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X-ray Diffraction Laboratory - (XRD)

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Who we are

X-ray diffraction is the most common technique to determine the arrangement of atoms in bulk microcrystalline films and solids. The XRD laboratory hosts 10 diffractometers and 20 processing computers with dedicated software and diffraction databases supporting 450 trained users from UNSW and external clients. We offer comprehensive X-ray diffraction and scattering analyses using a range of X-ray sources and measurement geometries. ~~Our technical team is proficient in various XRD technologies and has excellent knowledge and skills for handling complex analysis..~~

Our team is proficient in a range of XRD technologies and has exceptional expertise in handling complex analyses.

Funding partners:

UNSW SYDNEY

Australian Government
Australian Research Council

Capabilities

Powder X-ray Diffraction (XRD)

Crystal phase identification and quantitative diffraction analysis, such as phase fraction, unit cell parameters, crystallite size & micro-strains.

Thin-film X-ray Diffraction (TF-XRD)

Phase identification of polycrystalline films with grazing incidence method, and epitaxial film analysis for semiconductor materials.

Instruments

Panalytical Empyrean XRD Systems

Panalytical MRD Cu Thin-film XRD

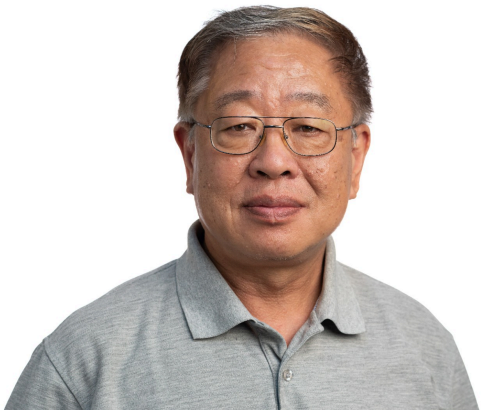
Panalytical Aeris Benchtop XRD

Rigaku Smartlab Cu Rotating Anode Thin-film XRD

Bruker D8 Discover Cu Rotating Anode Thin-film XRD

See all

Our people



Dr Yu Wang

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XRD Technical Officer

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Also Include Dr. Anjali Krishnankutty and Dr Mohammadmoein Seyfouri

Fees Pl. refre to attachement

XRD Fees

Internal users enjoy a subsidised flat rate of **$35/hour** for self-operation.

For XRD services, client service fees are determined by the complexity and time required. Examples include:

> **Phase Identification**: $105 per sample
>
> **Quantitative Analysis**: $210 per sample (requires elemental analysis results, e.g., XRF)

For further details or enquiries, please contact saroj.bhattacharyya@unsw.edu.au.

Internal Fees Overview:

Service Type

XRD Consulting Services

General Phase Identification (Phase numbers are less than 6)

Rate ($/sample)

$105

Additional cost

Notes

Sample quantity 1-5 grams

XRD Consulting Services

General Phase Identification (Phase numbers are less than 6)

Rate ($/sample)

$165

Additional cost

Notes

Sample quantity < 0.5 gram (capillary stage)

XRD Consulting Services

Clay and Rocks Phase Identification

Rate ($/sample)

$140

Additional cost

$30/sample (if crushing required)

Notes

Elemental analysis result is prerequisite

XRD Consulting Services

Quantitative analysis (Rietveld refinement

Rate ($/sample)

$210

Additional cost

$70/hour if sample preparation required

Notes

Elemental analysis result is pre-requisite; sample quantity >10 grams

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XRD Consulting Services

Quantitative analysis with provided scan and XRF result

Rate ($/sample)

$105

Additional cost

Notes

Important Notes

How to access

To book a consultation or schedule training for Powder XRD or thin-film XRD, please email us at xrdlab@unsw.edu.au.

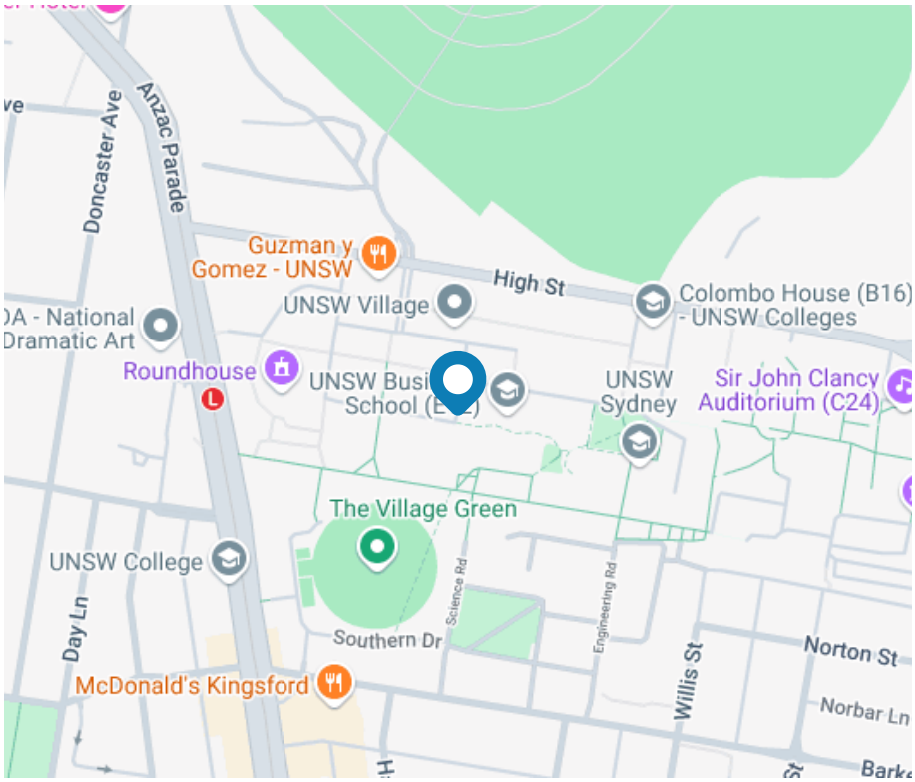
1 **Registration in ALCS**

2 **Project description form**

3 **New user meeting**

4 **Lab induction & training**

Contact us



X-ray Diffraction Laboratory

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Resources

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Complementary services

ICP Laboratory

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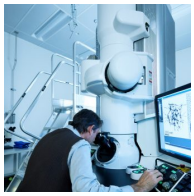

Electron Microscope Unit (EMU)

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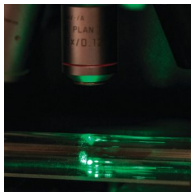

Spectroscopy Laboratory (SpecLab)

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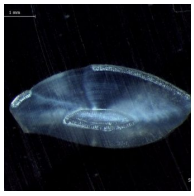

Bioanalytical Mass Spectrometry Facility (BMSF)

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NMR Facility (NMR)

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News, Media & Events

About us

UNSW

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UNSW CRICOS Provider

Code: 00098G

TEQSA Provider

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ABN: 57 195 873 179

Acknowledgement of Country

UNSW is located on the unceded territory of the Bidjigal (Kensington campus), Gadigal (City and Paddington Campuses) and Ngunnawal peoples (UNSW Canberra) who are the Traditional Owners of the lands where each campus of UNSW is situated.

The Uluru Statement