Cabinet 7	Renovation	10	UPM, Faculty of Agriculture, MPU	900	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X <u>0.9M</u> (H)
02-10	2017/1/31	Wall Hanging Cabinet 8	Renovation	10	UPM, Faculty of Agriculture, MPU	900	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X <u>0.9M</u> (H)
02-11	2017/1/31	Wall Hanging Cabinet 9	Renovation	10	UPM, Faculty of Agriculture, MPU	900	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X <u>0.9M</u> (H)
02-12	2017/1/31	Wall Hanging Cabinet 10	Renovation	10	UPM, Faculty of Agriculture, MPU	900	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X <u>0.9M</u> (H)
03	2017/1/31	Island Bench	Renovation	10	UPM, Faculty of Agriculture, MPU	9,169	Dimension : 3.962M (L) x 1.22M (D) x 0.9M (H), frame structure, coated galvanised iron Table top : Phenolic top ラボ作業台2(特注) (Nadi Lab Solutions)
					<b>TOTAL</b>	<b>37,427</b>	

# Microalgae laboratory for COSMOS Project



# CERTIFICATE OF HANDOVER

To: JICA Malaysia Office

Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (hereinunder referred to as “COSMOS Project”)

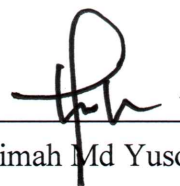
This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for *the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture*<sup>1</sup>, have been handed over properly to Universiti Putra Malaysia (UPM), as of

Attached: List of Equipment

26 MAR 2021

, Selangor, Malaysia

(Signature)<sup>2</sup>



Prof. Dr. Fatimah Md Yusoff  
Project Manager/ Professor  
Universiti Putra Malaysia

for witness

(Signature)



Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
COSMOS Project/ Soka University

<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]

<sup>2</sup> 受領者（署名者）は、「当該相手国政府等の機関の長又はそれに準ずる者」とする。



## The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (without A4 Form) / 供与機材(その他)**

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover	Purchase (YYYY/MM/DD)
C078	N.A.	Multi-purpose container (400 gallons) 1		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	485	UPM		Faculty of agriculture	Demo site	2019	JFY2019	2021/3/26	2019/12/26
C079	N.A.	Multi-purpose container (400 gallons) 2		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	485	UPM		Faculty of agriculture	Demo site	2019	JFY2019	2021/3/26	2019/12/26
C080	N.A.	Multi-purpose container (400 gallons) 3		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	485	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/7/21
C081	N.A.	Multi-purpose container (400 gallons) 4		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	485	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/7/21
C082	N.A.	Multi-purpose container (400 gallons) 5		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	485	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/7/21
C083	N.A.	Multi-purpose container (400 gallons) 6		Black colour, 400 gallons (1,500 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	485	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/7/21
C084	N.A.	Multi-purpose container (500 gallons) 1		Black colour, 500 gallons (1,890 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	620	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/7/21
C085	N.A.	Multi-purpose container (500 gallons) 2		Black colour, 500 gallons (1,890 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	620	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/7/21
C086	N.A.	Tripod	Red buffalo	TR-888, colour black, aluminum, load capacity 1,250g, height 59.5 - 170cm	Malaysia	Key Colour Photo SDN	Local	1	150	UPM		IBS	Project office	2020	JFY2020	2021/3/26	2020/7/24
C087	N.A.	Microphone	Boya	BY-M1; Omni direction; cable 6 m; black colour; LR44 battery	Malaysia	Remax	Local	1	115	UPM		IBS	Project office	2020	JFY2020	2021/3/26	2020/7/24
C088	N.A.	Palette 1		Plastic, blue colour, max load 1.5 tonne	Malaysia	FUKA Industries SDN BHD	Local	1	100	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/9/21
C089	N.A.	Palette 2		Plastic, blue colour, max load 1.5 tonne	Malaysia	FUKA Industries SDN BHD	Local	1	100	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/9/21
C090	N.A.	Palette 3		Plastic, blue colour, max load 1.5 tonne	Malaysia	FUKA Industries SDN BHD	Local	1	100	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/9/23
C091	N.A.	Palette 4		Plastic, blue colour, max load 1.5 tonne	Malaysia	FUKA Industries SDN BHD	Local	1	100	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/9/23
C092	N.A.	Medium tank	Schutz	Ecobulk plastic tank with metal reinforcement, 1,000 liter: 1.2m x 1m x 1.16m(H) x 60kg. 4029302/ ECOULK MX1000/ 20 09 20/S23/1/030	Malaysia	SAFECEM SOLUTION SDN BHD	Local	1	550	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/9/23
C093	N.A.	Trash bin	Leader	Plastic, green colour, with wheel	Malaysia	FS Home Hardware	Local	1	188	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/9/4
C094	N.A.	Power extension cable		25 meter, outdoor	Malaysia	Ace	Local	1	150	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/12/2
C095	N.A.	Hammer drill	Black Decker	BDCHD18, 18V Lithium, with a carry case	Malaysia	Ace	Local	1	421	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/12/15
C096	N.A.	Multi-purpose container (150 gallons) 1		Black colour, 150 gallons (597 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	220	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/12/23
C097	N.A.	Multi-purpose container (150 gallons) 2		Black colour, 150 gallons (597 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	220	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/12/23

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover	Purchase (YYYY/MM/DD)
C098	N.A.	Multi-purpose container (150 gallons) 3		Black colour, 150 gallons (597 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	220	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/12/23
C099	N.A.	Multi-purpose container (150 gallons) 4		Black colour, 150 gallons (597 liters) with cover	Malaysia	TUJUSAMA Hardware SDN.	Local	1	220	UPM		Faculty of agriculture	Demo site	2020	JFY2020	2021/3/26	2020/12/23
C100	N.A.	Solenoid valve	Sanilixin	Solenoid valve, digital timer. SLP1DF02N1D13 220V, 50Hz, Pressure 0.5-16kgf/cm, Pipe: 1/2" Orifice	Malaysia	ZA Edumed resources	Local	1	550	UPM		Faculty of agriculture	Demo site	2021	JFY2020	2021/3/26	2021/3/2
J041	N.A.	Acid chamber	Custom-made	Mild steel, powder coating; dimension: 1.5m x 1.5m x 1.8m(H); door and pad lock; hole: ventilation holes; leaking proof 20cm from the floor	Malaysia	ZA EDUMED RESOURCES	Local	1	9,400	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26	2020/8/3
J042	N.A.	Metal framework (de-watering system)	Custom-made	Mild steel, anti rust& heavy duty paint; size: 2m(H) x 2m(W) x 3m(L); loading capacity:1.5 tones for each side; stainless chain with mild steel hook	Malaysia	ZA EDUMED RESOURCES	Local	1	15,900	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26	2020/8/3
J043	N.A.	Concrete mixer	Hisaki	Capacity mixed liter 75, engine Robin EY-20D, air-cooled gasoline, max output 5.5 hp, recoil start, weight 70kg, LxWxH: 1.4x0.65x1.15m	Malaysia	HAKIKAT INSAN NIAGA	Local	1	2,160	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26	2020/11/1
J044	N.A.	Submersible pump (for water)	Tsunami pump	HQP-330. 240V (12A), 330W (12HP), Water head 17 meter, Output 16 Cubic-meter/ hour, Outlet diameter 3 inch	Malaysia	Bumi Intelligent Resources	Local	1	2,750	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26	2020/11/12
J045	N.A.	Submersible pump (for sewage 1)	EVERGUSH	HQP-330. 240V (12A), 2,880W (1 HP), Water head 17 meter, Output 16 Cubic-meter/ hour, Outlet diameter 3 inch	Malaysia	ZA EDUMED	Local	1	2,240	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26	2020/12/3
J046	N.A.	Submersible pump (for sewage 2)	EVERGUSH	HQP-330. 240V (12A), 2,880W (1 HP), Water head 17 meter, Output 16 Cubic-meter/ hour, Outlet diameter 3 inch	Malaysia	ZA EDUMED	Local	1	2,240	UPM		Faculty Agriculture	Demo site	2020	JFY2020	2021/3/26	2020/12/3
			29	Total					42,244								

**Handover Equipment (without A4 Form) / (供与機材その他)**

As of 10 March 2021

Sr.	A4	Univ	Photo	Photo
C078	N.A.	UPM	 1	At the demo site (400 gallon) 1,514 Liter
C079	N.A.	UPM	 2	At the demo site (400 gallon) 1,514 Liter
C080	N.A.	UPM	 3	At the demo site (400 gallon) 1,514 Liter
C081	N.A.	UPM	 4	At the demo site (400 gallon) 1,514 Liter
C082	N.A.	UPM	 5	At the demo site (400 gallon) 1,514 Liter
C083	N.A.	UPM	 6	At the demo site (400 gallon) 1,514 Liter
C084	N.A.	UPM	 1	At the demo site (500 gallon) 1,892 Liter
C085	N.A.	UPM	 2	At the demo site (500 gallon) 1,892 Liter
C086	N.A.	UPM	 1	
C087	N.A.	UPM	 1	

Sr.	A4	Univ	Photo	Photo
C088	N.A.	UPM	 1	
C089	N.A.	UPM	 2	
C090	N.A.	UPM	 3	
C091	N.A.	UPM	 4	
C092	N.A.	UPM		
C093	N.A.	UPM		
C094	N.A.	UPM		
C095	N.A.	UPM		

Sr.	A4	Univ	Photo	Photo
C096	N.A.	UPM	Container (150 gallon) 	
C097	N.A.	UPM	Container (150 gallon) 	
C098	N.A.	UPM	Container (150 gallon) 	
C099	N.A.	UPM	Container (150 gallon) 	
C100	N.A.	UPM	 Solenid valve	
J041	N.A.	UPM		

Sr.	A4	Univ	Photo	Photo
J042	N.A.	UPM		
J043	N.A.	UPM		 <p><b>MOTO Mini Concrete Mixer</b>  Serial No MCM 2910  Model: 3 1/2 T - F<sup>3</sup>  Capacity: Mixed 75 LIT  Made In Malaysia</p>
J044	N.A.	UPM		
J045	N.A.	UPM		
J046	N.A.	UPM		

# CERTIFICATE OF HANDOVER


To: JICA Malaysia Office

Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (hereinunder referred to as "COSMOS Project")


This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for *the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture*<sup>1</sup>, have been handed over properly to Universiti Putra Malaysia (UPM), as of

Attached: List of Equipment

15 OCT 2021, Selangor, Malaysia

(Signature)<sup>2</sup>   
Prof. Dr. Fatimah Md Yusoff  
Project Manager/ Professor  
Universiti Putra Malaysia

for witness

(Signature)   
Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
COSMOS Project/ Soka University

<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]

<sup>2</sup> 受領者（署名者）は、「当該相手国政府等の機関の長又はそれに準ずる者」とする。

The items requested by the A4 Form issued 18 August 2016 as well as those items attached to them.

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*2	Qty	Unit price (JPY) *3	Univ.:5	Building	Place	Year	JFY	Certificate Handover	Date (Purchase)
H055	51	<b>Outdoor scaled-up multiple bag reactor system (needs follow-up)</b>		<b>Consisting of the following: items H055A to H064</b>	Japan		Handover	1		UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22	
H055A	51	<i>Floating plastic bag reactor</i>	Kawasou	Plastic bag. 1 set (81 pcs)	Japan	Kawasou	Handover	81	996,300	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H055B	51	<i>Floating plastic bag reactor</i>	Shouei kagaku	Acrylic box. 1 set (12 pcs)	Japan	Shouei kagaku	Handover	12	480,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H056A	51	<i>PVC Reactor-frame &amp; float system</i>	Ai-R	SUS frame. 1set (14 pcs)	Japan	Ai-R	Handover	14	600,600	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H056B	51	<i>PVC Reactor-frame &amp; float system</i>	Ai-R	Plastic float. 1 set (21 pcs)	Japan	Ai-R	Handover	21	319,200	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H056C	51	<i>PVC Reactor-frame &amp; float system</i>	Ai-R	PVC Plipe. 1 set (9 pcs)	Japan	Ai-R	Handover	9	270,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H056D	51	<i>PVC Reactor-frame &amp; float system</i>	Ai-R	SUS Shaft. 1 set (9 pcs)	Japan	Ai-R	Handover	9	360,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H057A	51	<i>Electronic motor system</i>	Touei Denki	Motor G3K32N. 1 set (3pcs)	Japan	Touei Denki	Handover	3	150,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H057B	51	<i>Electronic motor system</i>	Touei Denki	Motor control pane. 1 set (3 pcs)	Japan	Touei Denki	Handover	3	450,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H058	51	<i>Small scale floating plastic bag reactor</i>	Shouei Kagaku	Small scale acrylic box	Japan	Shouei Kagaku	Handover	1	43,700	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059A	51	<i>Laboratory instruments &amp; consumables</i>	Iwaki	Magnet pump MD55R	Japan	Iwaki	Handover	1	50,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059B	51	<i>Laboratory instruments &amp; consumables</i>	Taiko Kikai Industries	Blower pump DF-40	Japan	Taiko Kikai Industries	Handover	1	50,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059C	51	<i>Laboratory instruments &amp; consumables</i>	Satotech	Dissolved oxygen meter (WA-2017SDJ-DO)	Japan	Satotech	Handover	8	240,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059D	51	<i>Laboratory instruments &amp; consumables</i>	Monotaro	Belts for reactor. 1 set (40 pcs)	Japan	Monotaro	Handover	40	20,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059E	51	<i>Laboratory instruments &amp; consumables</i>	Asone	Tube hose	Japan	Asone	Handover	4	16,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059F	51	<i>Laboratory instruments &amp; consumables</i>	Ozonemart	Ozone water generator OZNBSTR PRO	Japan	Ozonemart	Handover	1	110,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059G	51	<i>Laboratory instruments &amp; consumables</i>	Iwaki	Magnet pump MD70R	Japan	Iwaki	Handover	1	50,000	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059H	51	<i>Laboratory instruments &amp; consumables</i>	Ai-R	Metal bolts for float	Japan	Ai-R	Handover	1	28,200	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8
H059I	51	<i>Multiparameter Digital Water Quality Meter</i>	Xylem	ProDSS Multiparameter Digital Water Quality Meter	Japan	Xylem	Handover	1	834,300	UPM	Faculty Agriculture	Demo site	2021	JFY2021	2021/10/15	2021/8



PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*2	Qty	Unit price (JPY) *3	Univ.:5	Building	Place	Year	JFY	Certificate Handover	Date (Purchase)
H060	51	Aeration Unit	ORION	Custom made. Dry-pump, KRF15A-B-02, Serial K19700216 and Serial K1970003.	Japan		Handover	1		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H061	51	Compressor	ANEST IWATA	Oil free recipro. TFP55CF-10, Serial XG2504, 3 Phase 200V, 50Hz, Capacity 155 liter, 1.48 MPa	Japan		Handover	1		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H062	51	Electrical components	Infini	Custom made	Japan		Handover	1		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H063	51	Nutrient/water reservoir tank	Infini	Custom made	Japan		Handover	1		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H064	51	UV lamps	Infini	Custom made	Japan		Handover	1		UPM	Faculty Agriculture	Demo site	2019	JFY2019	2019/9/27	2019
H078	77	Centrifugal Separator	KANSAI CENTRIFUGAL	U-1-HR, Seral: 19-3767, Bowl No.19-3767, Input: 0.75KW×200-240V Single phase. Dimension: 1,310×930×H 1180mm, 217kg.	Japan	KANSAI CENTRIFUGAL	Handover	1	3,839,000	UPM	Faculty Agriculture	Demo site	2020	JFY2019	2021/10/15	2020/1/31
<b>25</b>	<b>25</b>		<b>25</b>	<b>Total</b>					<b>8,907,300</b>							

# SOKA UNIVERSITY (on behalf of JICA)

1-236, Tangi-machi, Hachioji-shi, Tokyo, 192-8577, Japan

TEL: 042-691-9455

30TH AUGUST 2021

INVOICE NO. 202108-01

## INVOICE

CONSIGNEE	UNIVERSITI PUTRA MALAYSIA 43400 UPM SERDANG, SELANGOR DARUL EHSAN, MA VOY TEL: 012-292-7763 ATTN: Prof. Fatimah Md. Yusoff	SHIPPED PER OOCL DALIAN 6645	PLACE OF RECEIPT TOKYO, JAPAN
		PORT OF LOADING YOKOHAMA, JAPAN	ON OR ABOUT 04TH SEPTEMBER 2021
NOTIFY	UNIVERSITI PUTRA MALAYSIA 43400 UPM SERDANG, SELANGOR DARUL EHSAN, MA PLACE OF DELIVERY ATTN: Mr. Azire (Mobile: 011-1781-2110) and Mr. Masaru Yamada (Mobile: 013-471-8265)	PORT OF DISCHARGE PORT KELANG, MALAYSIA	SATREPS-COSMOS DEMONSTRATION SITE, FACULTY OF AGRICULTU / UPM
		CASE MARK UNIVERSITY PUTRA MALAYSIA	
PAYMENT TERM	NO COMMERCIAL VALUE / VALUE FOR CUSTOMS PURPOSE ONLY	PORT KELANG C/NO.1-3	

ITEM	CONTENT	MANUFACTURER	COUNTRY OF ORIGIN	UNIT AMOUNT (JPY)	QTY	UNIT	TOTAL AMOUNT (JPY)
FLOATING PLASTIC BAG REACTOR	PLASTIC BAG	KAWASOU	JAPAN	12,300	81	SET	996,300
	ACRYLIC BOX	SHOUEI KAGAKU	JAPAN	40,000	12	SET	480,000
PVC REACTOR-FRAME & FLOAT SYSTEM	SUS FRAME	Ai-R	JAPAN	42,900	14	SET	600,600
	PLASTIC FLOAT	Ai-R	JAPAN	15,200	21	PCS	319,200
	PVC PIPE	Ai-R	JAPAN	30,000	9	SET	270,000
	SUS SHAFT	Ai-R	JAPAN	40,000	9	SET	360,000
ELECTRONIC MOTOR SYSTEM	MOTOR G3K32N	TOUEI DENKI	JAPAN	50,000	3	PC	150,000
	MOTOR CONTROL PANEL	TOUEI DENKI	JAPAN	150,000	3	PC	450,000
SMALL SCALE FLOATING PLASTIC BAG REACTOR	SMALL SCALE ACRYLIC BOX	SHOUEI KAGAKU	JAPAN	43,700	1	SET	43,700
LABORATORY INSTRUMENTS & CONSUMABLES	MAGNET PUMP MD55R	IWAKI	JAPAN	50,000	1	PC	50,000
	BLOWER PUMP	TAIKO KIKAI INDUSTRIES	JAPAN	50,000	1	PC	50,000
	DISOLVED OXYGEN METER	SATOTECH	JAPAN	30,000	8	SETS	240,000
	BELTS FOR REACTOR	MONOTAROU	JAPAN	500	40	PCS	20,000
	TUBE HOSE	ASONE	JAPAN	4,000	4	SETS	16,000
	OZONE WATER GENERATOR	OZONEMART	JAPAN	110,000	1	PC	110,000
	MAGNET PUMP MD70R	IWAKI	JAPAN	50,000	1	PC	50,000
METAL BOLTS FOR FLOAT	Ai-R	JAPAN	28,200	1	SET	28,200	

(N.C.V.) JPY 4,234,000

CIF YOKOHAMA, JAPAN

SOKA UNIVERSITY

SOKA UNIVERSITY

Prof. Dr. TATSUKI TODA

Prof. Dr. TATSUKI TODA

1/1



# I N V O I C E

NO. KCS-1263

Messers : UNIVERSITI PUTRA MALAYSIA  
 43400 UPM SELANGOR DARUL EHSAN, MALAYSIA  
 TEL : +60-17-603-6331  
 Prof. Fatimah Md. Yusoff

Shipment : To MALASIA From Japan

Remarks : CIF

NO	DESCRIPTION OF GOODS	QTY	UNIT VALUE	TOTAL VALUE
KN (IN DIA) MADE IN JAPAN	CENTRIFUGAL SEPARATOR	1	¥3839000	¥3,839,000
	1. NO. U-1-HR (Ser.NO.19-3767)			
	0.75KW×200V			
	Bowl No.19-3767			
	<u>MADE IN JAPAN</u>			
	1 : 1310×930×H 1180mm			
	N/W: 217kg G/W : 295kg			
TOTAL		1	JPY ¥3,839,000.	



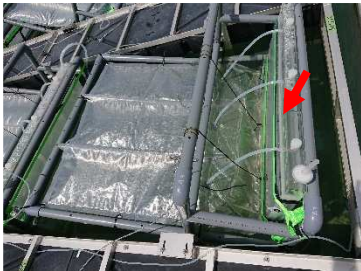







KANSAI CENTRIFUGAL SEPARATOR MFG. CO., LTD  
 1-8-8, Sagisu, Fukushima-ku, Osaka, Japan 5530002  
 TEL:+81-6-6458-8101 / FAX:+81-6-6454-0181

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 HISAO KATSUMI

## Handover Equipment (A4 Form) / A4 供与機材






As of 15 October 2021

Sr.	A4 Form No.	Univ	Photo	Photo
H055	51	UPM	Consisting of the following: items H055A to H064	
H055A	51	UPM	 <p>Plastic bag. 1 set (81 pcs)</p>	
H055B	51	UPM	 <p>Acrylic box. 1 set (12 pcs)</p>	
H056A	51	UPM	 <p>SUS frame. 1set (14 pcs)</p>	
H056B	51	UPM	 <p>Plastic float. 1 set (21 pcs)</p>	
H056C	51	UPM	 <p>PVC Pipe. 1 set (9 pcs)</p>	

Sr.	A4 Form No.	Univ	Photo	Photo
H056D	51	UPM	 <p data-bbox="427 456 619 483">SUS Shaft. 1 set (9 pcs)</p>	
H057A	51	UPM	 <p data-bbox="427 792 651 819">Motor G3K32N. 1 set (3pcs)</p>	
H057B	51	UPM	 <p data-bbox="427 1173 687 1200">Motor control pane. 1 set (3 pcs)</p>	
H058	51	UPM	 <p data-bbox="427 1563 608 1590">Small scale acrylic box</p>	
H059A	51	UPM	 <p data-bbox="427 1944 603 1971">Magnet pump MD55R</p>	

Sr.	A4 Form No.	Univ	Photo	Photo
H059B	51	UPM	 <p data-bbox="427 360 587 389">Blower pump DF-40</p>	
H059C	51	UPM	 <p data-bbox="427 842 772 871">Dissolved oxygen meter (WA-2017SDJ-DO)</p>	
H059D	51	UPM	 <p data-bbox="427 1081 671 1111">Belts for reactor. 1 set (40 pcs)</p>	
H059E	51	UPM	 <p data-bbox="427 1563 512 1592">Tube hose</p>	
H059F	51	UPM	 <p data-bbox="427 1899 746 1928">Ozone water generator OZNBSTR PRO</p>	

Sr.	A4 Form No.	Univ	Photo	Photo
H059G	51	UPM	 <p data-bbox="427 412 603 434">Magnet pump MD70R</p>	
H059H	51	UPM	 <p data-bbox="427 792 580 815">Metal bolts for float</p>	
H059I	51	UPM	 <p data-bbox="427 1084 884 1106">ProDSS Multiparameter Digital Water Quality Meter 1 unit</p>	
			 <p data-bbox="427 1151 900 1442"> <b>HOBO® MX2201 温度/MX2202 温度・照度データロガー</b>            HOBO MX ペンダント            データロガー            精度 ±0.5°C (-20° ~ 70°C)            分解能 0.04°C         </p>	
H060	51	UPM		
H061	51	UPM		

Sr.	A4 Form No.	Univ	Photo	Photo
H062	51	UPM		
H063	51	UPM		
H064	51	UPM		<p>UV lamps built in Nutrient/water reservoir tank. Connecting pipes attached.</p>
H078	77	UPM	 <p>Centrifugal Separator</p>	

*The end of the document*



The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (without A4 Form) / 供与機材(その他)**








PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C101	N.A.	Conical flask 1	Nice	1000ml	Malaysia	GAIA	Local	1		22	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C102	N.A.	Conical flask 2	Nice	1000ml	Malaysia	GAIA	Local	1		22	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C103	N.A.	Conical flask 3	Nice	1000ml	Malaysia	GAIA	Local	1		22	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C104	N.A.	Conical flask 4	Nice	1000ml	Malaysia	GAIA	Local	1		22	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C105	N.A.	Conical flask 1	Nice	3000ml	Malaysia	GAIA	Local	1		67	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C106	N.A.	Conical flask 2	Nice	3000ml	Malaysia	GAIA	Local	1		67	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C107	N.A.	Conical flask 3	Nice	3000ml	Malaysia	GAIA	Local	1		67	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C108	N.A.	Conical flask 4	Nice	3000ml	Malaysia	GAIA	Local	1		67	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C109	N.A.	Conical flask 1	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C110	N.A.	Conical flask 2	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C111	N.A.	Conical flask 3	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C112	N.A.	Conical flask 4	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C113	N.A.	Conical flask 5	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C114	N.A.	Conical flask 6	Nice	5000ml	Malaysia	GAIA	Local	1		115	UPM		Faculty of agriculture	MPU	2021	JFY2021	2021/10/22
C115	N.A.	Plastic chair 1		Plastic, black colour	Malaysia	HAPPY HOME HOUSEHOLD SDN. BHD.	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C116	N.A.	Plastic chair 2		Plastic, black colour	Malaysia	HAPPY HOME HOUSEHOLD SDN. BHD.	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C117	N.A.	Plastic chair 3		Plastic, black colour	Malaysia	HAPPY HOME HOUSEHOLD SDN. BHD.	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C118	N.A.	Plastic chair 4		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C119	N.A.	Plastic chair 5		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C120	N.A.	Plastic chair 6		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C121	N.A.	Plastic chair 7		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C122	N.A.	Plastic chair 8		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C123	N.A.	Plastic chair 9		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C124	N.A.	Plastic chair 10		Plastic, black colour	Malaysia	Happy Home Household Sdn Bhd	Local	1		17	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C125	N.A.	Holding table 1			Malaysia		Local	1		99	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
C126	N.A.	Holding table 2			Malaysia		Local	1		99	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2021/10/22
J047	N.A.	Diaphragm Pump	Shanghai Jofee Pump Co. Ltd	Model: MK25PP. Suction and discharge 1 inch, Max particle diameter 4mm, Air inlet 1/2 Inch; Max flow 157 l/min; Max air inlet pressure 8.4, Weight 9kg.	Malaysia	ZKK SDN BHD	Local	1		3,500	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22
J048	N.A.	UPS 6	Right Power	Titan Pro 10KS, Single phase, 10,000 VA / 9000 W, Input 208/220/230/240VAC, Output 208/220/230/240VAC, BATTERY TYPE: 12V / 9AH, DIMENSION D x W x H (mm): 442 x 190 x 688	Malaysia	GAIA	Local	1		8,975	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22
J049	N.A.	UPS 7	Right Power	Titan Pro 10KS, Single phase, 10,000 VA / 9000 W, Input 208/220/230/240VAC, Output 208/220/230/240VAC, BATTERY TYPE: 12V / 9AH, DIMENSION D x W x H (mm): 442 x 190 x 688	Malaysia	GAIA	Local	1		8,975	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22
J050	N.A.	Hand lift -Hand Pallet Truck	Geolift	Standard Hand Pallet Truck - Model: AC25-N. Capacity: 2500 kg.Truck Width: 520/685mm Fork Length: 1150/1220mm Fork Width: 160mm Min. Fork Height: 85mm Max Fork Height: 200mm Wheel Type: PU Standards: Conforms to EN	Malaysia	ZKK SDN BHD	Local	1		1,875	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22
J051	N.A.	Hand lift - Manual Hydraulic Stacker	Geolift	Manual Hydraulic Stacker Model: MS2016 (Germany Hydraulic Pump System) Capacity: 2000 kg. Min. Fork Height: 85mm Max Fork Height: 1600mm Mast Height: 2120mm Size of Fork: 160 x 60mm Length of Fork: 1150mm. Fork	Malaysia	ZKK SDN BHD	Local	1		4,000	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2021/10/22
		<b>31</b>		<b>Total</b>					<b>0</b>	<b>28,738</b>							










