

CARF Ref (I or X No.)	
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CARF Project Scope Form -- 2020

A. Your details (* required fields):

*Name:			
*Staff username or Student Number: <i>(For QUT clients only)</i>			
*Position Title:			
*Organisation /Faculty /School:			
*Address (no PO box):			
*Mobile Phone:			
*Institutional E-mail:			
*Primary Supervisor's Name:			
*Primary Supervisor's E-mail:			
*Project Title:			
*Estimated Start Date:		*Estimated End Date:	

B. Payment details

At the kick-off meeting, CARF staff will discuss the project costs with you and your project leader or supervisor. If required, a costing proposal will be provided for your approval before any work commences. For indicative pricing and conditions of access, please refer to: (QUT HiQ portal) - [Central Analytical Research Facility \(CARF\) bookings](#)

*Which Faculty are you enrolled in or employed by? _____

Account code (QUT clients only): _____

ABN number (non-QUT Clients only): _____

*Is this project industry funded? (Select 'yes' for projects with commercial turnaround time) Yes No

C. Risk Assessment

For SEF & IHBI projects only: MAPS#: _____

For other projects: please attach details of project risk assessment and any approved standard operating procedures you will use in your project.

D. Project Summary

Briefly state your project goals and research question and how it relates to CARF facilities.

E. Sample Declaration

- | | Yes | No |
|--|-----------------------|-----------------------|
| *I declare that the sample contains chemical material:
(Must fill in Section 1 of the CARF Sample Declaration form) | <input type="radio"/> | <input type="radio"/> |
| *I declare that the sample contains biological material:
(Must fill in Section 2 of the CARF Sample Declaration form) | <input type="radio"/> | <input type="radio"/> |

F. Analysis details (please tick all that apply)

Elements and Isotopes Lab - P624, P814 and R431

Elemental Analysis: CNS or CHNS and O		
- Solid - CNS only (plants min. 1g; soil min. 3g)		- Water - TOC, IC, and TN
- Solid - CHNS and O (up to 10 mg)		
Major and Trace Elements:		
- Solid – without digestion: LA-ICPMS		- Liquid & digested/extracted solids: ICPOES (ppm – ppb range)
- Solid – Microwave or Hotplate acid total digestion or partial extraction		- Liquid & digested/extracted solids: ICPMS (ppb – ppt range)
Gas Analysis		
- Volatile gas analysis: SIFT-MS		- GC Green House Gas analysis
Nutrient and Anion Analysis: F⁻, Cl⁻, Br⁻, Nitrate, Nitrite, Ammonia, etc.		
- Colorimetric analysis (Gallery discrete analyser)		- Anions by IC (filtered /unfiltered)
Stable Isotopes Analysis:		
- ¹⁵ N and/or ¹³ C in solids by EA-IRMS (pre weighed)		- ¹⁵ N in N ₂ , N ₂ O or ¹³ C in CO ₂ Gas (by CRYOprep)
- ¹⁵ N and/or ¹³ C in solids by EA-IRMS (raw or unprepared)		- H/D, ¹⁸ O - LGR water isotope analyser
Sample Preparation and Other Analysis:		
- Water quality (pH, alkalinity, conductivity, etc.)		- Sample extraction: DIONEX ASE
- Moisture content, ashing or loss on ignition		- Freeze drying or oven drying
- Titration		- Clean room facility (Class 10000)

Other details (e.g. estimated # of samples, sampling technique, sample preparation requirements, certified reference material (CRM), Quality control samples, calibration standards, etc.)

Genomics Lab - R413 – 422

Nucleic Acid Quality Control		Next Generation Sequencing (NGS) Illumina / Pacbio
Library Preparation		Sanger Sequencing
Gene Expression		Nucleic Acid Extraction

Other details (e.g. estimated # of samples, sampling technique, sample preparation requirements, etc.)

