

PURCHASE ORDER

QR-ADMPPS-04

INDUSTRIAL TECHNOLOGY DEVELOPMENT INSTITUTE

DOST Compound, Gen. Santos Ave., Bicutan, Taguig City
DOST Trunkline: 837-2071 local 2220 / 2221

13-2016

Supplier: PHILAB INDUSTRIES, INC.	P.O. No.: GF-E-188-2013
Address: 7487 Bagtikan Street, SAV, City of Makati	Date: May 14, 2013
	Mode of Procurement: Public Bidding
PO-08-9	PR # 08-2013-0015 ASC # 127-2013

Gentlemen:
Please furnish this office the following articles to the terms and conditions contained herein:

Place of Delivery: ADMATEL Bldg.	Delivery Term: Six (6) months
Date of Delivery:	Payment Term:

Stock No.	Unit	Description	Quantity	Unit Cost	Amount
1	unit	TRANSMISSION ELECTRON MICROSCOPE JEOL JEM 2100F I. General Specifications: a. Field Emission transmission electron microscope b. Conventional transmission mode bright field and dark field imaging c. Energy Dispersive X-ray Analysis Capability d. HR STEM resolution: 0.2 nm or less e. CCD Camera System f. With magnification standards g. Cooling Water unit h. Compressor (silent and automatic) i. TEM Plasma/ion cleaner (low energy oxygen-argon mixture) j. Basic and Advance Courses k. Support PC II Technical Specifications A. Machine Features: 1. Electron Gun 1.1. Accelerating voltage, variable from 80 to 200kV 1.2. Field emission gun which Schottky field emitter with high maximum beam current (>100 nA) 1.3 High tilt angle beam alignment and excellent resolution 1.4 Spot drift < 1 nm/minute 1.5 Beam stopper facility should be included 2. Detection System 2.1 STEM detector 2.1.1. Consist of hardware (Bright Field/Dark Field and/or High-Angle, Annular Dark Field Detector) and software (Scanned Imaging Technique), and can be retrofitted if necessary.	* 1	48,080,618.00	48,080,618.00

* PRO
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10/14/2013

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Page 1 of 4 pages
(Total Amount in Words)

In case of failure to make the full delivery within the time specified above, a penalty of one-tenth (1/10) of one percent for every day of delay shall be imposed.

Very Truly yours,

Conforme:

(Signature over printed name)

(Date)

Requisitioning Office/Dept.	Funds Available:	Amount
		ALOBS No.

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Total Carried Forward					48,080,618.00
		2.1.2. High sensitivity HAADF system detector 2.2 EDS Detector 2.2.1 Consist of hardware and software require for both qualitative and quantitative EDS analysis as well as EDS spectrum imaging 2.2.2 Large area Silicon drift detector 80 mm ² or lower 2.2.3. Liquid nitrogen free cooling system 2.2.4. TEM system equips the special aperture to eliminate the background 2.2.5. One beryllium holder (double-tilt type) for EDS shall be provided 3. Imaging System 3.1 Excellent information limit (1.5 nm or better) 3.2 Magnification (EF) TEM: up to 1.5Mx 3.3 CCD and Energy Filter available 3.4 TEM point resolution: 0.23 nm or better, lattice: 0.1 nm 3.5 Secondary Electron Image / Backscattered Electron Image 4. Vacuum System 4.1: Ion Getter Pump or Sputtering Ion Pump on specimen area for contamination-free observation and analysis 4.2 Turbo molecular of Diffusion pump for pre-pumping column, gun and specimen airlock 4.3 Vacuum levels: specimen chamber 1-2x10 ⁻⁵ Pa, gun 1x10 ⁻⁸ Pa 4.4 Anti-contamination system with heater must be equipped in order to avoid contamination and keep the best vacuum condition 4.5 Double O-ring system 5. Specimen Chamber 5.1 The holder enables the specimen to be tilted in two directions perpendicular to each other, one (whose angle depends on the lens) around the main tilt axis, the second one (+/-30°) around the Y-axis 5.2 The second tilt is read out and displayed with 0.1°			