**Handover Equipment (without A4 Form) / (供与機材その他)**

As of 29 September 2021

Sr.	A4	Univ	Photo	Photo
C101	N.A.	UPM	 1	
C102	N.A.	UPM	 2	
C103	N.A.	UPM	 3	
C104	N.A.	UPM	 4	
C105	N.A.	UPM	 1	
C106	N.A.	UPM	 2	

Sr.	A4	Univ	Photo	Photo
C107	N.A.	UPM		
C108	N.A.	UPM		
C109	N.A.	UPM		
C110	N.A.	UPM		
C111	N.A.	UPM		
C112	N.A.	UPM		
C113	N.A.	UPM		

Sr.	A4	Univ	Photo	Photo
C114	N.A.	UPM	 6	
C115	N.A.	UPM	 1	
C116	N.A.	UPM	 2	
C117	N.A.	UPM	 3	
C118	N.A.	UPM	 4	
C119	N.A.	UPM	 5	
C120	N.A.	UPM	 6	
C121	N.A.	UPM	 7	
C122	N.A.	UPM	 8	
C123	N.A.	UPM	 9	
C124	N.A.	UPM	 10	

Sr.	A4	Univ	Photo	Photo
C125	N.A.	UPM	 1	
C126	N.A.	UPM	 2	
J047	N.A.	UPM		
J048	N.A.	UPM		
J049	N.A.	UPM		
J050	N.A.	UPM		
J051	N.A.	UPM		

# CERTIFICATE OF HANDOVER

To: JICA Malaysia Office

Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (hereinunder referred to as "COSMOS Project")

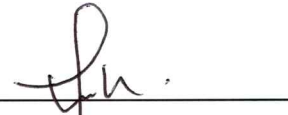
This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for *the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture*<sup>1</sup>, have been handed over properly to Universiti Putra Malaysia (UPM), as of

Attached: List of Equipment

08 JAN 2022

, Selangor, Malaysia

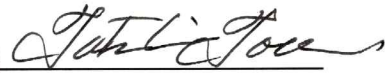
(Signature)<sup>2</sup>



Prof. Dr. Fatimah Md Yusoff  
Project Manager/ Professor  
Universiti Putra Malaysia

for witness

(Signature)



Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
COSMOS Project/ Soka University

<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]

<sup>2</sup> 受領者（署名者）は、「当該相手国政府等の機関の長又はそれに準ずる者」とする。

The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)





Procured Equipment (as of 19 November 2021)

PS	Registered No.	A4 No.	Purchase Date	JFY	Year	Item	Make	Specification	Value (MR)	Purchase Shop	Institution (user)	Univ ID	Building	Place	
J001	16-3-000544	71	2016/9/28	JFY2016	2016	Printer	HP	Color Laser Jet Pro MFP M477fdw	3,270	Win-Tek Solution Sdn.	UPM		IBS	Project office	
J003	16-3-004176		2017/3/9	JFY2016	2017	Generator	YAMAHA	EF3000iSE, Inverter silent generator, S/N:2510569.DC12V12A, AC 2.8KVA, 230V, single phase, 50HZ, Gasoline.	8,800	My Power Tools	UPM		Faculty Agriculture	Demo Site	
J004	16-3-004178		2017/8/10	JFY2017	2017	Safefy box	Sterling	Fire resistanct home safe (WW300). Dimension 0.375M (W)x 0.39 (D) x 0.435(H). S/N. 120200.	848	KS ooffice supplies Sdn	UPM		IBS	Project office	
<b>TOTAL</b>									<b>12,918</b>						



## Procured Equipment

As of 19 November 2021

Sr. No	A4 No.	Univ	Photo (Item)	Photo (Item with the surrounding/ Location) To be verified its location
J001	71	UPM		
J003	N.A.	UPM		
J004	N.A.	UPM		

*The end of the document*

The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)











Handover Equipment (without A4 Form) / 供与機材(その他)


PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C127	N.A.	Cabinet 4		Swing Door with Lock, Grey. Size 915(W) x 457(D) x 1828(H)MM. Model FH1	Malaysia	ZKK SDN BHD	Local	1		520	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C128	N.A.	Cabinet 5		Swing Door with Lock, Grey. Size 915(W) x 457(D) x 1828(H)MM. Model FH1	Malaysia	ZKK SDN BHD	Local	1		520	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C129	N.A.	Cabinet 6		Swing Door with Lock, Grey. Size 915(W) x 457(D) x 1828(H)MM. Model FH1	Malaysia	ZKK SDN BHD	Local	1		520	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C130	N.A.	Oxygen Flowmeter 1		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C131	N.A.	Oxygen Flowmeter 2		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C132	N.A.	Oxygen Flowmeter 3		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C133	N.A.	Oxygen Flowmeter 4		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C134	N.A.	Oxygen Flowmeter 5		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C135	N.A.	Oxygen Flowmeter 6		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C136	N.A.	Oxygen Flowmeter 7		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C137	N.A.	Oxygen Flowmeter 8		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C138	N.A.	Oxygen Flowmeter 9		Size: 1-15L 106x21x27mm. High-definition Oxygen Air Flowmeter Panel Type.	Malaysia	ZKK SDN BHD	Local	1		96	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C139	N.A.	Flow Meter 1		Model: K24. 10-120L/Min LCD Digital Diesel Oil Fuel Turbine. Length: 103MM. Flow range: 10-120L / min	Malaysia	ZKK SDN BHD	Local	1		196	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C140	N.A.	Flow Meter 2		Model: K24. 10-120L/Min LCD Digital Diesel Oil Fuel Turbine. Length: 103MM. Flow range: 10-120L / min	Malaysia	ZKK SDN BHD	Local	1		196	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C141	N.A.	Flow Meter 3		Model: K24. 10-120L/Min LCD Digital Diesel Oil Fuel Turbine. Length: 103MM. Flow range: 10-120L / min	Malaysia	ZKK SDN BHD	Local	1		196	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C142	N.A.	Flow Meter 4		Model: K24. 10-120L/Min LCD Digital Diesel Oil Fuel Turbine. Length: 103MM. Flow range: 10-120L / min	Malaysia	ZKK SDN BHD	Local	1		196	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C143	N.A.	Container		White Tank DAM 200 MX	Malaysia	ZKK SDN BHD	Local	1		450	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C144	N.A.	Pallet 5		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C145	N.A.	Pallet 6		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C146	N.A.	Pallet 7		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C147	N.A.	Pallet 8		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C148	N.A.	Pallet 9		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C149	N.A.	Pallet 10		Plastic, Blue color, size: 1100mm x 1100mm x 150mm (T)	Malaysia	ZA Edumed	Local	1		155	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C150	N.A.	IBC Tank 01		IBC tank, 1000 Liter (with Aluminium Cage) , size: 1200mm (L) x 1000mm (W) x1155mm (H)	Malaysia	ZA Edumed	Local	1		660	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C151	N.A.	IBC Tank 02		IBC tank, 1000 Liter (with Aluminium Cage) , size: 1200mm (L) x 1000mm (W) x1155mm (H)	Malaysia	ZA Edumed	Local	1		660	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C152	N.A.	IBC Tank 03		IBC tank, 1000 Liter (with Aluminium Cage) , size: 1200mm (L) x 1000mm (W) x1155mm (H)	Malaysia	ZA Edumed	Local	1		660	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
C153	N.A.	IBC Tank 04		IBC tank, 1000 Liter (with Aluminium Cage) , size: 1200mm (L) x 1000mm (W) x1155mm (H)	Malaysia	ZA Edumed	Local	1		660	UPM		Faculty of agriculture	Demo site	2021	JFY2021	2022/1/8
J003	N.A.	Generator	YAMAHA	EF3000ISE, Inverter silent generator, S/N:2510569.DC12V12A, AC 2.8KVA, 230V, single phase, 50HZ, Gasoline.	Malaysia	My Power Tools	Local	1		8,800	UPM		Faculty Agriculture	Demo site	2017	JFY2016	2022/1/8
J004	N.A.	Safety box	Sterling	Fire resistant home safe (WW300). Dimension 0.375M (W)x 0.39 (D) x 0.435(H). S/N. 120200.	Malaysia	KS office supplies Sdn Bhd	Local	1		848	UPM		IBS	Project office	2017	JFY2017	2022/1/8
J052	N.A.	Peristaltic Pump 1	Verderflex	DURA 10, Model: D10. Flow rate: 129 l/h max, Hose ID: 10mm, Pressure: 6 bar max, Power: 0.55 kW, Serial No.148693A, YR.2021	Malaysia	MIKA TECH RESOURCES	Local	1		13,526	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
J053	N.A.	Peristaltic Pump 2	Verderflex	DURA 10, Model: D10. Flow rate: 129 l/h max, Hose ID: 10mm, Pressure: 6 bar max, Power: 0.55 kW, Serial No.148693B, YR.2021	Malaysia	MIKA TECH RESOURCES	Local	1		13,526	UPM		Faculty Agriculture	Demo site	2022	JFY2021	2022/1/8
J054	N.A.	Distill water system	Favorit	W4L. Output 4 L/hr, water supply 1L/min (pressure 3 p.s.i.), pH 5.0 to 6.5, Conductivity 3.0 to 4.0 µs/cm, Temp 35 to 50 °C, Pyrogen free, Power 220/240V, 50/60 Hz single, 13A fused, Size 50 x 45 x 45 cm	Malaysia	GAIA	Local	1		1,550	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
J055	N.A.	TV	Sony	Google TV, KD 65X85J. Screen 65". Weight: 32 kg, HDCP2.3(for HDMI™ 1/2/3/4). USB ports 2: FAT16/FAT32/exFAT/NTFS.	Malaysia	Harvey Norman	Local	1		5,412	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
J056	N.A.	Lap-top PC 1	ASUS	Intel Core i5-1135G7, 8MB, 2.4GHz SSD 512GB NVME, 8GB DDR4, 14 inch FHD IPS display	Malaysia	All It	Local	1		3,598	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
J057	N.A.	Lap-top PC 2	ASUS	Intel Core i5-1135G7, 8MB, 2.4GHz SSD 512GB NVME, 8GB DDR4, 14 inch FHD IPS display	Malaysia	All It	Local	1		3,598	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
J058	N.A.	Chest Freezer		Top Open. 420L, 74kgs, Size: 1325 (W) x 705 (D) x 865 (H) mm. Temp: -18 to -26 Deg Cel, c/w Lock & key, Mechanical Thermostat. Serial No.3211255272	Malaysia	AS SCIENTIFIC SUPPLIES	Local	1		1,890	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
J059	N.A.	Mobile TV Stand	ISRAK	Model: TS190-BLK, SPCC steel plate, aluminium alloy, black colour, loading capacity: 70kg, tray loading capacity: 4.5kg,TV Size: 50" - 80", Adjustable Height: 950 - 1600mm	Malaysia	Bumi Intelligent Resources	Local	1		1,980	UPM		Faculty Agriculture	Demo site	2021	JFY2021	2022/1/8
			<b>37</b>	<b>Total</b>					<b>0</b>	<b>61,956</b>							









**Handover Equipment (without A4 Form) / (供与機材その他)**


As of 7 January 2022

Sr.	A4	Univ	Photo	Photo
C127	N.A.	UPM	 Cabinet 4	
C128	N.A.	UPM	 Cabinet 5	
C129	N.A.	UPM	 Cabinet 6	
C130	N.A.	UPM	 Oxygen Flowmeter 1	
C131	N.A.	UPM	 Oxygen Flowmeter 2	
C132	N.A.	UPM	 Oxygen Flowmeter 3	
C133	N.A.	UPM	 Oxygen Flowmeter 4	
C134	N.A.	UPM	 Oxygen Flowmeter 5	
C135	N.A.	UPM	 Oxygen Flowmeter 6	
C136	N.A.	UPM	 Oxygen Flowmeter 7	

Sr.	A4	Univ	Photo	Photo
C137	N.A.	UPM	 Oxygen Flowmeter 8	
C138	N.A.	UPM	 Oxygen Flowmeter 9	
C139	N.A.	UPM	 Flow Meter 1	
C140	N.A.	UPM	 Flow Meter 2	
C141	N.A.	UPM	 Flow Meter 3	
C142	N.A.	UPM	 Flow Meter 4	
C143	N.A.	UPM		
C144	N.A.	UPM	 1	
C145	N.A.	UPM	 2	
C146	N.A.	UPM	 3	

Sr.	A4	Univ	Photo	Photo
C147	N.A.	UPM		
C148	N.A.	UPM		
C149	N.A.	UPM		
C150	N.A.	UPM		
C151	N.A.	UPM		
C152	N.A.	UPM		
C153	N.A.	UPM		
J052	N.A.	UPM	 <p data-bbox="459 1832 687 1874">Peristaltic Pump 1</p>	

Sr.	A4	Univ	Photo	Photo
J053	N.A.	UPM	 <p data-bbox="461 488 692 524">Peristaltic Pump 2</p>	
J054	N.A.	UPM	 <p data-bbox="461 779 703 815">Distill water system</p>	
J055	N.A.	UPM	 <p data-bbox="461 1070 501 1106">TV</p>	
J056	N.A.	UPM	 <p data-bbox="461 1352 571 1388">Laptop 1</p>	
J057	N.A.	UPM	 <p data-bbox="461 1639 571 1675">Laptop 2</p>	
J058	N.A.	UPM	 <p data-bbox="461 1933 644 1968">Chest Freezer</p>	

Sr.	A4	Univ	Photo	Photo
J059	N.A.	UPM	 <p data-bbox="459 488 576 524">TV stand</p>	