Optical and Electron Microscopy Lab - P620 & P615

Optical microscope		EPMA (Electron Probe MicroAnalyser):	
Confocal		- Wavelength dispersive spectrometry (WDS)	
SEM (scanning electron microscopy):		- Spectroscopic cathodoluminescence (CL)	
- High vacuum		- WDS mapping (quant. Or qual.)	
- Variable pressure		FIB (focused ion beam):	
- Energy dispersive spectroscopy		- Lamella preparation	
TEM (transmission electron microscopy)		- Cross-section / Tomography	
- Morphology / Structure		Plasma FIB	
- Diffraction		Helium Ion Micr. (Zeiss Orion NanoFab)	
- Microanalysis		Thin Section Sample Preparation	
Infrared spectroscopy (FT-IR)		SEM Sample Preparation	
Raman spectroscopy		Sample crushing & grinding	

Other details (e.g. estimated # of samples, sample preparation requirements, including # of analyses or maps per sample where relevant (e.g. EPMA) etc.):

Physical & Mechanical Properties Lab - P614

Mechanical Properties		- Zeta potential	
- Nanoindentation & scratch test		- Density measurement (He pycnometer)	
- Nano DMA		- Surface area and porosity (gas adsorption)	
- Tensile testing (max 250N)		Thermal Analysis	
- Vickers micro hardness		- Simultaneous thermal analysis (TGA/DSC) to 1600°C	
- Rheology		- Differential Scanning Calorimetry (-85°C to 600°C)	
Particle and Surface Analysis		- Thermal diffusivity and conductivity	
- Particle sizing-micron scale (laser diffraction)		- Linear thermal expansion	
- Particle sizing-nano scale (DLS)		- Oxidation Induction time/temperature	

Other details (e.g. estimated number of samples, sampling technique, sample preparation requirements, etc.):

Proteomics & Molecular Mass Spectrometry - P636 & P824

GC-MS (gas samples)	High resolution MS (elemental composition)
GC-MS (other samples)	Tandem MS (structure elucidation)
Quantitative/targeted LC-MS	Untargeted LC-MS (metabolomics)
Proteomics	Surface analysis MS
Lipidomics	

Other details:

Surface Analysis

Atomic Force Microscopy – Bruker Icon
Atomic force or scanning tunnelling microscopy in vacuum (high resolution atomic-scale imaging by Omicron UHV-AFM/XA system)
Photoelectron spectroscopy (XPS/UPS) (surface chemistry, oxidation states, electronic energy levels, chemically resolved imaging by Kratos AXIS Supra)
Ellipsometry (non-destructive optical film analysis)
Surface Profilometry (Dektak)
TOF-SIMS
Quartz Crystal Microbalance

Other details (e.g. estimated # of samples, sampling technique, sample preparation requirements, etc.)

Magnetic Resonance Lab - M112

Nuclear Magnetic Resonance (NMR) Spectroscopy
- Bruker 600 MHz NMR with BBO (broadband) probe and SampleJet sample handling <ul style="list-style-type: none"> Automated 1D and 2D spectroscopy under ambient conditions
- Bruker 400 MHz NMR with QNP (¹ H, ¹³ C, ¹⁵ N, ³¹ P) or BBI (broadband) probe <ul style="list-style-type: none"> Solution-state 1D and 2D spectroscopy under ambient or VT conditions
- Bruker 400 MHz NMR with HRMAS probe for gel-state samples
Electron Paramagnetic Resonance (EPR) Spectroscopy

Other details (e.g. nuclei of interest, specialized protocols, sample types, previous experience etc.)

X-Ray and Particles Lab - P629 and P630

Powder XRD	XRF major elements
Thin film XRD	XRF trace elements
Non-ambient (heating/cryo) XRD	Stress/Texture
Capillary/Micro-diffraction	

Please estimate # of samples and indicate any specific analysis requirements, e.g. micro, in vacuo, cryo:

Please note: most X-ray analyses may require the user to obtain a Qld Health Radiation Use License, or to arrange for a CARF Technologist to undertake the analysis on a fee-for-service basis. Contact X-ray laboratory staff for further details.

Office use only:

Date of meeting/Attendees:	
CARF Primary Contact:	
CARF Instruments/Labs:	
CARF resources:	
Client's resources (i.e. standards):	
Service requested:	Basic Training in data acquisition and data analysis
	Sample preparation
	Data acquisition
	Report / Data analysis
	Method development
Quote for services provided?	Yes <input type="radio"/> Not required <input type="radio"/>

CARF Staff Signature:

Print name

Date (dd/mm/yyyy)

CARF User's Signature:

Supervisor's Signature: