

ቀን:02/09/2016 ዓ.ም.

ከአቶ ፈድሉ

የፈጠራ ማበልፀጊያ ማዕክልና አእምሯዊ ንብረት መብት ጥበቃ አስተባባሪ

ዩኒቨርሲቲ-ኢንዱስትሪ ት/ቴ/ሽ/ዳይሬክቶሬት ዳይሬክተር

<u>ንዳዩ: ለቀን ሰራተኞች እና ባለሙያዎች የሚከፈል ቀድሞ ክፍያ እንዲከፈል ስለሞጠየቅ</u>

በዩኒቨርሲቲያችን የፈጠራ ማበልፀጊያ እና አእምሯዊ ንብረት ሙብት ጥበቃ ማእከል በ ደ/ር ሄኖክ ወ/ሚካኤል ሜንቶርነት " Manufacturing of Multi purpose Hybrid Solar Dryer Machine" ሙለያ ኮድ IINGP 003/2024 በሚል ርእስ ፕሮጀክት እየተሰራ ሙሆኑ ይታወቃል ፡፡ ስለሆነም ለቀን ሰራተኞች እና ባለሙያዎች የሚውል 99,000 (ዘጠና ዘጠኝ ሽህ ብር) ቅድሙ ክፍያ ከ ፕሮጀክት በጀት ላይ ወጭ ተደርጎ እንዲከፈላቸው በአክብሮት እጠይቃለሁ።

ከሠላምታ ኃር



*ግል*ባጭ፡

• የፈጠራ ማበልፀጊያ ማዕክልና አእምሯዊ ንብረት ማብት ጥበቃ ማስተባበሪያ



ቀን:02/09/2016 ዓ.ም.

ከአቶ ፈድሉ

የፈጠራ ማበልፀጊያ ማዕክልና አእምሯዊ ንብረት ጣብት ጥበቃ አስተባባሪ

ዩኒቨርሲቲ-ኢንዱስትሪ ት/ቴ/ሽ/ዳይሬክቶሬት ዳይሬክተር

<u>ንዳዩ: አጠቃላይ ማዅ እንዲፈፀም ስለጦጠየቅ</u>

በዩኒቨርሲቲያችን የፈጠራ ማበልፀጊያ እና አእምሯዊ ንብረት ሙብት ጥበቃ ማእከል ውስጥ ክትትል እና ድጋፍ የምናደርግባቸው በኢኖቬሽን የፈጠራ ሀሳቦች የፕሮጀክት ድግፍ የተደረገላቸው ፕሮጅክቶች ሙኖራቸው ይታወቃል። ስለሆነም የግዚ ሂደቱን ቀልጣፋ እና ቀላል እንዲሆን ይረዳ ዘንድ ለፕሮጀክቶቹ የሚያስፈልን ግብአቶች በአስቸኳይ ግዚ እንዲፈፀምላቸው ከዚህ 3 76 አባሪ ጋር አያይዘን ዝርዝር ልከናል ። ስለሆነም በእናንተ በኩል አስፈላጊው ትብብር ተደርጎ ተደርጎ ግዢው በአስቸካይ እንዲፈፀም ስል በአክብሮት እጠይቃለሁ።

ከሠላምታ ኃር

*ግ*ልባጭ፡

• የፈጠራ ማበልፀጊያ ማዕክልና አእምሯዊ ንብረት ማብት ጥበቃ ማስተባበሪያ



ADDIS ABABA SCIENCE & TECHNOLOGY UNIVERSITY

Document No.

PO/OF/001

የውስጥ ማስታወሻ መጻጻፊያ INTER-OFFICE MEMO Issue No. Page No.
1 Page 3

Page 3 of 1

No	Component	specification	Quantity
1	Computer		1
2	Raspberry 4b+Pi		1
3	Arduino:		1
4	Stepper Motor		1
5	Motor Driver		1
6	LPR Camera		2
7	LCD Display:		1
8	Cables and Accessories		1
9	Barrier gate +2 vertical steel		1
10	Ultrasonic sensor		1
11	Adaptor		1
12	wood		60pcs
13	nail		8kg
14	membrane plastic		30 meter
15	pipe		8 meter
16	cement		50 kg
17	sand		1 m3
18	Aluminum Composite Panel	$1.22m \times 2.44m$, t= 4mm	4
19	Plywood	$1.22m \times 2.44m$, t= 8mm	3
20	Aluminum Foil Insulation Roll	B099VXGLC3 (1m×1m)	2
21	Aluminum sheet	Thickness of 2mm	2
22	Aluminum Silver Foil Plastic Pouches Bags	50 to 500 grams, Rectangular Silver color, pieces	200
23	Plastic transparent package bag	50g, 100g, 250g, 500g	200