# CERTIFICATE OF HANDOVER

To: JICA Malaysia Office


Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (hereinunder referred to as “COSMOS Project”)

This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for *the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture<sup>1</sup>*, have been handed over properly to Universiti Putra Malaysia (UPM), as of

Attached: List of Equipment

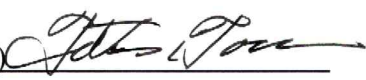
15 MAR 2022, Selangor, Malaysia

(Signature)<sup>2</sup>

  
Prof. Dr. Fatimah Md Yusoff  
Project Manager/ Professor  
Universiti Putra Malaysia

for witness

(Signature)

  
Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
COSMOS Project/ Soka University

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<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]









<sup>2</sup> 受領者（署名者）は、「当該相手国政府等の機関の長又はそれに準ずる者」とする。









**Handover Equipment (without A4 Form) / 供与機材(その他)**

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	JFY	Certificate Handover
C154	N.A.	Chair armrest 01		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C155	N.A.	Chair armrest 02		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C156	N.A.	Chair armrest 03		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C157	N.A.	Chair armrest 04		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C158	N.A.	Chair armrest 05		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C159	N.A.	Chair armrest 06		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C160	N.A.	Chair armrest 07		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C161	N.A.	Chair armrest 08		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C162	N.A.	Chair armrest 09		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C163	N.A.	Chair armrest 10		Blue	Malaysia	ZKK SDN BHD	Local	1		58	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C164	N.A.	Table 01		Steel 1,200 x 600mm	Malaysia	ZKK SDN BHD	Local	1		490	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
C165	N.A.	Table 02		Steel 1,200 x 600mm	Malaysia	ZKK SDN BHD	Local	1		490	UPM		Faculty of agriculture	Demo site	2022	JFY2021	2022/3/15
J060	N.A.	Blower 1	Greenco	2RB410-7AA11 Ring Blower 800w, 2416L/min, 160mbar	Malaysia	ZKK SDN BHD	Local	1		2,450	UPM		Faculty Agriculture	Demo site	2022	JFY2021	2022/3/15
J061	N.A.	Blower 2	Greenco	2RB410-7AA11 Ring Blower 800w, 2416L/min, 160mbar	Malaysia	ZKK SDN BHD	Local	1		2,450	UPM		Faculty Agriculture	Demo site	2022	JFY2021	2022/3/15
			<b>14</b>	<b>Total</b>					<b>0</b>	<b>6,460</b>							

**Handover Equipment (without A4 Form) / (供与機材その他)**

As of 24 February 2022

Sr.	A4	Univ	Photo	Photo
C154	N.A.	UPM	 1	
C155	N.A.	UPM	 2	
C156	N.A.	UPM	 3	
C157	N.A.	UPM	 4	
C158	N.A.	UPM	 5	
C159	N.A.	UPM	 6	
C160	N.A.	UPM	 7	
C161	N.A.	UPM	 8	

Sr.	A4	Univ	Photo	Photo
C162	N.A.	UPM	 9	
C163	N.A.	UPM	 10	
C164	N.A.	UPM	 1	
C165	N.A.	UPM	 2	
J060	N.A.	UPM	 Blower1	
J061	N.A.	UPM	 Blower2	

## CERTIFICATE OF HANDOVER

PROJECT TITLE:

*"CONTINUOUS OPERATION SYSTEM FOR MICROALGAE PRODUCTION OPTIMIZED FOR SUSTAINABLE TROPICAL AQUACULTURE (COSMOS)"*

This is to certify that the equipment in the attached list for above-mentioned project have been handed over properly as of January 4, 2018 to Faculty of Engineering and Life Sciences, Universiti Selangor.



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Mr. Kensuke Fukawa  
Chief Representative  
Japan International Cooperation  
Agency (JICA) Malaysia Office



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Prof. Dr. Mohd Kushairi B. Mohd Rajuddin  
Professor  
Universiti Selangor  
Faculty of Engineering and Life Sciences

*January 4, 2018*

*Malaysia*

## List of Equipment

No.	Name of Item	Qty.	Place of Delivery	Date of Handover
1	Box Furnace 1150°C, VT FURNACE / BF-1150 – 36L	1	LaMBO, UNISEL	Jan. 4, 2018
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

## CERTIFICATE OF HANDOVER

To: JICA Malaysia Office

Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

This certificate of handover is to certify that the equipment in the attached list, *which shall be utilized for the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture*<sup>1</sup>, have been handed over properly to *LaMBo, Universiti Selangor.*, as of September 26, 2019.

Attached: List of Equipment

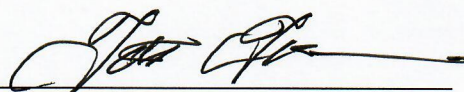
September 26, 2019, Selangor, Malaysia

Attached: List of Equipment



Prof. Dato' Dr. Mohammad Redzuan Othman  
President & Vice Chancellor  
Universiti Selangor

for witness



Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
SATREPS - COSMOS Project/ Soka University

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<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]

## List of Equipment

No.	Name of Item	Qty.	Place of Installation
1	Liquid fractionation system, Custom-made	1	LaMBO, UNISEL
2	TOC Analyzer, Shimadzu TOC-Lcsh	1	LaMBO, UNISEL
3	Ultrapure water equipment, Merck, Milli-Q Integral MT3	1	LaMBO, UNISEL
4	Freeze drier, LABCONCO FZ-6	1	LaMBO, UNISEL
5	Large Centrifuge, Beckman Allegra X-30R	1	LaMBO, UNISEL
6	Multi plate reader, Tecan Infinite M200	1	LaMBO, UNISEL
7	Inverted microscope, Leica DMIL LED	1	LaMBO, UNISEL
8	Deep freezer, REVCO ULT-390-10	1	LaMBO, UNISEL
9	Autoclave, TOMY SX-500	1	LaMBO, UNISEL
10	Environmental Soil quality sensor, Termo STAR A3295	1	LaMBO, UNISEL
11	Multi filtration system for 1 inch & 2 inch filters, Custom-made	1	LaMBO, UNISEL
12	Drying oven, YAMATO DKM-400	1	LaMBO, UNISEL
13	Electric balance, Mettler ME204	1	LaMBO, UNISEL



# CERTIFICATE OF HANDOVER

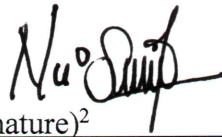
To: JICA Malaysia Office

Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (hereinunder referred to as “COSMOS Project”)

This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for *the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture*<sup>1</sup>, have been handed over properly to LaMBo, Universiti Selangor (UNISEL), as of *25 June 2020*.

Attached: List of Equipment

*25 June 2020*, Selangor, Malaysia



(Signature)<sup>2</sup>

Dr. Nor Suhaila Binti Yaacob  
UNISEL Team Leader/ Director  
Universiti Selangor

for witness



Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
COSMOS Project/ Soka University

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<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]

<sup>2</sup> 受領者（署名者）は、「当該相手国政府等の機関の長又はそれに準ずる者」とする。

## The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (A4 Form) / A4 供与機材**

The items requested by the A4 Form issued 18 August 2016 as well as those items attached to them.

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*2	Qty	Unit price (JPY) *3	Unit price (RM)*4	Univ.:5	Univ. ID	Building	Place	Year	JFY
J203	12	UPS 1. Attached to Mili-Q water	Right Power	Titan Neo P Series, 10KVA, Inputs 110-300V, 15-20 min supply depends on load, SN: 83921711100010	Malaysia	GAIA	Local	1		7,833	UNISEL		LaMBO	Middle	2017	JFY2017
J204	13	UPS 2. Attached to Freeze drier	Right Power	Titan Neo P Series, 10KVA, Inputs 110-300V, 15-20 min supply depends on load, SN: 83921711100011	Malaysia	GAIA	Local	1		7,833	UNISEL		LaMBO	Door 1	2017	JFY2017
J201	22	Computer Desktop 2 (attached to the Multi-plate reader)	HP	ProDesk 400G3 i3-6100 SFF, SN: SGH725TDCY & 3CQ7330WWMK	Malaysia	Win-Tek Solution Sdn. Bhd	Local	1		2,830	UNISEL		LaMBO	Main	2017	JFY2017
J200	55	Clean bench 1	Schoner	4ft Schoner Horizontal Laminar Flow, , Dimesnion: 1200 (W) x850x1800. Model:SHLF-1200, S/N:LQ1607008M.	Malaysia	LabQuip	Local	1		9,169	UNISEL		LaMBO	Door 1	2017	JFY2017
H212	66	Desk Type PH meter	TOA DKK	HM-41X. 784795	Japan		Handover	1	145,800		UNISEL		LaMBO	Main	2017	JFY2017
<b>5</b>	<b>5</b>		<b>5</b>	<b>Total</b>					<b>145,800</b>	<b>27,666</b>						

## The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (without A4 Form) / 供与機材(その他)**

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Date (Purchase)
C200	N.A.	Cylinder regulator for high purity system	Shimadzu	Cylinder with air x 1	Malaysia		Local	1		1,060	UNISEL		LaMBO	Main	2016/01/18
C201	N.A.	Micropipette	Eppendorf	Reference 2, 0.5-5mL	Malaysia		Local	1		1,372	UNISEL		LaMBO	Door 1	2017/10/25
C202	N.A.	Micropipette	Eppendorf	Reference 2, 20-200µL	Malaysia		Local	1		1,372	UNISEL		LaMBO	Door 1	2017/10/25
C203	N.A.	Micropipette	Eppendorf	Reference 2, 100-1,000µL	Malaysia		Local	1		1,372	UNISEL		LaMBO	Door 1	2017/10/25
J202	N.A.	Multi-pipet 3	Eppendorf	Research Plus, 8-channel, 10-100 µL.SN: K55584G	Malaysia	Techno Science Supply	Local	1		3,900	UNISEL		LaMBO	Door 1	2017/10/25
C204	N.A.	Speakerphone 3	YAMAHA	YVC-300, unified communication speakerphone, S/N: S4P059443	Malaysia		Local	1		1,800	UNISEL		LaMBO	COSMOS office	2019/05/09
C205	N.A.	Webcam 3	Logitech	C922 Pro HD Stream Webcam, S/N: 1902LZ0G9MQ9	Malaysia		Local	1		299	UNISEL		LaMBO	COSMOS office	2019/04/22
				<b>Total</b>					0	11,174					

# CERTIFICATE OF HANDOVER

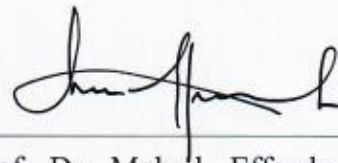
日付不詳：2019年2月  
頃、前任による

To: JICA Malaysia Office

Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

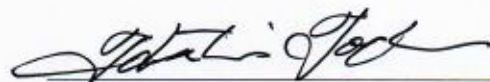
This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for the SATREPS - COSMOS Project, have been handed over properly to Institute of Marine Biotechnology, Universiti Malaysia Terengganu.

Attached: List of Equipment



Prof. Dr. Mohnd. Effendy Bin Abd.  
Wahid  
UMT Team Leader/ Professor  
Universiti Malaysia Terengganu  
Institute of Marine Biotechnology

for witness



Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
SATREPS - COSMOS Project/ Soka University

## List of Equipment

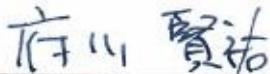
No.	Name of Item	Qty.	Place of Installation
1	High performance liquid chromatography, Shimadzu, Prominence	1	IMB, UMT
2	Fluorescence multi plate reader, Thermo VarioSkan Lux	1	IMB, UMT
3	Inverted fluorescence microscope, Leica DMi8	1	IMB, UMT
4	Gas chromatography FID, Shimadzu GC-2010Plus	1	IMB, UMT
5	Ultrapure water equipment, Merck, Milli-Q Integral MT3	1	IMB, UMT
6	Freeze drier, LABCONCO, FZ-6	1	IMB, UMT
7	Multi thermo incubator, EYELA MTI-202B	2	IMB, UMT
8	Spectroradiometer, Apogee PS100	1	IMB, UMT
9	Incubator, TOMY CLE-305	3	IMB, UMT
10	Stereo microscope, Leica M205C	1	IMB, UMT
11	Deep freezer, REVCO ULT-390-10	1	IMB, UMT
12	Autoclave, TOMY SX-500	1	IMB, UMT
13	Indoor quantum sensor for air and water, Biospherical QSPL-2100	1	IMB, UMT
14	Micro-centrifuge, Beckman Microfuge 20R	1	IMB, UMT
15	Multi filtration system for 2 inch filters, Custom-made	1	IMB, UMT
16	Environmental water quality sensor, HORIBA U-51	1	IMB, UMT
17	Drying oven, YAMATO DKM-400	1	IMB, UMT
18	Liquid nitrogen transfer vessel, Thermo Thermo20	1	IMB, UMT
19	Cryobiological storage vessel, Thermo Bio-Cane20	1	IMB, UMT
20	Electric balance, Mettler ME204	1	IMB, UMT
21	Drying rack, ASONE DS-QD SU-1000	1	IMB, UMT

## CERTIFICATE OF HANDOVER

PROJECT TITLE:

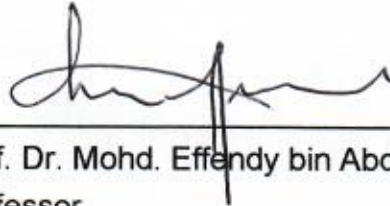
"CONTINUOUS OPERATION SYSTEM FOR MICROALGAE PRODUCTION OPTIMIZED FOR SUSTAINABLE TROPICAL AQUACULTURE (COSMOS)"

This is to certify that the equipment in the attached list for above-mentioned project have been handed over properly as of November 1, 2018 to Institut Bioteknologi Marin, Universiti Malaysia Terengganu.



