REQUEST FOR TESTING AND ANALYSIS FORM

Ref. No.: _ _ _ _ _ _ _ _ _ _ _

A. CLIENT'S INFORMATION				
Name				
Company Name				
Company Address			**Postcode**	
Phone No.			**Email**	
Category	**Internal** *(BSc, MSc, PhD, Lecturer)*		**External** *(Industry/ IPTA/ IPTS)*	

B. TESTING AND ANALYSIS INFORMATION (*Please refer to the Attachment I for testing & analysis code)*

No.	Testing & Analysis Code	No. of Sample	Sample Details (Method, Parameter, etc)

C. ACKNOWLEDGEMENT	
Signature & Official Stamp (Client)	**Signature & Official Stamp (SERC)**
Date:	**Date:**

Science & Engineering Research Centre (SERC), Engineering Campus,
Universiti Sains Malaysia, 14300 Nibong Tebal, Pulau Pinang
Tel: 04 – 599 6508 | Email: serc@usm.my | serc.eng.usm.my

STANDARDS MALAYSIA ACCREDITED
SAMM NO. 942

Attachment I

TESTING AND ANALYSIS LIST

Instrument	Testing & Analysis Code	Type of Testing and Analysis
HRTEM High-Resolution Transmission Electron Microscopy	TEM 01	Sample Preparation (Powder)
	TEM 02	Sample Preparation (Cryo microtomy)
	TEM 03	Sample Preparation (Room temperature microtomy)
	TEM 04	HRTEM Imaging
	TEM 05	SAED Analysis
	TEM 06	EDX analysis
DCAT Dynamic Contact Angle	DCT 01	Contact angle (Powder/fiber)
	DCT 02	Interfacial surface tension
	DCT 03	Surface tension
PXRD Powder X-Ray Diffraction	PXRD 01	2Theta: 5 – 80 Degree, Time: 6 Minutes
	PXRD 02	2Theta: 5 – 80 Degree, Time: 20 Minutes
	PXRD 03	2Theta: <10 Degree, Time: 6 Minutes
	PXRD 04	2Theta: <10 Degree, Time: 20 Minutes
	PXRD 05	Others: Upon Request (custom)
	PXRD 06	Sample Preparation (special)
XPS X-Ray Photoelectron Spectroscopy	XPS 01	Standard XPS analysis (Wide Scan & Quantitative Analysis and Narrow Scan)
	XPS 02	Wide scan & quantitative analysis only (maximum 2 spots)
	XPS 03	Standard XPS analysis + sputtering (every acquisition after sputtering) [B1+ (cycle)n](1 cycle=150/200)
	XPS 04	Standard XPS + imaging
	XPS 05	Standard XPS + imaging + small spot analysis(100/150)
	XPS 06	Standard XPS analysis + imaging + small spot analysis + sputtering (every acquisition after sputtering)
	XPS 07	Standard XPS analysis + Angle Resolved (ARXPS) - intervals: 0/90deg, 15 deg, 30ged, 45deg & 60deg)
	XPS 08	Standard XPS analysis + Angle Resolved (ARXPS) - intervals: more than 5
	XPS 09	Depth profiling and other techniques (based on hours & upon request)
	XPS 10	Depth profiling and other techniques (based on hours & upon request/discussion)- per hour

	XPS 11	Data deconvolution & interpretation, max 4 elements (per sample)
	XPS12	Data deconvolution & interpretation, max 4 elements (per sample) - Graphene sample (O, C, S, Si/N)
	XPS 13	Specific & customised analysis - upon request
FTIR Fourier Transform Infrared Spectroscopy	FTIR 01	ATR-FTIR analysis (maximum 2 spots)
	FTIR 02	FTIR with microscope (maximum 2 spots)
	FTIR 03	ATR-FTIR with KBr sample preparation
	FTIR 04	FTIR Mapping + line scan imaging + colour map
FESEM Field Emission Scanning Electron Microscopy	SEM 01	Imaging + EDX (max. 3 spots, 2 EDX)
	SEM 02	Imaging Only (max. 3 spots)
	SEM 03	EDX Only (max. 2 spots)
	SEM 04	Imaging + EDX (1 spot)
	SEM 05	Imaging Only (1 spot)
	SEM 06	EDX Only (1 spot)
	SEM 07	Sputter Coating (per sample)
	SEM 08	Sampel Preparation (Cutting)
TXRD Thin Film X-Ray Diffraction	TXRD 01	Grazing Incidence Diffraction (GID) - 15 minutes/analysis
	TXRD 02	Thin film analysis – 2 Theta-Omega Scan
	TXRD 03	Thin film analysis – Rocking Curve
	TXRD 04	X-Ray Reflectivity (XRR) - 15 minutes/analysis
LSM Laser Scanning Microscope	LSM 01	LSM BF imaging
RAMAN Raman Spectrometer	RMN 01	Raman Testing
DSC Differential Scanning Calorimetry	DSC 01	DSC Analysis
TGA Thermogravimetric Analysis	TGA 01	20 deg/min
	TGA 02	10 deg/min
	TGA 03	5 deg/min
	TGA 04	Other parameter - upon request
UTM Universal Testing Machine **Accredited ISO 17025*	UTM 01	Tensile, Flexural, Compression, ILSS Testing
	UTM 02	New Testing Method
	UTM 03	Sample Preparation (Dumbbell Cutter)
AAS Atomic Absorption Spectrometer	AAS 01	AAS Testing (1 element)

UV-VIS-NIR Ultraviolet/ Visible/ Near Infrared Spectroscopy	UV 01	Standard Detector
	UV 02	URA Detector
	UV 03	Integrating Sphere Detector
HPLC High-Performance Liquid Chromatography	HPLC 01	HPLC Testing
GCMS Gas Chromatography Mass Spectrometry	GC 01	GCMS Testing
	GC 02	Liquid-volatile
	GC 03	Solid
Particle Analyzer	PA 01	Particle size analysis (0.3nm - 10um)
	PA 02	Zeta potential (3.8nm - 100um)
ICP-MS Inductive Coupled Plasma Mass Spectrometer	ICP 01	Common elements (1- 5 elements)
	ICP 02	Common elements (6-12 elements)
	ICP 03	Common elements (13-24 elements)
	ICP 04	Common elements (24-48 elements)
	ICP 05	Common elements (> 48 elements)
	ICP 06	Scanning analysis with concentration
	ICP 07	Sample preparation using Microwave Digestion

Element List for ICP-MS Analysis

Group Name	Element
Group 2	Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sc, Sm, Tb, Th, Tm, Y, Nb
Group 3	Ag, Al, As, Ba, Be, Bi, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, Hg, In, K, Li, Mg, Mn, Na, Pb, Rb, Se, Sr, Tl, U, V, Zn
Group 4	Au, Hf, Ir, Pd, Pt, Rh, Ru, Sb, Sn, Te
Group 5	B, Ge, Mo, Nb, P, Re, S, Si, Ta, Ti, W, Zr