Document No.
PO/OF/001

ADDIS ABABA SCIENCE & TECHNOLOGY UNIVERSITY

የውስጥ ማስታወሻ **መጻጻፊ**ያ INTER-OFFICE MEMO

Issue No. Page No.
Page 4 of 1

24	Clear Acrylic Sheet Glass Plexiglass	$1m \times 0.6m$, t=2mm	3
25	Solar photo voltaic cell	550w, pf=0, output 120/240V	1
26	RHS (Rectangular Hole Section)	$4 \text{ cm} \times 4 \text{ cm} \times 0.3 \text{ cm}$	3
27	Angle iron	$3\text{cm} \times 3\text{cm} \times 0.2\text{cm}$	4
28	Aluminum Flexible duct	110 mm diameter packed, m	50
29	Paraffin wax	kg	6
30	Black color spray & Nifas Kelem		3
31	Blower	500watt	3
32	Temperature and humidity sensor (DHT 22)		10
33	Temperature & humidity controller	Machine	2
34	Digital electronic balance	25 g to 5 kg	1
35	LCD Display	20 by 4	2
36	Arduino Mega	Pices	2
37	Air heater rod (instant heater)	Heater from 250 to 1000 watt	3
38	Bolt, nut, pin.	Pieces	200
39	Aluminum angle frame	3cmx3cm or 4cmx4cm	4
40	Transparent clear plastic roll	Length, meter	15
41	Lemon grass		20
42	Transportation		3
43	Scissors		2
44	Crush miller\coffee machine		1
45	Beaker 100 ml		1
46	Measuring cylinder		1
47	Beakers 250ml		1



ADDIS ABABA SCIENCE & TECHNOLOGY UNIVERSITY

Document No.

PO/OF/001

የውስጥ ማስታወሻ መጻጻፊያ INTER-OFFICE MEMO

Issue No. Page No.
Page 5 of 1

48	Conical flasks		1
49	Perfume bottle		5
50	Glass rod		3
51	Flask brush		1
52	Pipette		2
53	Ethanol		5
54	Aluminum foil		2
55	Glycerine		1
56	Glove		3
57	2000ml Round bottom flask		1
58	Black bottle		3
59	Sieve		1
60	Shaker		1
61	Arduino uno	2200	
62	ESP32 CAM	2100	
63	USD to ttl converter	1700	
	,		
		Type: Hybrid	
		Step Angle: 1.8 deg Holding Torque: 3.0 Nm Rated	
64.	Nema-23 Stepper Motor	Current/phase: 4.2A Rated Voltage: 5.88V	1
		Phase Resistance: 0.9 ohms±10% Rotor Inertia:	
		800g.cm2	
		Motor Type: Bipolar Stepper Step Angle: 1.8 deg	
~ =	Nema-17 Stepper Motor	Holding Torque: 0.6Nm Rated Current/phase: 0.64A	
65.		Phase Resistance: 15ohms Inductance: 32mH ±	1
		20%(1KHz)	
			i .
66.	MG996 Servo Motor	Stall Torque: 9 kg/cm Operating Voltage: 4.8-7.2V	4



