University of Engineering & Technology, Lahore, Pakistan Centre for Nanotechnology and Advanced Materials Research (CNAMR)

Department of Physics

# X-Ray Diffractometry

Name: Registration no: (for students):

Designation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name of Supervisor (if any):

Institute/Department:

Project title (if any):

Cell number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ E-mail: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| * Solid | * Powder | * Thin Film | * Coating |

Sample Type: Select one

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| * Non-toxic | * Toxic | * Irritating | * Flammable | * Hazardous | * Don’t know |

Sample information:

Any precaution needed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Sample Material: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

No. of samples: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Sample Identity: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Scan Range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sample shape and dimensions: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (in case of powder samples mention the mass)

**Note: (i)** Powder sample should be finely ground that can be easily compressed to fit into the sample mold.

**(ii)** Only samples of the following dimensions are allowed.

(a) Square samples…………Length x Width x Thickness (max.) = 2.5 cm × 2.5 cm × 0.4 cm

(b) Disc shaped samples Diameter (max.) = 3.5 cm, Thickness (max.) = 0.4 cm

(c) Thin Films…Flat samples…. Length x Width = 1x1 cm2 (min.) to 5x5 cm2 (max.)

|  |  |  |
| --- | --- | --- |
| * Powder diffraction | * Texture Analysis | * GIXD |

Test required through XRD:

**Note:** Kindly provide packed rewritable new CD in order to acquire the data.

* *Results of powder diffraction will be given in a text/excel file containing diffraction data and conditions.*
* *In case of Texture analysis, a powder diffraction data will also be provided.*
* *For GIXD (grazing incidence Xray diffraction) used for thin film, mention film thickness \_\_\_\_\_\_\_\_\_\_\_\_\_*

Any other information about sample: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Deposit Details: Habib Bank Ltd. (Engineering University Lahore Branch)**

**Title: “UET LHR Center for Nanotechnology” Account number: 01287903194101**

**Paid challan form No. (Attach a copy of the paid challan form)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Applicant’s Signature Supervisor’s** (if any) (Signature and Stamp)

# Chairperson/Head/Director: Incharge

**Signature and Stamp XRD Laboratory**

# Director CNAMR

**Charges per sample:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Perspective Clients** | **Powder XRD**  **(Quick scan)** | **Powder XRD**  **(Slow scan)** | **Texture Analysis** | **GIXD** |
| 1. | University of Engineering & Technology, Lahore and allied campuses. | Rs. 700/- | Rs. 1000/- | Rs.3000 | Rs. 1500/- |
| 2. | Educational institutions. | Rs. 2000/. | Rs. 3000/- | Rs.5000 | Rs. 3500/- |
| 3. | Commercial samples (industries etc.) | Rs. 4000/. | Rs. 6000/- | Rs.10000 | Rs. 7000/- |

* **The rates for XRD samples analysis with other special requirements will be decided by the Committee/Director**