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Mr. Kensuke Fukawa  
Chief Representative  
Japan International Cooperation  
Agency (JICA) Malaysia Office



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Prof. Dr. Mohd. Effendy bin Abd. Wahid  
Professor  
Universiti Malaysia Terengganu  
Institut Bioteknologi Marin

*November 1, 2018*

*Malaysia*

## List of Equipment

No.	Name of Item	Qty.	Place of Delivery	Date of Handover
1	HIRAYAMA Autoclave, HV-85	1	IBM, UMT	Nov. 1, 2018
2				
3				
4				
5				
6				
7				
8				
9				
10				

## CERTIFICATE OF HANDOVER

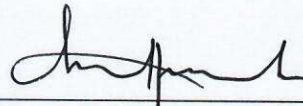
To: JICA Malaysia Office

Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for the *the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture*, have been handed over properly to Institute of Marine Biotechnology, Universiti Malaysia Terengganu, as of November 26, 2019.

Attached: List of Equipment

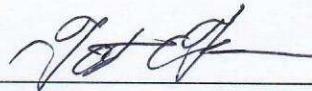
November 26, 2019, Terengganu



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Prof. Dr. Mohd. Effendy Bin Abd. Wahid  
UMT Team Leader/ Professor  
Universiti Malaysia Terengganu  
Institute of Marine Biotechnology

for witness



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Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
SATREPS-COSMOS Project/ Soka University



## List of Equipment

No.	Name of Item	Qty.	Place of Installation
1	Niskin water sampler, 5026-C	1	IMB, UMT
2	Peristaltic pump, Sartorius, VFP002, VFA012	1	IMB, UMT
3	Microplate shaker, Greiner, J849050	1	IMB, UMT

## CERTIFICATE OF HANDOVER

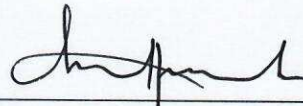
To: JICA Malaysia Office

Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for the *the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture*, have been handed over properly to Institute of Marine Biotechnology, Universiti Malaysia Terengganu, as of November 26, 2019.

Attached: List of Equipment

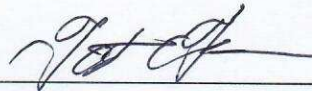
November 26, 2019, Terengganu



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Prof. Dr. Mohd. Effendy Bin Abd. Wahid  
UMT Team Leader/ Professor  
Universiti Malaysia Terengganu  
Institute of Marine Biotechnology

for witness



---

Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
SATREPS-COSMOS Project/ Soka University

## List of Equipment

No.	Name of Item	Qty.	Place of Installation
1	Niskin water sampler, 5026-C	1	IMB, UMT
2	Peristaltic pump, Sartorius, VFP002, VFA012	1	IMB, UMT
3	<del>Microplate shaker, Greiner, J849050</del>	<del>1</del>	IMB, UMT

This item was cancelled to handover as of 1 April 2020.  
 This was NOT procured by the JICA's budget and belongs to Soka University (see attached letter herewith).

山田大

**Masaru YAMADA**  
 JICA Project Coordinator  
 JICA-JST COSMOS Project  
 Institute of Bioscience  
 Universiti Putra Malaysia





Date: 7th October 2016

Prof. Fatimah Md. Yusoff  
Head, Laboratory of Marine Biotechnology  
Institute of Bioscience  
Universiti Putra Malaysia  
43400 UPM, Serdang, Selangor  
Malaysia

Dear Prof. Fatimah

**Re: Charge-free Equipment for SATREPS-COSMOS Project in the Laboratory of Marine Biotechnology, IBS, UPM**

I am pleased to inform you that we agree to lend equipment listed as below for 5 years at no charge for research use in your laboratory of Marine Biotechnology. I hope these instruments will be useful for the project.

Item	Brand /model	Condition	Unit	Cost JPY/RM
Coulter counter	Beckman / Multisizer 3	Used	1	JPY3,000,000 RM 115,384
Microplate shaker	Greiner/J849050	New	2	JPY160,000/ RM 6,513
Air compressor	Straight/17-6016	Used	1	JPY180,000/ RM 6,923
Pulse amplitude modulation	Walz/Water-PAM	Used	1	JPY3,500,000/RM RM 134,615

Best wishes.

Tatsuki Toda, PhD  
Professor  
Dean of Graduate School of Engineering  
Soka University

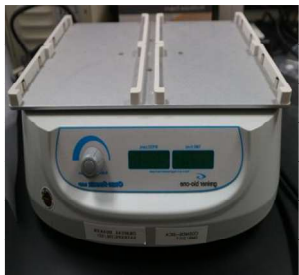
Department of Science and Engineering  
for Sustainable Innovation  
Faculty of Science and Engineering  
SOKA University  
1-236, Tangi-cho, Hachioji-shi,  
Tokyo, 192-8577, JAPAN

[www.soka.ac.jp/](http://www.soka.ac.jp/)

### Procured Equipment


#### Lending Items from Japanese Univs. In response to the A4 Form/ 大学独自対応

As of 2 May 2020

Sr.	A4	Univ	Photo	Note
H327	60	UMT		For details, kindly discuss later with Soka University.

## List of Equipment

No.	Name of Item	Qty.	Place of Installation
1	Niskin water sampler, 5026-C	1	IMB, UMT
2	Peristaltic pump, Sartorius, VFP002, VFA012	1	IMB, UMT
3	<del>Microplate shaker, Greiner, J849050</del>	<del>1</del>	IMB, UMT



This item was cancelled to handover as of 1 April 2020.  
This was NOT procured by the JICA's budget and belongs to Soka University (see attached letter herewith).

# CERTIFICATE OF HANDOVER

To: JICA Malaysia Office

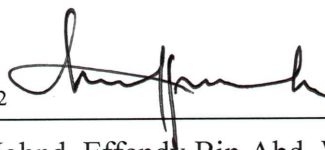
Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (hereinunder referred to as “COSMOS Project”)

This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for *the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture*<sup>1</sup>, have been handed over properly to Universiti Malaysia Terengganu (UMT), as of 25 June 2020.

Attached: List of Equipment

25 June 2020, Terengganu, Malaysia

(Signature)<sup>2</sup>



Prof. Dr. Mohnd. Effendy Bin Abd. Wahid  
UMT Team Leader/ Professor  
Universiti Malaysia Terengganu  
Institute of Marine Biotechnology

for witness

(Signature)



Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
COSMOS Project/ Soka University

<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]

<sup>2</sup> 受領者（署名者）は、「当該相手国政府等の機関の長又はそれに準ずる者」とする。

## The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (A4 Form) / A4 供与機材**

The items requested by the A4 Form issued 18 August 2016 as well as those items attached to them.

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*2	Qty	Unit price (JPY) *3	Unit price (RM)*4	Univ.:5	Univ. ID	Building	Place	Year	JFY
C300	32	Adapter	Beckman coulter	For 15mL conical	Malaysia		Local	1		286	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
C309	71	Printer	HP	Deskjet ink 4729 all-in-one printer, SN:	Malaysia	Data plus marketing	Local	1		415	UMT		Kompleks Makmal	COSMOS office	2016	JFY2016
J301	56	Crossflow concentrator (Laboratory Cross Flow)	Sartorius	Vivaflow 200, 0.2µm membrane, Sartorius, VF20P7	Malaysia	GAIA	Local	1		2,714	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J302	61	Plankton net 1	RIGO	RIGO 5546-PA	Malaysia	GAIA	Local	1		7,346	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J303	61	Plankton net 2	RIGO	RIGO 5546-PA	Malaysia	GAIA	Local	1		7,346	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J306	55	Clean bench 2	Schoner	4ft Schoner Horizontal Laminar Flow, Dimesnion: 1200 (W) x850x1800. Model:SHLF-1200, S/N:LQ1607009M	Malaysia	LabQuip	Local	1		11,170	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J308	8	Computer Desktop 3 (for Fluorescence Multi Plate reader)	HP	ProDesk 400G3 i3-6100 SFF, SN: SGH725TDCW & 3CQ7330X50	Malaysia	Win-Tek Solution Sdn. Bhd	Local	1		2,830	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J309	32	Rotor	Beckman Coulter	C0650 Angle Rotor	Malaysia	Straits Scientific SDN BHD	Local	1		14,692	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J310	19	UPS 3 attached to the Incubator	Right Power	Titan Neo P Series, 10KVA, Inputs 110-300V, 15-20 min supply depends on load, SN: 1SR7Y3000004	Malaysia	GAIA	Local	1		9,116	UMT		Kompleks Makmal	COSMOS Lab	2018	JFY2018
J311	19	UPS 4 attached to the Incubator	Right Power	Titan Neo P Series, 10KVA, Inputs 110-300V, 15-20 min supply depends on load, SN: 1SR7Y3000005	Malaysia	GAIA	Local	1		9,116	UMT		Kompleks Makmal	COSMOS Lab	2018	JFY2018
J312	57	Gas burner	Asone	6-471-01, GB-2001	Malaysia		Local	1		392	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2016
<b>11</b>	<b>11</b>		<b>11</b>	<b>Total</b>					<b>0</b>	<b>65,423</b>						



## The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (without A4 Form) / 供与機材(その他)**

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Date (Purchase)
C302	N.A.	Fridge	Panasonic	2-door, 7VS400061	Malaysia		Local	1		1,344	UMT		Kompleks Makmal	COSMOS Lab	2017/03/14
C303	N.A.	Fridge	Sharp	SJE535M-BK, M171009292	Malaysia		Local	1		1,800	UMT		Kompleks Makmal	COSMOS Lab	2017/12/13
C310	N.A.	Regulator	Shimadzu	For Ca gas cylinders (Ba-1H 002637)	Malaysia	Shimadzu Malaysia	Local	1		1,060	UMT		Kompleks Makmal	COSMOS Lab	2017/02/20
C311	N.A.	Regulator	Shimadzu	For H2 gas cylinders (Ba-1H 002644)	Malaysia	Shimadzu Malaysia	Local	1		1,060	UMT		Kompleks Makmal	COSMOS Lab	2017/02/20
C312	N.A.	Regulator	Shimadzu	For He gas cylinders (Ba-1H 002639)	Malaysia	Shimadzu Malaysia	Local	1		1,060	UMT		Kompleks Makmal	COSMOS Lab	2017/02/20
C314	N.A.	Speakephone 2	YAMAHA	YVC-300, unified communication speakerphone, S/N: S4P059442	Malaysia		Local	1		1,800	UMT		Kompleks Makmal	COSMOS office	2019/05/09
C315	N.A.	Webcam 2	Logitech	C922 Pro HD Stream Webcam, S/N: 1902LZ0G9MT9	Malaysia		Local	1		299	UMT		Kompleks Makmal	COSMOS office	2019/04/22
C316	N.A.	Book (Electronic copy)	Acade05c Press	Identify Marin Phytoplankton, Carmelo R. Tomas. Electronic copy (PDF)	Malaysia	GAIA	Local	1		986	UMT		IMB	Lab	2017/01/31
J304	N.A.	Flow meter 1	RIGO	RIGO 5571-B, Serial No. 4041	Malaysia	GAIA	Local	1		4,166	UMT		Kompleks Makmal	COSMOS Lab	2017/1/24
J305	N.A.	Flow meter 2	RIGO	RIGO 5571-B, Serial No. 4042	Malaysia	GAIA	Local	1		4,166	UMT		Kompleks Makmal	COSMOS Lab	2017/1/24
J307	N.A.	Multi-pipet 1	Gilson	PipetmanL FA10013. Multi 8- channel, 0.5-10 $\mu$ L.	Malaysia	GAIA	Local	1		4,971	UMT		Kompleks Makmal	COSMOS Lab	2017/9/14
				<b>Total</b>					0	22,712					

The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

### Handover Equipment (A4 Form) / A4 供与機材

The items requested by the A4 Form issued 18 August 2016 as well as those items attached to them.

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*2	Qty	Unit price (JPY) *3	Unit price (RM)*4	Univ.:5	Univ. ID	Building	Place	Year	JFY
C300	32	Adapter	Beckman coulter	For 15mL conical	Malaysia		Local	1		286	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
C309	71	Printer	HP	Deskjet ink 4729 all-in-one printer, SN:	Malaysia	Data plus marketing	Local	1		415	UMT		Kompleks Makmal	COSMOS office	2016	JFY2016
J301	56	Crossflow concentrator (Laboratory Cross Flow)	Sartorius	Vivaflow 200, 0.2µm membrane, Sartorius, VF20P7	Malaysia	GAIA	Local	1		2,714	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J302	61	Plankton net 1	RIGO	RIGO 5546-PA	Malaysia	GAIA	Local	1		7,346	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J303	61	Plankton net 2	RIGO	RIGO 5546-PA	Malaysia	GAIA	Local	1		7,346	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J306	55	Clean bench 2	Schoner	4ft Schoner Horizontal Laminar Flow, Dimesnion: 1200 (W) x850x1800. Model:SHLF-1200, S/N:LQ1607009M	Malaysia	LabQuip	Local	1		11,170	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J308	8	Computer Desktop 3 (for Fluorescence Multi Plate reader)	HP	ProDesk 400G3 i3-6100 SFF, SN: SGH725TDCW & 3CQ7330X50	Malaysia	Win-Tek Solution Sdn. Bhd	Local	1		2,830	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J309	32	Rotor	Beckman Coulter	C0650 Angle Rotor	Malaysia	Straits Scientific SDN BHD	Local	1		14,692	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2017
J310	19	UPS 3 attached to the Incubator	Right Power	Titan Neo P Series, 10KVA, Inputs 110-300V, 15-20 min supply depends on load, SN: 1SR7Y3000004	Malaysia	GAIA	Local	1		9,116	UMT		Kompleks Makmal	COSMOS Lab	2018	JFY2018
J311	19	UPS 4 attached to the Incubator	Right Power	Titan Neo P Series, 10KVA, Inputs 110-300V, 15-20 min supply depends on load, SN: 1SR7Y3000005	Malaysia	GAIA	Local	1		9,116	UMT		Kompleks Makmal	COSMOS Lab	2018	JFY2018
J312	57	Gas burner	Asone	6-471-01, GB-2001	Malaysia		Local	1		392	UMT		Kompleks Makmal	COSMOS Lab	2017	JFY2016
<b>11</b>	<b>11</b>		<b>11</b>	<b>Total</b>					<b>0</b>	<b>65,423</b>						

## The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (without A4 Form) / 供与機材(その他)**

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Date (Purchase)
C302	N.A.	Fridge	Panasonic	2-door, 7VS400061	Malaysia		Local	1		1,344	UMT		Kompleks Makmal	COSMOS Lab	2017/03/14
C303	N.A.	Fridge	Sharp	SJE535M-BK, M171009292	Malaysia		Local	1		1,800	UMT		Kompleks Makmal	COSMOS Lab	2017/12/13
C310	N.A.	Regulator	Shimadzu	For Ca gas cylinders (Ba-1H 002637)	Malaysia	Shimadzu Malaysia	Local	1		1,060	UMT		Kompleks Makmal	COSMOS Lab	2017/02/20
C311	N.A.	Regulator	Shimadzu	For H2 gas cylinders (Ba-1H 002644)	Malaysia	Shimadzu Malaysia	Local	1		1,060	UMT		Kompleks Makmal	COSMOS Lab	2017/02/20
C312	N.A.	Regulator	Shimadzu	For He gas cylinders (Ba-1H 002639)	Malaysia	Shimadzu Malaysia	Local	1		1,060	UMT		Kompleks Makmal	COSMOS Lab	2017/02/20
C314	N.A.	Speakephone 2	YAMAHA	YVC-300, unified communication speakerphone, S/N: S4P059442	Malaysia		Local	1		1,800	UMT		Kompleks Makmal	COSMOS office	2019/05/09
C315	N.A.	Webcam 2	Logitech	C922 Pro HD Stream Webcam, S/N: 1902LZ0G9MT9	Malaysia		Local	1		299	UMT		Kompleks Makmal	COSMOS office	2019/04/22
C316	N.A.	Book (Electronic copy)	Acade05c Press	Identify Marin Phytoplankton, Carmelo R. Tomas. Electronic copy (PDF)	Malaysia	GAIA	Local	1		986	UMT		IMB	Lab	2017/01/31
J304	N.A.	Flow meter 1	RIGO	RIGO 5571-B, Serial No. 4041	Malaysia	GAIA	Local	1		4,166	UMT		Kompleks Makmal	COSMOS Lab	2017/1/24
J305	N.A.	Flow meter 2	RIGO	RIGO 5571-B, Serial No. 4042	Malaysia	GAIA	Local	1		4,166	UMT		Kompleks Makmal	COSMOS Lab	2017/1/24
J307	N.A.	Multi-pipet 1	Gilson	PipetmanL FA10013. Multi 8- channel, 0.5-10 $\mu$ L.	Malaysia	GAIA	Local	1		4,971	UMT		Kompleks Makmal	COSMOS Lab	2017/9/14
				<b>Total</b>					0	22,712					

# CERTIFICATE OF HANDOVER

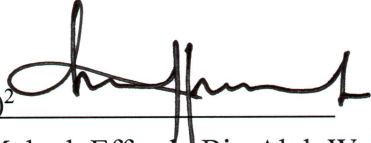
To: JICA Malaysia Office

Re: The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (hereinunder referred to as “COSMOS Project”)


This certificate of handover is to certify that the equipment in the attached list, which shall be utilized for *the Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture*<sup>1</sup>, have been handed over properly to Universiti Malaysia Terengganu (UMT), as of **02 NOV 2020**

Attached: List of Equipment

**02 NOV 2020**, Terengganu, Malaysia

(Signature)<sup>2</sup>   
Prof. Dr. Mohnd. Effendy Bin Abd. Wahid  
UMT Team Leader/ Professor  
Universiti Malaysia Terengganu  
Institute of Marine Biotechnology

for witness

(Signature)   
Prof. Dr. Tatsuki Toda  
Project Leader/ Professor  
COSMOS Project/ Soka University

<sup>1</sup> 供与機材の場合を想定。事業用物品（旧携行機材、旧調査用機材等）を物品管理細則第 20 条に基づき譲与する場合は以下のとおり。

which had been utilized for the Project [insert Project Name]

<sup>2</sup> 受領者（署名者）は、「当該相手国政府等の機関の長又はそれに準ずる者」とする。

The Project for Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture (COSMOS)

**Handover Equipment (without A4 Form) / 供与機材(その他)**

PS	A4 No.*1	Item	Make	Model/Specification	Proc	Supplier	Budget*1	Qty	Unit price (JPY)*2	Unit price (RM)	Institution	Univ. ID	Building	Place	Year	Certificate Handover	Purchase (YYYY/MM/DD)
C317	N.A.	Book (reference) 1		"Identifying Marine Phytoplankton", hard copy	Malaysia	KOPERASI UPM BERHAD	Local	1		409	UMT		Kompleks Makmal		2020	2020/11/2	2020/8/4
C318	N.A.	Book (reference) 2		"Identifying Marine Phytoplankton", hard copy	Malaysia	KOPERASI UPM BERHAD	Local	1		409	UMT		Kompleks Makmal		2020	2020/11/2	2020/8/4
			<b>2</b>	<b>Total</b>					<b>0</b>	<b>818</b>							

**Handover Equipment (without A4 Form) / (供与機材その他)**

As of 2 November 2020

Sr.	A4	Univ	Photo	Photo
C317	N.A.	UMT		<p>Book titled "Identifying Marine Phytoplankton", Hard copy</p>
C318	N.A.	UMT		<p>Book titled "Identifying Marine Phytoplankton", Hard copy</p>

## Renovation/ Rehabilitation of Infrastructure

No.	Procured (YYYY/MM)	Theme	Item	Renovation Construction/ demo materials	耐用年数	Site	Details
10	2019/12	3	Water tanks with the rid (2 units).	Provision (construction/ demonstration material)	5	UPM, demo site	Dimension: Diameter 10 ft X H 6 ft with slope bottom (6") Capacity 14.5 (between 13 and 15 ton). Durable for fresh water and sea water
11	2020/01	3 and 4	Gabion. Front side	Provision (construction/ demonstration material)	10	UPM, demo site	Gabion cage: Dimension: 1m x 1m x 1m. Material: galvanized wire. (30 pcs), Stones (30 cubic meters)
12	2020/02	3 and 4	Gabion. Rear side	Provision (construction/ demonstration material)	10	UPM, demo site	Gabion cage: Dimension: 1m x 1m x 1m. Material: galvanized wire. (15 pcs), Stones (15 cubic meters).
13	2020/02	3 and 4	Gate	Provision (construction/ demonstration material)	10	UPM, demo site	Sliding Door Gate: Steel, Black paint, Size: 26ft (L) x 5ft (H). Square Frame: 3.5 inch (Width) x 1.5inch (Thickness). Swing Door Gate, Steel, Black Paint, Size: 3ft(L) x 5ft(H)., cement 10 bags and sand
14	2020/02	3 and 4	Fence	Provision (construction/ demonstration material)	10	UPM, demo site	RSA Fence (Anti Climb). Galvanized. Size: 1.5m(H) x 2.4m(W). 5mm (Wire Diameter), 36 PCS. Ultragal Round Post c/w Cap, U Clip, Bolts & Nuts. Galvanized. Size: 2m (L) x 60mm (D), 39 PCS.
15	2020/06	3 and 4	Fence (riverside)	Provision (construction/ demonstration material)	10	UPM, demo site	RSA Fence (Anti Climb). Galvanized. Size: 1.5m(H) x 2.4m(W). 5mm (Wire Diameter), 25 PCS. Ultragal Round Post c/w Cap, U Clip, Bolts & Nuts. Galvanized. Size: 2m (L) x 60mm (D), 25 PCS.
16	2020/06	4	Platform for (sea) water tank	Provision (construction/ demonstration material)	10	UPM, demo site	Ready-Mix Concrete (G30N) Size Platform: 7m x 4.5m x 8" (7 cubic meters), Steel Mesh BRC A10 Size: 6'x 12' (6 pcs)
17	2020/07	3 and 4	Signage	Provision (construction/ demonstration material)	10	UPM, demo site	Size: 5ft x 6ft
19	2020/10	3	Pavement behind	Provision (construction/ demonstration material)	10	UPM, demo site	Tarmac 21 cubic meters for the pavement of the working area around the poor and part of the parking area. Appx 22.91m x 5.85 m (134 plus 50 square meters)
20	2020/10	4	Pavement front	Provision (construction/ demonstration material)	10	UPM, demo site	Tarmac 23 cubic meters for the pavement of the off-loading and parking area. 22.91m x 13.94 m (256 minus 50 square meters)
20	2020/10	4	Drain cover	Provision (construction/ demonstration material)	10	UPM, demo site	30 pcs, size: 2ft x 9inch, load test of 1 ton, c/w hot deep galvanized
21	2020/12	4	Ammonia traps	Provision (construction/ demonstration material)	3	UPM, demo site	Fabricating the instrument
22	2020/12	4	Modification (Outdoor large-scale nutrient recycle system)	Provision (construction/ demonstration material)	3	UPM, demo site	Modifying the reactor (duct horse), installing connecting pipes, valves, gauges, and instruments, anchoring the air tank and turning roll.
23	2020/12	4	Pipes, connectors, pump	Provision (construction/ demonstration material)	3	UPM, demo site	Pipes, connectors, pump for sludge water re-use
24	2021/03	3 and 4	Additional power points	Provision (construction/ demonstration material)	5	UPM, demo site	Additional power connection points for Theme 3 and 4 reactor. 3 phase 200V; Single phase 100 and 240V
25	2021/03	4	Solenoid valve and slope	Provision (construction/ demonstration material)	10	UPM, demo site	Solenoid valve and slope for de-watering system.
26	2021/09	4	Rain guard entrance side	Renovation	5	UPM, demo site	Polycarbonate Angular 10ft x 3ft. KIM Deck Metal Roofing (G26) Mild Steel Square Hollow (6m) Trolley Track, Angle Iron
27	2021/10	4	Rain guard river side	Renovation	5	UPM, demo site	Polycarbonate Angular 10ft x 3ft. KIM Deck Metal Roofing (G26) Mild Steel Square Hollow (6m)
28	2021/11/15	3	Conecting pipes and fitting from the seawater tank to the nutrient tanks	Provision (construction/ demonstration material)	5	UPM, demo site	ABS Pipe 25mm (20 feet) 20 pcs, sockets , elbows, JEBO Aquarium UV Sterilizer, UPS Outdoor housing and etc

## Renovation/ Rehabilitation of Infrastructure

No.	Procured (YYYY/MM)	Theme	Item	Renovation Construction/ demo materials	耐用年数	Site	Details
01	2017/01	3 and 4	Laboratory partition	Renovation	10	UPM, Faculty of Agriculture, MPU	Renovation. Installing the partition to divide the lab into two section. Material: gypsum board (12mm thickness), half glass door (6.9ft x 2.7ft) and installation fee. (Nadi Lab Solutions)
02-1	2017/01	3 and 4	Free Standing Cabinet	Renovation	10	UPM, Faculty of Agriculture, MPU	Drawer (2), Door (1), Dimension: 0.9M (L) X 0.45M (W) X 0.88M (H)
02-10	2017/01	3 and 4	Wall Hanging Cabinet 8	Renovation	10	UPM, Faculty of Agriculture, MPU	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X <u>0.9M</u> (H)
02-11	2017/01	3 and 4	Wall Hanging Cabinet 9	Renovation	10	UPM, Faculty of Agriculture, MPU	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X <u>0.9M</u> (H)
02-12	2017/01	3 and 4	Wall Hanging Cabinet 10	Renovation	10	UPM, Faculty of Agriculture, MPU	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X <u>0.9M</u> (H)
02-2	2017/01	3 and 4	Island bench (pedestal system)	Renovation	10	UPM, Faculty of Agriculture, MPU	Dimension: 4.12M (L) X 1.5M (W) X 0.9M (H)
02-3	2017/01	3 and 4	Wall Hanging Cabinet 1	Renovation	10	UPM, Faculty of Agriculture, MPU	2 Swing metal doors. Dimension: 0.6M (L) X 0.35M (W) X 0.6M (H)
02-4	2017/01	3 and 4	Wall Hanging Cabinet 2	Renovation	10	UPM, Faculty of Agriculture, MPU	2 Swing metal doors. Dimension: 0.6M (L) X 0.35M (W) X 0.6M (H)
02-5	2017/01	3 and 4	Wall Hanging Cabinet 3	Renovation	10	UPM, Faculty of Agriculture, MPU	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X 0.6M (H)
02-6	2017/01	3 and 4	Wall Hanging Cabinet 4	Renovation	10	UPM, Faculty of Agriculture, MPU	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X 0.6M (H)
02-7	2017/01	3 and 4	Wall Hanging Cabinet 5	Renovation	10	UPM, Faculty of Agriculture, MPU	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X 0.6M (H)
02-8	2017/01	3 and 4	Wall Hanging Cabinet 6	Renovation	10	UPM, Faculty of Agriculture, MPU	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X 0.6M (H)
02-9	2017/01	3 and 4	Wall Hanging Cabinet 7	Renovation	10	UPM, Faculty of Agriculture, MPU	2 Swing metal doors. Dimension: <u>0.9M</u> (L) X 0.35M (W) X <u>0.9M</u> (H)
03	2017/01	3 and 4	Island Bench	Renovation	10	UPM, Faculty of Agriculture, MPU	Dimension : 3.962M (L) x 1.22M (D) x 0.9M (H), frame structure, coated galvanized iron. Table top : Phenolic top ラボ作業台2(特注) (Nadi Lab Solutions)
04	2019/09	3 and 4	Cement etc for concrete floor and pond repair	Provision (construction/ demonstration material)	5	UPM, demo site	In-kind support for UPM. Providing the construction materials, the construction and its management was handled by the UPM project team.
05	2019/09	3 and 4	Roofing material (steel) for the demo site shade	Provision (construction/ demonstration material)	5	UPM, demo site	In-kind support for UPM. Providing the construction materials, the construction and its management was handled by the UPM project team.
06	2019/11	3 and 4	Roofing material (polycarbonate) for the demo site shade	Provision (construction/ demonstration material)	5	UPM, demo site	In-kind support for UPM. Providing the construction materials, the construction and its management was handled by the UPM project team.
07	2019/11	3 and 4	I-beam for sustaining the handover equipment (Outdoor large-scale nutrient	Provision (construction/ demonstration material)	5	UPM, demo site	In-kind support for UPM. Providing the construction materials, the construction and its management was handled by the UPM project team.
08	2019/11	3 and 4	Crush run for pavement (parking and access for 10 ton trucks)	Provision (construction/ demonstration material)	5	UPM, demo site	In-kind support for UPM. Providing the construction materials, the construction and its management was handled by the UPM project team.
09	2019/12	3	Platform for (sea) water tank	Provision (construction/ demonstration material)	10	UPM, demo site	Ready-Mix Concrete (G30N) Size Platform: 7m x 4.5m x 8" (7 cubic meters), Steel Mesh BRC A10 Size: 6'x 12' (6 pcs)