Document No.
PO/OF/001

ADDIS ABABA SCIENCE & TECHNOLOGY UNIVERSITY

Issue No. Page No. Page 6 of 1

የውስጥ ማስታወሻ መጻጻፊያ INTER-OFFICE MEMO

		Gear Type: Metal	
		Rotation: 0°-180° Control Signal: PWM	
67.	0.5KW Spindle Limit Switch	 1 x 500W Air-Cooled Spindle Motor 1 x 110V Speed Governor with MACH3 1 x 52mm Mount bracket 13 x ER11 collect Current rating: 15A Voltage Rating: AC 250V/125VAC DC Rating: DC 250V/125V 0.6A/0.3A 4 Axis Arduino CNC shield GRBL 0.8c compatible. 4-Axis support 	1
69.	GRBL Shield	Spindle enables and direction Runs on 12-36V DC	1
		It supports up to 4 motors	
70.	DM860H Stepper Motor Driver	Power supply voltage DC24-110V Subdivision range: 400~25000 Pulse response frequency: 200KHZ Driver current 2.4-7.2A 7.20KHz chopping frequency	1
71.	TB6600 Stepper Motor Driver Controller Micro- Step	Voltage: 9 V-42V DC Current: up to 5A H-bridge Bipolar constant- phase flow-driven up to 32 segments of six types of sub-modesavailable	1
72.	PCA9685 Servo Driver	Number of Channels: 16 Control Interface: I2C (Inter- Integrated Circuit) communication protocol Supply Voltage: 2.3V to 5.5V Frequency Range: 24 Hz to 1526 Hz Maximum Output Current: 25 mA per channel	1



Document No.
PO/OF/001

ADDIS ABABA SCIENCE & TECHNOLOGY UNIVERSITY

የውስጥ ማስታወሻ <mark>መጻጻፊ</mark>ያ INTER-OFFICE MEMO

Issue No. Page No.
Page 7 of 1

Operating Voltage: 5V Input Voltage: 7-12V Digital I/O Pins 54 Analog Input Pins 16 DC Current per I/O Pin 40 mA Flash Memory 256 73. Arduino Mega KB 1 SRAM 8 KB EEPROM 4 KB Clock Speed 16 MHz Display Format 20x4 Character Operating voltage: 5V 20*4 LCD Display 1 Uses HDD44780 Display 80 characters at a time Backlight enable jumper Contrast control 75. I2C Module potentiometer 0 0x27 I2C default address. 1 Solder jumper selectable from 0x20 - 0x27DC Brushless Fan Operating voltage: 12V 76. 12v Fan 1 DC 24V 10A 240W Input: 100-240V AC, 50-60HZ 77. **Power Supply** 1 Output: 24V DC 10 Amp Circular Rocker Switch 78. 1 Power Rating 250VAC/10A UK Plug with fuse Power Cord/Cable 1.5m long 79. 1 Connector Type: Standard UK 3Pin Cord Plug 250VAC 1 80. Cable Type: USB Brand: Platinum Delux 81. USB A to B Cable Connector Type: USB Type-A Compatible Devices: PC Model: LM8/10uu Inner diameter: 8/10 (mm) Outside diameter: 19 82. Linear bearing 8 (mm) Material: Bearing steel Size: 2.9 x 1.9cm/1.14 x 0.75 Weight:125g



Document No.
PO/OF/001

ADDIS ABABA SCIENCE & TECHNOLOGY UNIVERSITY

Issue No. Page No.
Page 8 of 1

የውስጥ ማስታወሻ መጻጻፊያ INTER-OFFICE MEMO

		6205ZZ	
83.	Ball Bearing	Inside Diameter: 25.00mm Outside Diameter:	1
		52.00mm Width: 15.00mm	
		SKF 608Z/C3	
		Load direction: Axial and Radial Bore Diameter:	
84.	D II D	8mm	
84.	Ball Bearing	Outer Diameter: 22mm Dynamic load rating (C): 3.3	6
		KN Static load rating (C0) – 1,37 KN	
		Lubrication Speed – 34000 r/min	
9.5		Material: Stainless Steel	4
85.	Thread Tensioner	Size: Approx. 3.5 x 1cm / 1.4 x 0.4in	4
		· 18mm*1200*2400mm	
86.	MDF	· 12mm*1200*2400mm	3
		· 6mm*1200*2400mm	
87.	Australia's Timber	• 60*60*4000mm	1
88.	Acrylic	Size: 8*170*350mm	4
89.	Mica	Size: 3*100*350mm	4
90.	Shafts	· 8/10mm Shaft: length 3m	2
90.	Sharts	· 25mm Shaft: length 30cm	2
91.	Sheet Metal (Plate)	Size: 100*100*3mm	1
92.	Aluminum Sheet	Size: 500*500*1mm	1
		• M5	150
93.	Bolts & Nuts	• M6	
		• M8	pcs
0.4	NI-21	· No. 4 – 8	21,0
94.	Nail	· String art nails	3kg
05	Electrical Wines (Coble)	· Jumper cables	
95.	Electrical Wires (Cable)	· Wire (Copper Cable)	
	Cotton Sewing Thread	· Magenta	
96.		· Cyan	8



