

NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR

DEPARTMENT OF Metallurgical & Materials
Engineering

REPORT

TITLE Characterization of worn
surfaces by XRD

Name Deep Narayan

Semester 7th

Roll No. 20MM8051

Section -

Year 4th (2023)

Signature Deep

Date of Experiment 4/9/2023

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DEPARTMENT OF Metallurgical & Materials Engineering. PAGE NO1.....

Title:

Characterisation of worn surfaces by XRD

Aim:

Phase determination of worn surfaces of Aluminium sample used in pin-on-disk experiment

Theory & Procedure:

Take the aluminium sample used in pin-on-disk experiment and clean it so that it is free from contamination mount the sample to XRD machine for diffraction pattern that consists of peak corresponding to the crystal lattice plane of the phase present in the sample

Observations:

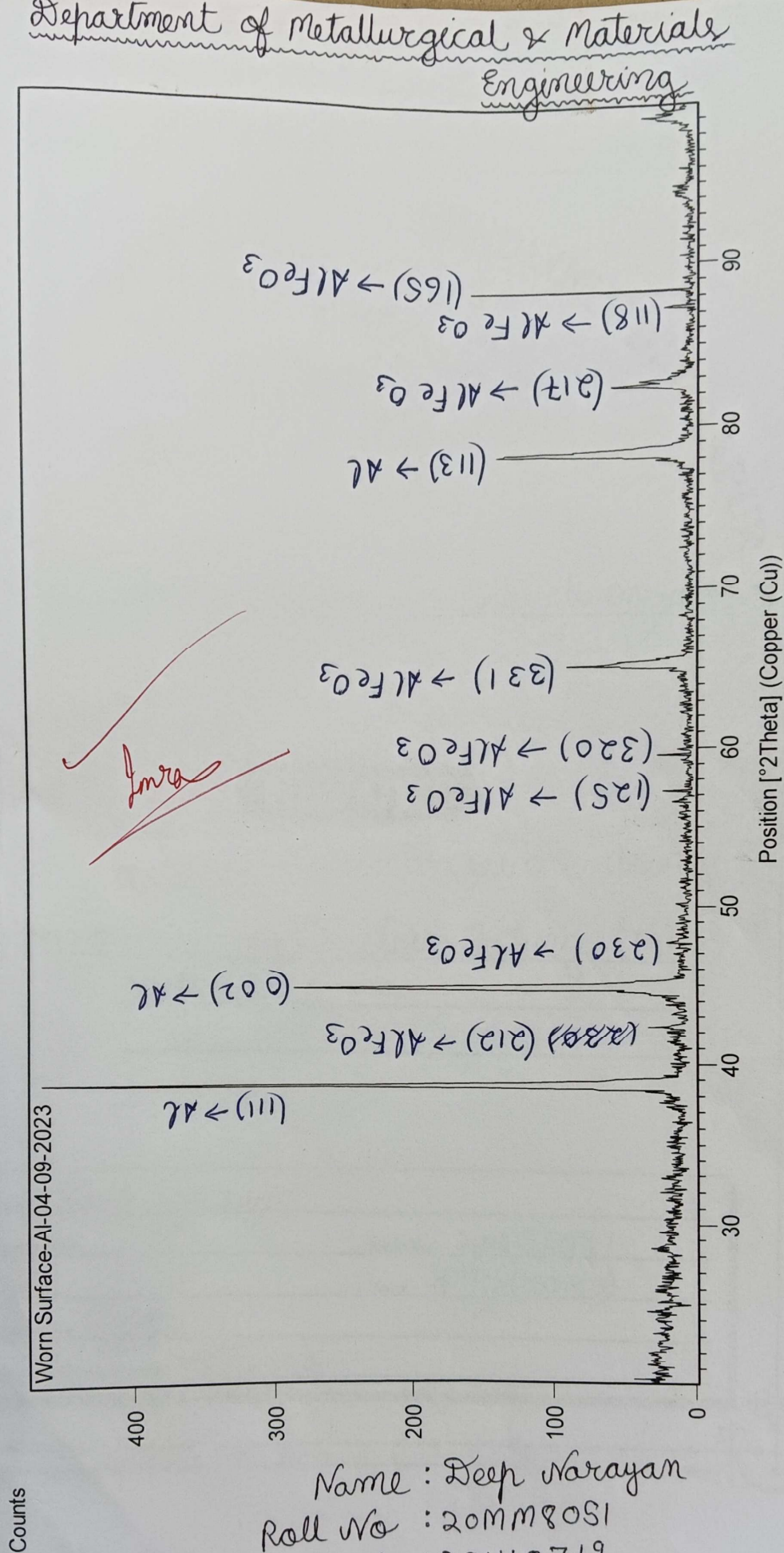
Peak No.	2θ (in degree)	(h k l)	Phase
1	38.292	111	Al
2	42.556	212	AlFeO ₃
3	44.508	002	Al
4	48.523	230	AlFeO ₃
5	57.365	125	AlFeO ₃
6	59.723	320	AlFeO ₃
7	65.855	331	AlFeO ₃
8	77.809	113	Al
9	83.659	217	AlFeO ₃
10	87.401		AlFeO ₃
11	88.886	165	AlFeO ₃

Signature*Deek*.....

Date4/9/2023.....

Date : 4-9-2023

B1, B3 & B5



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