

## Solid State and Elemental Analysis Unit (SSEA Unit) Chronos <sup>14</sup>C Carbon Cycling Facility

### 1. Rates for Access to Powder XRD, and X-ray crystallography surface analysis by XPS, ToF-SIMS, micro-XRF and Radiocarbon analysis.

Rates are in AU\$, ex-GST, current for 2020-2021 inclusive. Contact Dr Yu Wang for XRD annual subscription enquiries.

	Internal Rates <sup>a</sup>	Institutional Rate <sup>b</sup> (ex-GST)	Commercial Rate <sup>c</sup> (ex-GST)
<b>Training, all instruments<sup>d</sup></b>	Free	Free	Free
<b>Panalytical MPD (Cu)</b> Bulk Powder X-ray Diffractometer  Contact Yu Wang <a href="mailto:yu.wang@unsw.edu.au">yu.wang@unsw.edu.au</a>	Trained User \$30/hour	Trained User \$60/hour	Trained User \$150/hour Service Rate \$250/hour
<b>Panalytical Aeris Benchtop (Cu)</b> Bulk Powder X-ray Diffractometer  Contact Yu Wang <a href="mailto:yu.wang@unsw.edu.au">yu.wang@unsw.edu.au</a>	Trained User \$30/hour	Trained User \$60/hour	Trained User \$150/hour Service Rate \$250/hour
<b>Panalytical MRD (Cu)</b> X-ray diffraction for thin-film, grazing angle, stress, texture measurements  Contact Yu Wang <a href="mailto:yu.wang@unsw.edu.au">yu.wang@unsw.edu.au</a>	Trained User \$30/hour	Trained User \$60/hour	Trained User \$150/hour Service Rate \$250/hour
<b>Panalytical Empyrean 1 (Cu)</b> X-ray diffraction for thin-film, grazing angle, stress, texture measurements  Contact Yu Wang <a href="mailto:yu.wang@unsw.edu.au">yu.wang@unsw.edu.au</a>	Trained User \$30/hour	Trained User \$60/hour	Trained User \$150/hour Service Rate \$250/hour
<b>Panalytical Empyrean 2 (Co)</b> Bulk Powder X-ray Diffractometer  Contact Yu Wang <a href="mailto:yu.wang@unsw.edu.au">yu.wang@unsw.edu.au</a>	Trained User \$30/hour	Trained User \$50/hour	Trained User \$150/hour Service Rate \$250/hour
<b>Panalytical Empyrean 3 (Ag)</b> Bulk Powder X-ray Diffractometer with position sensitive detector  Contact Yu Wang <a href="mailto:yu.wang@unsw.edu.au">yu.wang@unsw.edu.au</a>	Trained User \$30/hour	Trained User \$50/hour	Trained User \$150/hour Service Rate \$250/hour

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<b>Bruker D8 thin-film XRD (Cu)</b> 5kW rotating anode X-ray source with 2D detector and mapping stage for HRXRD, RSM and 2DXRD  Contact Yu Wang <a href="mailto:yu.wang@unsw.edu.au">yu.wang@unsw.edu.au</a>	Trained User \$30/hour	Trained User \$60/hour	Trained User \$150/hour Service Rate \$250/hour
<b>Rigaku Smartlab thin-film XRD (Cu)</b> 9kW Rotating anode X-ray source for HRXRD, fast RSM Contact Yu Wang <a href="mailto:yu.wang@unsw.edu.au">yu.wang@unsw.edu.au</a>	Trained User \$30/hour	Trained User \$60/hour	Trained User \$150/hour Service Rate \$250/hour
<b>CRYSTALLOGRAPHY</b>  <b>Bruker Kappa Apex (Mo) Single-crystal X-ray diffractometer</b>  <b>Bruker D8 Quest (Mo) Single-crystal X-ray diffractometer</b>  Contact Mohan Bhadbhade <a href="mailto:m.bhadbhade@unsw.edu.au">m.bhadbhade@unsw.edu.au</a>	Co-authorship Rate \$130/sample  Data collection only \$80/sample  Structure Solution of Synchrotron Data \$50/dataset	Service Rate \$130/sample	Service Rate \$450/sample
<b>Mikropack NanoCalc 2000 UV-Vis-NIR</b> Contact Yu Wang <a href="mailto:yu.wang@unsw.edu.au">yu.wang@unsw.edu.au</a>	Trained User Free	Trained User Free	Trained User Free
<b>SURFACE ANALYSIS</b>  <b>Thermo ESCALAB 250Xi X-ray Photoelectron Spectrometer (XPS)</b> Contact Bill Gong <a href="mailto:b.gong@unsw.edu.au">b.gong@unsw.edu.au</a>	Service Rate \$70/hour Trained User \$40/hour	Service Rate \$172.50/hour	Service Rate \$287.50/hour
<b>IONTOF Time of Flight Mass Spectrometer (ToF-SIMS)</b> Contact Bill Gong <a href="mailto:b.gong@unsw.edu.au">b.gong@unsw.edu.au</a>	Service Rate \$70/hour Trained User \$40/hour	Service Rate \$172.50/hour	Service Rate \$287.50/hour
<b>Alpha-Step D-600 Stylus Profiler</b> Contact Sonia Yin <a href="mailto:songyan.yin@unsw.edu.au">songyan.yin@unsw.edu.au</a>	Trained User Free	Trained User Free	Trained User Free

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<b>Polos Spin150i spin coater</b> Contact Sonia Yin <a href="mailto:songyan.yin@unsw.edu.au">songyan.yin@unsw.edu.au</a>	Trained User Free	Trained User Free	Trained User Free
<b>RADIOCARBON</b>  Contact Chris Turney <a href="mailto:c.turney@unsw.edu.au">c.turney@unsw.edu.au</a>	Service Rate Sample preparation (if required) \$100/sample  Accelerator mass spectrometry \$100/sample	External collaborative rate \$300/sample  Please contact Chris Turney to discuss any collaborative proposals.	The Chronos Facility is not currently open for commercial samples in 2020.
<b>Micro-XRF Mapping</b> Contact Helen Wang <a href="mailto:huixin.wang@unsw.edu.au">huixin.wang@unsw.edu.au</a>	\$30 training charge \$30/hour (8am-5pm) \$100 overnight Free access for data analysis.	\$60/hour for service measurements	\$60/hour for service measurements

- (a) Internal rate applicable to all UNSW account holders (including affiliated institutes), ADFA and also LIEF Partners.  
 (b) Institutional rate is applicable to all other universities, and government institutions including ANSTO, and CSIRO.  
 (c) Commercial rate covers all other non-government users.  
 (d) Training on SSEA Unit equipment is **free for any user**.

## 2. Bulk Elemental Analysis Rates: ICP, XRF, LC-OCD, IC, combustion analysis for DOC, DIC, and organic solids

Elemental analysis is usually charged per sample. The rate can vary significantly depending on the number of samples, the type of sample preparation, and the number of analytes requested.

A separate pricing sheet is available for services from the **ICP Laboratory** (sample grinding, microwave acid digestion, ICP-MS, ICP-OES, LC-OCD, anion chromatography, combustion analysis for DOC, DIC). For users that have specific enquiries about services from our ICP Laboratory please contact Rabeya Akter ([r.akter@unsw.edu.au](mailto:r.akter@unsw.edu.au)), Khorshed Chinu ([k.chinu@unsw.edu.au](mailto:k.chinu@unsw.edu.au)) or Maria Veronica Chandra-Hioe ([m.v.chandra-hioe@unsw.edu.au](mailto:m.v.chandra-hioe@unsw.edu.au)).

A separate pricing sheet for services from the **XRF Laboratory** (XRF and micro-XRF mapping, rock crushing, pressed pellets, CHNSO combustion analysis of solids). For users that have specific enquiries about services from our XRF Laboratory please contact Helen Wang ([huixin.wang@unsw.edu.au](mailto:huixin.wang@unsw.edu.au)) or Brit David ([brit.david@unsw.edu.au](mailto:brit.david@unsw.edu.au)).

## 3. Research Grant Budgets

When an **in-kind** contribution is requested in your application, please use **\$175/hour** to cover MWAC salaries, costs for power, repairs etc provided by the University. If costs are on a per sample basis, assume 1 hour per sample.

## 4. Enquiries

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