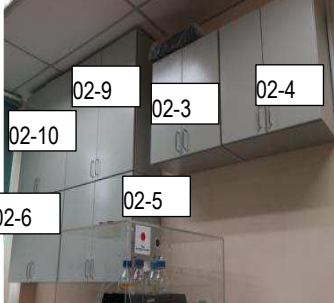














## Renovation/ Rehabilitation of Infrastructure

No.	Procured (YYYY/MM)	Theme	Item	Renovation Construction/ demo materials	耐用年数	Site	Details
29	2022/01/25	3	Rain guard for the centrifuge and nutrient tanks	Provision (construction/ demonstration material)	5	UPM, demo site	PVC Strip Curtain (Transparent). Size: 200mm (W) x 2mm (T). Bracket: Adjustable Aluminium, Overlap: 50mm, Opening: 21ft (L) x 9ft (H)
30	2022/02/19	3	Roofing materials for algae culture	Provision (construction/ demonstration material)	5	UPM, demo site	Mild Steel Square Hollow 4"x4"x1.6mm (1pcs); 3"x2"x1.6mm (4pcs); 2x2x1.6mm (3pcs); 11/2"x11/2"x1.6mm (3pcs); metal roofing 10ft; transparent roofing 10ft; gutter plastic; PVC pipe 3"; Chequered Plate 3mmT; Mild steel plate (Footing -8"x8"x6mm); Neoprene cable (Lapp 2.5mm x 4 Core) 40meter/Roll.
31	2022/01/08	3 and 4	Storage	Provision (construction/ demonstration material)	5	UPM, demo site	Cream Color, Size: 20'(L)x10'(W)x8 1/2'(H). Material: external wall & roof wall: 1mm/t MS PLATE; Internal wall & ceiling: 3.6mm/t PVC Plywood; flooring: 2"x3" hollow section and HW timber/12mm/t plywood/ vinyl sheet.











**Renovation/ Rehabilitation of Facility/施設整備**

As of 24 February 2022










Sr. No	Univ	Bld	Photos	Photos
01	UPM	Faculty Agriculture	 Laboratory partition	
02-1	UPM	Faculty Agriculture	 Free standing cabinet	
02-2	UPM	Faculty Agriculture	 Island bench (pedestal system)	
02-3 -12	UPM	Faculty Agriculture	 Cupboard (Cabinet)	
03	UPM	Faculty Agriculture	 Island Bench	







Sr. No	Univ	Bld	Photos	Photos
04	UPM	Demo site	 <p>Cement for concrete floor and pond</p>	
				
05	UPM	Demo site	 <p>Roofing material - metal</p>	
06	UPM	Demo site	 <p>Roofing material – polycarbonate</p>	
07	UPM	Demo site	 <p>I-beam</p>	

Sr. No	Univ	Bld	Photos	Photos
08	UPM	Demo site	 <p>Crush run for pavement and embankment</p>	
09	UPM	Demo site	 <p>Platform</p>	
10	UPM	Demo site	 <p>Water tank</p>	
11	UPM	Demo site		Gabion front
12	UPM	Demo site		Gabion rear

Sr. No	Univ	Bld	Photos	Photos
13	UPM	Demo site	 <p>Gate front</p>	 <p>Gate rear</p>
14	UPM	Demo site	 <p>Fence front</p>	 <p>Fence rear</p>
15	UPM	Demo site	 <p>Fence riverside</p>	
16	UPM	Demo site		
17	UPM	Demo site		
18	UPM	Demo site	 <p>Pavement front</p>	

Sr. No	Univ	Bld	Photos	Photos
19	UPM	Demo site	 <p>Pavement behind</p>	
20	UPM	Demo site	 <p>Drain cover</p>	
21	UPM	Demo site	 <p>Ammonia traps</p>	
22	UPM	Demo site	 <p>Modification (Outdoor large-scale nutrient recycle system)</p>	
22	UPM	Demo site		
23	UPM	Demo site	 <p>Pipes and pump for sludge water</p>	

Sr. No	Univ	Bld	Photos	Photos
24	UPM	Demo site	 <p>Power connection point for Theme 3</p> <p>Stabilizer procured formerly</p>	 <p>Inside</p>
24	UPM	Demo site	 <p>Power connection point for Theme 3</p>	 <p>Inside</p>
25	UPM	Demo site	<p>Slope</p> 	
26	UPM	Demo site	 <p>Rain guard entrance side</p>	
27	UPM	Demo site	 <p>Rain guard riverside</p>	
28	UPM	Demo site	 <p>Piping from the seawater tank to nutrient tank</p>	 <p>UPS Hosing/ Pump</p>

Sr. No	Univ	Bld	Photos	Photos
29	UPM	Demo site	 <p>Rain guard pond side</p>	
30	UPM	Demo site		
31	UPM	Demo site		

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## Land, Building, Office, and Facilities provided by the Malaysian side

No.	From	To	Item	Univ.	Site	Component
1	2016	2020	Project office (2 rooms)	UPM	IBS, L4	Office space for the JICA project coordinator
2	2019	2020	Project office (for Leader)	UPM	Faculty of Agriculture, L2	Office space for the Leader and Japanese researchers
3	2016	2020	Labs	UPM	IBS	Located some handed over equipment
4	2016	2020	MPU, General research Lab	UPM	Faculty of Agriculture, L1	Located some handed over equipment
5	2016	2020	Aquatic Bioproduct Lab	UPM	Faculty of Agriculture, L2	Located some handed over equipment
6	2016	2020	Lab	UPM	Puchon campus	Located some handed over equipment
7	2018?	2020	Demonstration site (Demo site)	UPM	Faculty of Agriculture	Prepared by the matching fund
8	2016	2020	COSMOS office	UNISEL	LaMBO	Office space for the Japanese researchers
9	2016	2020	Lab	UNISEL	LaMBO	Located some handed over equipment
10	Every year		Venue for the JCC and PMC meetings			The Project Management Committee (PMC) meeting is held prior to the Joint Coordinating Committee (JCC) meeting every year. The respective Univ. in Malaysia hosted these event in turn.
11	2016	2020	COSMOS office	UMT	Kompleks Makmal	Office space for the Japanese researchers
12	2016	2020	COSMOS Lab	UMT	Kompleks Makmal	Located some handed over equipment

**Table. JICA's Expenditure in JPY\*1**

**As of 7 January 2022**

**Unit: JPY**

Breakdown/ Period		Term1	Term2	Term3	Term4 (apprx)		Total	
		(2016/7/26 - 2017/7/25)	(2017/7/26 - 2018/7/25)	(2018/7/26 - 2019/11/25)	(2019/1/26 - 2022/3/24)			
Service contract between JICA headquarters and Soka Univ.	Dispatching Japanese reserchers to Malaysia	9,165,325	5,488,753	7,404,084	<u>7,999,804</u>		<b>30,057,966</b>	
	Training in Japan - Acceptnace of Mayaisan researchers	1,577,784	2,304,071	264,686	<u>351,700</u>		<b>4,498,241</b>	
	Handover equipment*1 including shipping and handling fee	155,631,721	23,388,639	8,820,903	<u>20,541,494</u>		<b>208,382,757</b>	
	Miscellaneous (邦人研究者渡航、本邦研修、供与機材以外の支出)	1,787,099	1,236,155	1,796,016	<u>2,265,686</u>		<b>7,084,956</b>	
	<b>Sub-total (A) 精算額</b>	<b>168,161,929</b>	<b>32,417,618</b>	<b>18,285,689</b>	<b><u>31,158,684</u></b>		<b>250,023,920</b>	
Local cost in Malaysia	<b>Breakdown/ Period</b>	<b>JFY2016</b>	<b>JFY2017</b>	<b>JFY2018</b>	<b>JFY2019</b>	<b>JFY2020</b>	<b>JFY2021</b>	
	Local cost in Malayisa (B)*2	8,116,256	9,164,495	7,749,736	7,639,276	5,846,440	7,286,624	<b>45,802,827</b>
	<b>Total (C=A+B)</b>	<b>8,116,256</b>	<b>177,326,424</b>	<b>40,167,354</b>	<b>25,924,965</b>	<b>37,005,124</b>	<b>7,286,624</b>	<b>295,826,747</b>

Note: SATREPS scheme is the five-year duration with maximum allocation of JPY300 million. This value excludes the cost for dispatching the JICA expert(s), i.e. coordinator

**Table. JICA's Expenditure in RM\*3**

**Unit: RM**

Breakdown/ Period*2		Term1	Term2	Term3	Term4 (apprx)		Total	
		(2016/7/26 - 2017/7/25)	(2017/7/26 - 2018/7/25)	(2018/7/26 - 2019/11/25)	(2019/1/26 - 2022/3/24)			
Exchange rate (RM1 =JPY)		25.4	26.9	27.0	26.1	26.0	26.0	
Service contract between JICA headquarters and Soka Univ.	Dispatching Japanese reserchers to Malaysia*3	0	340,718	203,287	283,681	<u>307,685</u>	<b>1,135,372</b>	
	Training in Japan - Acceptnace of Mayaisan researchers	0	58,654	85,336	10,141	<u>13,527</u>	<b>167,658</b>	
	Handover equipment*1 including shipping and handling fee*2	0	5,785,566	866,246	337,966	<u>790,057</u>	<b>7,779,835</b>	
	Miscellaneous*3	0	66,435	45,784	68,813	<u>87,142</u>	<b>268,173</b>	
	<b>Sub-total (A)*3</b>	<b>0</b>	<b>6,251,373</b>	<b>1,200,653</b>	<b>5,000,000</b>	<b><u>1,198,411</u></b>	<b>13,650,436</b>	
Local cost in Malaysia	<b>Breakdown/ Period</b>	<b>JFY2016</b>	<b>JFY2017</b>	<b>JFY2018</b>	<b>JFY2019</b>	<b>JFY2020</b>	<b>JFY2021</b>	
	Local cost in Malayisa (B)*4	314,121	350,874	284,102	291,117	234,301	272,571	<b>1,747,086</b>
	<b>Total (C=A+B)</b>	<b>314,121</b>	<b>6,602,247</b>	<b>1,484,754</b>	<b>5,291,117</b>	<b>1,432,712</b>	<b>272,571</b>	<b>15,397,522</b>

**Note:** \*1 Indicative figures shared by JICA for the monitoring prupose. \*2 Transferred and disbursed amount (在外事業強化費). \*3 Converted values with the respective exchange rates. \*4 Quoted from the project accounting book (coordinator).

Exchange Rate and Local Execution from August 2016 to March 2021

Y	M	JICA exchange rate (1RM=Yen)	Execution (RM)		Transferred (Yen)* 委嘱額	
2016	8	25.90070	4,258	7,906	199,954	296,016
2016	9	25.27960	3,647		96,062	
2016	10	24.36180	4,521	46,589	97,447	2,754,227
2016	11	24.96020	9,893		99,841	
2016	12	25.22880	32,175		2,556,939	
2017	1	26.23583	75,638	259,627	4,981,004	4,981,004
2017	2	26.01066	123,522			
2017	3	25.28834	60,466			
<b>JFY2016 TOTAL</b>		<b>25.4</b>	<b>314,121</b>	<b>314,121</b>	<b>8,031,247</b>	<b>8,031,247</b>
2017	4	25.14829	5,434	37,812	3,596,205	3,596,205
2017	5	25.57760	17,714			
2017	6	26.07185	14,664			
2017	7	26.12332	11,511	108,778	620,333	620,333
2017	8	25.87824	24,340			
2017	9	25.55487	72,927			
2017	10	26.72799	36,723	172,361	4,610,519	4,610,519
2017	11	26.81804	39,728			
2017	12	27.11370	95,910			
2018	1	27.77009	1,956	31,923	337,438	337,438
2018	2	28.06665	2,926			
2018	3	27.33350	27,042			
<b>2017 TOTAL</b>		<b>26.5</b>	<b>350,874</b>	<b>350,874</b>	<b>9,164,495</b>	<b>9,164,495</b>
2018	4	27.49760	11,805	62,108	2,000,725	2,000,725
2018	5	27.91856	44,400			
2018	6	27.32849	5,902			
2018	7	27.34819	4,642	60,513	1,745,826	1,746,401
2018	8	27.36490	17,619		575	
2018	9	27.08820	38,252			
2018	10	27.32630	1,351	67,541	2,886,968	2,886,968
2018	11	26.99290	46,574			
2018	12	27.09660	19,615			
2019	1	26.5924	812	93,940		1,115,642
2019	2	26.6390	824		1,115,642	
2019	3	27.2320	92,304			
<b>2018 TOTAL</b>		<b>27.2</b>	<b>284,102</b>	<b>284,102</b>	<b>7,749,736</b>	<b>7,749,736</b>
2019	4	27.0949	1,743	20,622	1,294,052	1,294,052
2019	5	27.0137	6,258			
2019	6	26.1853	12,621			
2019	7	26.0010	1,593	68,743	1,145	1,214,203
2019	8	26.3593	1,695		1,213,058	
2019	9	25.2064	65,454			
2019	10	25.7808	18,482	126,151	3,185,797	3,185,797
2019	11	26.0570	52,894			
2019	12	26.2501	54,776			
2020	1	26.5305	20,215	75,601	1,945,224	1,945,224
2020	2	26.6457	51,770			
2020	3	26.1188	3,616			
<b>2019 TOTAL</b>		<b>26.3</b>	<b>291,117</b>	<b>291,117</b>	<b>7,639,276</b>	<b>7,639,276</b>

