



Walter Curlook Materials Characterization & Processing Laboratory

(User fee structure effective from Mar 01, 2021)

XRPD Rigaku MiniFlex-600 (Bragg-Brentano)	Service request & Authorized user rates ⁽¹⁾		
	UofT Authorized User ⁽²⁾ (per hour)	Service request ⁽³⁾ (per sample)	Analysis (per sample)
MSE	\$20	\$40	n/a ⁽⁴⁾
Other UofT Departments	\$25	\$50	n/a ⁽⁴⁾
Industry/other Universities	n/a	\$60	+\$100 ⁽⁵⁾

- (1) Sample preparation fee applies will be charged if sample grinding, or special holder preparation is required.
- (2) Training is required to use the MiniFlex-600. Onsite training takes ~3 hours at a cost of \$300, which include any data collected during the session. Available to UofT graduate students and PDFs only.
- (3) X-ray diffraction - raw data only.
- (4) Software for analysis (PDXL-2) is available online for WC-Lab users, free of charge. Training on how to use the software (or part thereof) will be charged at \$100/h.
- (5) Phase ID only.

XRPD Powder samples Micro-XRD Coating and large samples D8 Discover Plus ⁽⁵⁾	Service request rates ⁽¹⁾		
	XRPD or Micro-XRD (Kα1 + Kα2) (per sample)	XRPD or Micro-XRD High Resolution (Kα1) ⁽²⁾ (per sample)	Analysis (per sample)
MSE	\$50	\$100	n/a ⁽³⁾
Other UofT Departments	\$60	\$120	n/a ⁽³⁾
Industry/other Universities	\$80	\$140	+\$100 ⁽⁴⁾

- (1) Sample preparation fee applies will be charged if sample grinding, or special holder preparation is required.
- (2) Monochromator (Ge004 ACC2) added to optic to eliminate Kα2.
- (3) Software for analysis (Diffract.EVA) is available online for WC-Lab users free of charge. Training on how to use the software (or part thereof) will be charged at \$100/h.
- (4) Phase ID only.
- (5) UofT Authorized User (AU): training is required to use the D8 Discover Plus. Onsite training takes ~6 hours at a cost of \$600. Available to UofT graduate students and PDFs only. One AU per research group only. After training, AU can book the diffractometer (booking fee - \$50/h).

High Resolution-XRD ⁽¹⁾ Thin Films Coplanar Diffraction D8 Discover Plus	Service request rates ⁽²⁾			
	Coupled Scan ⁽³⁾ Omega (Omega-2Theta) (per sample)	Reciprocal Space Map ⁽³⁾ (per sample)	Reflectometry ⁽³⁾ (per sample)	Rocking Curve ⁽³⁾ (per sample)
MSE	\$120	\$150	\$100	\$100
Other UofT Departments	\$140	\$170	\$120	\$120
Industry/other Universities	\$160	\$200	\$140	\$140

- (1) Monochromator (Ge004 ACC2) added to optic to eliminate Ka2.
(2) Sample preparation fee applies will be charged if sample grinding, or special holder preparation is required.
(3) Raw data only. Software for analysis (Diffract.EVA) is available online for WC-Lab users free of charge. Training on how to use the software (or part thereof) will be charged at \$100/h.

Laser PSA Horiba LA 950	Service request rates (per sample)		
	Raw data ⁽¹⁾	Data & Analysis ⁽¹⁾	Ethanol or Isopropanol ⁽²⁾
MSE	\$30	\$50	\$10
Other UofT Departments	\$40	\$60	\$10
Industry/other Universities	\$60	\$80	\$10

- (1) Samples are analyzed using de-ionized (DI) water as the dispersing liquid.
(2) Fluid fee will be applied if Ethanol or Isopropanol is required as the dispersing liquid.

STA ⁽¹⁾ Netsch STA449F3	Service request rates			
	TGA ⁽²⁾ per hour	TGA/DSC ⁽²⁾ per hour	Analysis per sample	Crucible per sample
MSE	\$40	\$80	+ \$40	+\$15
Other UofT Departments	\$60	\$90	+ \$60	+\$15
Industry/other Universities	\$80	\$100	+ \$80	+\$15

- (1) Temperature ranges from 100 °C to 1200 °C.
(2) Raw data only. One crucible per sample will be charged.

ICP-OES ThermoFisher iCAP 6300	Service request & Authorized user rates	
	UofT Authorized User ⁽¹⁾ per hour	Service ⁽²⁻³⁾ per hour
MSE	\$60	\$100
Other UofT Departments	\$80	\$150
Industry/Other Universities	n/a	\$225

- (1) ICP-OES training is required to become an Authorized User. Available to UofT graduate students and PDFs only.
(2) Minimum 1h (1-sample + 4-standards). SCP-Science high quality standards are provided by WC-Lab. HF-samples or organic samples are not accepted.
(3) Sample preparation for ICP-OES is performed at WC-Lab using Borate-Fusion or Microwave digestion technique, sample preparation fees will apply.

Sample Preparation	Authorized user rates (per hours)			
	Mixer Mill MM 400	Microlab-600 Dilution	Microwave Digestion	Fusion
MSE	\$30	\$30	\$30	\$30
Other UofT Departments	\$40	\$40	\$40	\$40

Sample Preparation	Service request rates (per sample)			
	Mixer Mill MM 400	Microlab-600 Dilution	Filtration 100 ml - 45 µm	Filtration 50 ml - 25 µm
MSE	\$20	\$30	\$10	\$10
Other UofT Departments	\$30	\$40	\$15	\$15
Industry/Other Universities	\$40	\$50	\$20	\$20

Sample Preparation	Service request rates (per sample)			
	Microwave Digestion Max. 0.1 g 100 ml	Microwave Digestion Max. 0.05 g 50 ml	Fusion Max. 0.1 g 100 ml	Fusion Max. 0.05 g 50 ml
MSE	\$40	\$30	\$40	\$30
Other UofT Departments	\$60	\$50	\$60	\$50
Industry/Other Universities	\$80	\$70	\$80	\$70

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Acronyms

XRD: X-ray Diffraction

XRPD: X-Ray Powder Diffraction

PSA: Particle Size Analyzer

STA: Simultaneous Thermal Analyzer

ICP-OES: Inductively Coupled Plasma - Optical Emission Spectrometer