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Supplier:	PHILAB INDUSTRIES, INC.	P.O. No.:	GF-E-188-2013
Address:	7487 Bagtikan Street, SAV, City of Makati	Date:	May 15, 2013
		Mode of Procurement:	Public Bidding
PO-08-9		PR #	08-2013-0015 ASC # 127-2013

Gentlemen:

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		5.3 Fully computer controlled specimen movement fully safe and allowing maximum tilt for each XYZ-beta tilt position			
		5.4 Piezo control stage movement Piezo controller: minimum step of 0.4 Angstroms or better			
		6. CCD System			
		6.1 Single frame & live view acquisition;			
		6.2 Binning possibilities depend on the brand and type of CCD camera; CCD preferably manufactured by the same company			
		6.3 Sub-area read out of arbitrary areas;			
		6.4 Gain and bias correction.			
		6.5 Variable exposure times			
		6.6 Image processing			
		6.7 CCD pixel size is 8MB or higher			
		7. EDS spectroscopy capabilities			
		7.1 Spectral display - no software limit on number of spectra, energy cursors, or energy windows per display or the number of display windows, all display parameters (colors, styles, etc.) are user-definable;			
		7.2 Peak annotation/labeling (KLM maker's)			
		7.3 Automatic peak identification.			
		7.4 Graphical or manual energy calibration;			
		7.5 Data export to spreadsheets for user defined processing			
		7.6 Data storage in portable formats for import into two other software packages;			
		7.7 User-selectable mode-immediate/view; add/average			
		7.8 Continuously adjustable dwell time and present time (0.1 - 1000s);			
		7.9 Beam current can be recorded during series acquisition;			
		7.10 Automatic energy calibration			
		7.11 Automatic resolution measurement;			

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B-201 607

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PO-08-9	PR.# 08-2013-0015	ASC # 127-2013

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		7.12 Multiple least squares analytical peak fitting			
		7.13 Quantitative and semi-quantitative analysis using standards available			
		7.14 ZAF and thin film corrections		Less: VAT 2,146,456.16	
		7.15 Real time display of processed elemental maps and line profiles		EWT 429,291.23	2,575,747.39
		7.16 Any portion of raw spectral data can be stored at each scan position (spectrum images) for post processing.			45,504,870.61
		7.17 Imaging signals and spectroscopic signals from all detectors can be acquired simultaneously			
		7.18 Multiple sets of standards available			
		7.19 Point and Click selection of fixed beam line or area-scanned spectroscopic acquisition from multiple user-defined areas			
		8. PC System			
		The computer hardware requirement are:			
		Computer System: Intel i7 or better Memory: 8GB RAM			
		OS: Windows 7 or better Display: 2 units 23" HD LED			
		Storage: 1 TB HDD.			
		Others: Keyboard, CD RW, Mouse, etc. with Backup 1 unit laptop			
		Computer equivalent to PC requirements as above			
		B. Application/Training Support: Dispatch of a TEM specialist with PhD Degree and fluent in English Language			
		C. Installation: free of charge. This includes supplies and materials that may be deemed necessary to accommodate the proper installation and operation of the equipment			
		D. Training: Offshore training in Japan for one (1) personnel per year for three (3) years			
		E. Warranty: Three (3) years on parts and services (TEM), One (1) year on parts and service (EDS)			
		F. On-site application support by a Specialist with PhD Degree and fluent in English Language for every three (3) months for two (2) years.			

END-USER:
[Signature]
DR. BLESSIE A. BASILIA

CHARGE TO:
Dev: of SFE/HNT as Die-Attach Material in Semiconductor Devices

PREPARED BY:
[Signature]
ROCHEL LEE C. DELUTA
OIC-PPMS

Page 4 of 4 pages
(Total Amount in Words) **Forty five million five hundred four thousand eight hundred seventy pesos & 61/100**

In case of failure to make the full delivery within the time specified above, a penalty of one-tenth (1/10) of one percent for every day of delay shall be imposed.

Very Truly yours,
[Signature]
DR. NUNA E. ALMANZOR
Director

Conforme:

(Signature over printed name)

(Date)

Requisitioning Office/Dept. DR. BLESSIE A. BASILIA Chief-MSD	Funds Available: <i>[Signature]</i> SOLEDAD S. REYES Accountant IV	Amount ALOBS No. <i>48,080,618.00</i> 2013050087
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