**Exchange Rate and Local Execution from August 2016 to March 2021**

2020	4	24.9610	0	33,065		4,171,819
2020	5	24.5228	7,089		4,171,819	
2020	6	24.7588	25,976			
2020	7	25.0924	10,522	49,407	5,880	1,409,268
2020	8	24.7692	32,081		1,403,388	
2020	9	25.3105	6,804			
2020	10	25.3998	43,543	99,637		0
2020	11	25.1502	22,732			
2020	12	25.6099	33,361			
2021	1	25.5634	3,122	52,193		265,353
2021	2	25.6988	23,843		265,353	
2021	3	26.1809	25,228			
<b>2020 TOTAL</b>	<b>25.3</b>	<b>234,301</b>	<b>234,301</b>		<b>5,846,440</b>	<b>5,846,440</b>
2021	4	26.5816	3,570	32,645	1,913,875	1,913,875
2021	5	26.5468	5,918			
2021	6	26.5998	23,157			
2021	7	26.6519	9,631	36,390		2,545,599
2021	8	25.9226	4,019		2,484,105	
2021	9	26.4076	22,740		61,494	
2021	10	26.6962	38,041	121,806		2,262,443
2021	11	27.3762	18,750		2,262,443	
2021	12	26.8173	65,015			
2022	1	27.4087	42,742	81,722	564,707	564,707
2022	2	27.5209	36,746			
2022	3	27.5268	2,234			
<b>2021 TOTAL</b>	<b>26.8</b>	<b>272,563</b>	<b>272,563</b>		<b>7,286,624</b>	<b>7,286,624</b>
<b>Grand TOTAL</b>	<b>26.2</b>	<b>1,462,977</b>	<b>1,462,977</b>		<b>37,968,082</b>	<b>37,968,082</b>

**Table. MOHE's Expenditure in RM**

**Unit: RM**

PROJECT	ALLOCATION	BREAKDOWN BY YEAR					
		YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
UPM	APPROVAL	1,007,325.00	938,475.00	890,575.00	708,000.00	578,700.00	4,123,075.00
	EXPENDITURE	1,007,325.00	938,475.00	840,575.00	485,060.81	205,171.22	3,476,607.03
UMT	APPROVAL	420,400.00	613,100.00	480,300.00	311,200.00	175,000.00	2,000,000.00
	EXPENDITURE	420,400.00	613,100.00	480,300.00	268,894.39	109,907.61	1,892,602.00
UNISEL	APPROVAL	445,100.00	346,500.00	269,500.00	238,500.00	129,900.00	1,429,500.00
	EXPENDITURE	383,011.59	282,200.00	139,050.64	304,889.19	84,402.53	1,193,553.95
TOTAL	APPROVAL	1,872,825.00	1,898,075.00	1,640,375.00	1,257,700.00	883,600.00	7,552,575.00
	EXPENDITURE	1,810,736.59	1,833,775.00	1,459,925.64	1,058,844.39	399,481.36	6,562,762.98

**Table. MOHE's Expenditure in JPY\*1**

**Unit: JPY**

PROJECT	ALLOCATION	BREAKDOWN BY YEAR					
		YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	TOTAL
	Exchange rate (RM1 =JPY)	26.0	26.5	27.2	26.3	25.3	
UPM	APPROVAL	26,190,450	24,869,588	24,223,640	18,620,400	14,641,110	108,545,188
	EXPENDITURE	26,190,450	24,869,588	22,863,640	12,757,099	5,190,832	91,871,609
UMT	APPROVAL	10,930,400	16,247,150	13,064,160	8,184,560	4,427,500	52,853,770
	EXPENDITURE	10,930,400	16,247,150	13,064,160	7,071,922	2,780,663	50,094,295
UNISEL	APPROVAL	11,572,600	9,182,250	7,330,400	6,272,550	3,286,470	37,644,270
	EXPENDITURE	9,958,301	7,478,300	3,782,177	8,018,586	2,135,384	31,372,748
TOTAL	APPROVAL	48,693,450	50,298,988	44,618,200	33,077,510	22,355,080	199,043,228
	EXPENDITURE	47,079,151	48,595,038	39,709,977	27,847,607	10,106,878	173,338,652

## Seminar, Meeting and Workshop

Timeline	No.	From (Y/M/D)	Through (Y/M/D)	Venue	Country	Type	Title	Malaysia	Japan	Others	Total	Notable high officials/ Resource person
1	1	2016/5/10		Soka Univ.	Japan	Lecture	Continuous Operation System for Microalgae Production Optimized for Sustainable Tropical Aquaculture		30		30	
2	2	2016/8/15		UPM, IBS Meeting Room	Malaysia	Meeting	<b>The members meeting (PMC, de-fact) Preparation for the JCC meeting</b>				17	
3	3	2016/8/15		UPM, Seminar Room, Office of TNCPI building (White house)	Malaysia	Meeting	<b>The first Joint Coordinating Committee (JCC) meeting</b>				34	10 mission members led by Dr. Kyuma, Executive Member of the Council for Science, Technology and Innovation (CSTI)
	4	2016/10/2		UMT	Malaysia	Training	A short course on standardized methods used for sampling				0	Dr. Katayama
	5	2016/12/5		UNISEL, LaMBO, Cakerawala Meeting Room	Malaysia	Meeting	UNISEL-NIES Team Meeting	12	6		18	
4	6	2016/12/13		Hachioji Square Building, F11	Japan	Lecture	Methane fermentation treatment technology and microalgal culture as elemental technologies for a recycling-oriented society		20		20	
	7	2017/2/11	2017/2/24	UNISEL	Malaysia	Training	The usage and care of the fractionation method and system				0	Dr. Imai and Dr. Komatsu (Term 2)
5	8	2017/2/20		Soka Univ.	Japan	Lecture	Utilization of genetic resources in compliance with the Nagoya Protocol		40		40	Soil experts from Malaysia attached to RISDA plantation estate in Pahang (Term 2)
	9	2017/3/6	2017/3/7	RISDA-ESPEK Academy in Keratong, Rompin Pahan	Malaysia	Training	Training on the various techniques of soil identification, soil collections and the use of various equipment were carried out.				0	
6	10	2017/7/10		UMT, Senate Meeting Room	Malaysia	Meeting	<b>The first Project Management Committee(PMC) meeting</b>				37	
7	11	2017/7/11	2017/7/17	UMT, Senate Meeting Room	Malaysia	Meeting	<b>The second JCC meeting</b>				30	
	12	2017/8/6	2017/8/14	UMT	Malaysia	Training	A short course on standardized methods used for screening				0	Dr. Katayama and Shimadzu engineers
8	13	2017/8/14	2017/8/17	UPM	Malaysia	Training	Training on Liquid Chromatography-Mass Spectrometry (LC-MS)	9	3		12	Dr. Katayama
	14	2017/8/20	2017/8/23	UMT	Malaysia	Training	A short course on standardized methods used for screening				0	Dr. Katayama
	15	2017/10/2	2017/11/17	UMT	Malaysia	Training	A short course on standardized methods used for sampling				0	Prof. Kurosawa, SU
9	16	2017/10/9	2017/10/11	UPM, IBS, Tongkat Ali Emas Room	Malaysia	Workshop	The first SATREPS-COSMOS MOHE Research Progress Workshop: Species identification and community analysis of algal samples based on the DNA sequences.	24	2		26	Dr. Katayama (Term 4)
10	17	2017/11/15	2017/11/17	UPM	Malaysia	Training	Training on "analyzing inorganic macronutrients with auto-analyzer t"	8	2		10	Dr. Koyama
	18	2018/1/8	2018/1/20	UPM	Malaysia	Training	Set-up the outdoor medium-scale nutrient recycling system				0	
	19	2018/1/15		UPM	Malaysia	Mission	The Cross-ministerial Strategic Innovation Promotion Program (SIP) Mission from Japan		10		10	Attended from JST and JICA
	20	2018/2/1		University of Tokyo	Japan	Workshop	Annual research progress meeting/ workshop with the attendance from JST and JICA				0	
11	21	2018/3/8		UMT	Malaysia	Meeting	Progress Meeting 1				13	
	22	2018/3/19	2018/3/23	UPM	Malaysia	Training	Follow-up the outdoor medium-scale nutrient recycling system				0	Dr. Nakakuni, SU
12	23	2018/3/21	2018/3/24	Shimadzu, Malaysia Sdn Bhd	Malaysia	Workshop	Microalgae pigment analysis using LCMC (Liquid Chromatography Mass Spectrometry					

## Seminar, Meeting and Workshop

Time line	No.	From (Y/M/D)	Through (Y/M/D)	Venue	Country	Type	Title	Malaysia	Japan	Others	Total	Notable high officials/ Resource person
13	24	2018/6/27	2018/6/29	UPM	Malaysia	Workshop	Workshop 2: Lipid analysis using gas chromatography/ mass spectrometry (GCMS): Sample preparation and identification	13	0		13	Prof. Dato Dr. Mohamed Shariff Mohamed Din, UPM
14	25	2018/6/28		UPM, IBS	Malaysia	Meeting	The second PMC meeting				25	
15	26	2018/7/4		Soka Univ.	Japan	Lecture	A special lecture for SU students and researchers				0	
16	27	2018/8/25		UMT, Level 3 BK4-02, Lecture Hall	Malaysia	Meeting	The third JCC meeting JST mid-term review (25 -27 August 2018)				30	
17	28	2018/8/27		UMT	Malaysia	Symposium	The first international symposium "COSMOS-SATREPS" & 4th International Postgraduate Conference on Biotechnology (IPCB2018)	91	34	24	149	
18	29	2018/8/29		UMT	Malaysia	Workshop	Workshop "What is 3-minute pitch?"	67	12	12	91	
19	30	2018/8/29		UMT	Malaysia	Workshop	Workshop "How to write a scientific paper"	67	12	12	91	
20	31	2018/8/29		UMT	Malaysia	Workshop	Workshop "Composition of scientific papers"	67	12	12	91	Dr. Kuwat, SU
21	32	2018/9/19		NIES	Japan	Meeting	Progress/outputs meeting					
22	33	2019/1/23	2019/1/24	UPM, IBS	Malaysia	Training	Training course on SEM (Scanning Electron Microscopy) sample preparation of micro-organisms using freeze drying method	8			8	Prof. M. Kuwata
	34	2019/7/10	2019/7/17	UNISEL	Malaysia	Workshop	Training on scientific writing for postgraduate students	6			6	Prof. V. Kuwahara
	35	2019/7/28	2019/8/4	UNISEL	Malaysia	Workshop	Training on scientific writing for postgraduate students	6			6	Prof. V. Kuwahara
	36	2019/8/21	2019/8/22	Universiti Kebangsaan Malaysia (UKM)	Malaysia	Workshop	Metagenomics Workshop introduced the fundamental application of bioinformatics in high-throughput sequencing				0	Dr Wan Nadiah Wan Rasdi and Dr. Roslizawati Ab Lah, UMT
	37	2019/9/23	2019/9/24	UNISEL	Malaysia	Workshop	Training on scientific writing for postgraduate students	6			6	Prof. V. Kuwahara
	38	2018/12/3			Japan	Meeting	Mid-term evaluation meeting was concluded by JST				0	
	39	2019/3/4		Soka Univ.	Japan	Meeting	Monitoring on a progress/outputs				0	
	40	2019/3/19	2019/3/20		Malaysia	Workshop	SATREPS-COSMOS Matching Fund (project) progress				0	
23	41	2019/9/25		UPM, Seminar Room, Office of TNCPI building (White house)	Malaysia	Meeting	The third PMC meeting	26	8	0	34	
24	42	2019/9/26		Holiday Inn Kuala Lumpur Glenmarie Hotel	Malaysia	Meeting	The fourth JCC meeting	26	10	0	36	
	43	2020/8/21		Online meeting	Online	Meeting	The fourth PMC meeting	17	16		33	
	44	2021/8/			Online	Workshop	Online Training on Auto Analyzer	18			18	Dr.Katayama
	45	2020/8/28	2020/8/28	Online meeting	Online	Meeting	The fifth JCC meeting				0	
	46	2021/10/7	2021/10/7	UPM demo site	Malaysia	Workshop	Training on the centrifuge	8	1		9	Dr. Takayama. Assoc. Prof. Dr. Mohd Razif bin Harun

## Seminar, Meeting and Workshop

Timeline	No.	From (Y/M/D)	Through (Y/M/D)	Venue	Country	Type	Title	Malaysia	Japan	Others	Total	Notable high officials/ Resource person
	47	2021/11/16	2021/11/16	Online meeting	Online	Meeting	<b>The fifth PMC meeting</b>	35	15		50	Prof. Dr. Mohd Adzir Mahdi, Director of RMC, UPM/ Chairman of PMC
	48	2021/11/23	2021/11/23	Online meeting	Online	Meeting	<b>The sixth JCC meeting</b>	21	20		41	Prof. Dr. Nazamid bin Saari, Co-Chairperson/ Project Director/ DVC, UPM
	49	2021/11/25	2021/11/25	Online meeting	Online	Meeting	<b>JST hearing</b>	7	14		21	JST Researchers (Prof. Asanuma, Prof. Matsuda, Prof. Nagamine)
	50	2022/2/25	2022/2/25	UPM demo site	Malaysia	Inauguration	Inauguration of the SATREPS-COSMOS Demonstration Site	50	11		61	* Prof. Ir. Dr. Robiah binti Yunus, Deputy General Director of Higher Education (Academic and Development), Mr. Hosomi Masashi, Counsellor, EoJ; Prof. Dr. Nazamid bin Saari, DVC
							Sum	592	278	60	1116	