		· Yellow	
		· Black	
		· White	
97.	Spray	· Golden	3
		· Red	
98.	Glue Stick	7mm diameter 20cm length	3
		Thickness:	
99.	Heat Shrink Tube	· 2mm	1m
		· 3mm	
100	I and Caldania Wina	mixture of 60% tin and 40% lead low melting point	50cm
100.	100. Lead Soldering Wire	(183°C)	
		Cable tie hose tie, zip tie, or tie wrap	
101.	Zip Ties	For holding items together, primarily electrical cables	7
		and wires	



ቀን:02/09/2016 ዓ.ም.

ከአቶ ፈድሉ

የፈጠራ ማበልፀጊያ ማዕክልና አእምሯዊ ንብረት መብት ጥበቃ አስተባባሪ

ዩኒቨርሲቲ-ኢንዱስትሪ ት/ቴ/ሽ/ዳይሬክቶሬት ዳይሬክተር

<u>ንዳዩ: የማሳ ስማርት አማሪካልቸር /Massa- Smart Agriculture/ ፕሮጀክት ማሻሻያ ይመለከታል</u>

በዩኒቨርሲቲያችን የፈጠራ ማበልፀጊያ እና አእምሯዊ ንብረት መብት ጥበቃ ማእከል ውስጥ ክትትል እና ድጋፍ ከምናደርግባቸው ፕሮጀክቶች ውስጥ አንዱ የሆነው የግብርና ስርአት የሚያዘምን ስራ በአድቫይዘር እና ገምጋሚዎች ጥቆማ እና ሀሳብ መሰረት የፕሮጀክት ርእስ እና የበጀት ዝርዝር ማስተካከያ እንዲደረግ በተወያየነው መሰረት የፕሮጀክቱ ርእስ "Massa-Smart Agriculture Data Collection Tool " እንዲሆን እና የተስተካከለው የበጀት ዝርዝርም ከ 1 7ፅ አባሪ ጋር አያይዘን ልከናል ። ስለሆነም በእናንተ በኩል አስፈላጊው ትብብር ተደርጎ ተደርጎ ፕሮጀክቱ ይተገበር ዘንድ በአክብሮት እጠይቃለሁ።

ከሠላምታ 2ር

ፈድሉ *ኑ*ርሁሴን

ማልባጭ፡

• የፈጠራ ማበልፀጊያ ማዕክልና አእምሯዊ ንብረት ማብት ጥበቃ ማስተባበሪያ

	አዲስ አበባ ሳይንስና ቴክኖሎጂ ዩኒቨርሲቲ	Document PC	No. D/OF/001
<i>B</i>	ADDIS ABABA SCIENCE & TECHNOLOGY UNIVERSITY		
		Issue No.	Page No.
የውስጥ ማስታወሻ			Page 11 of 1
INTER-OFFICE MEMO			

Updated Budget Break Down for Massa-Smart Agriculture Data Collection Tool

Servers and Hosting Branding, Unlimited internet and voice plans Banner, and Log	40,000 /Annually 10,2000/ Annually 25,000 /One Time	32,000 30,600
	•	,
Banner, and Log	25,000 /One Time	24.040
		24,840
External Solid State Drive	7,000 /One Time	21,000
Data Entry (Outsourcing)	55,000	55,000
Quality Assurance(Outsourcing)	23,000/ One Time	23,000
Domain Expert Consultation(Outsource ng)	25,000/One Time	25,000
Testing(Outsourcing)	24,000/ One Time	24,000
Transportation for a site visit	10,000/ One Time	10,000
	Total	245,440 /ETB/
	Data Entry (Outsourcing) Quality Assurance(Outsourcing) Domain Expert Consultation(Outsource ng) Testing(Outsourcing)	Data Entry (Outsourcing) Quality Assurance(Outsourcing) Domain Expert Consultation(Outsource ng) Testing(Outsourcing) 24,000/ One Time Transportation for a site visit 10,000/ One Time