

# 臺科大第一代與第二代 D2 PHASER X光繞射儀操作資格考試細則 (NTUST D2 PHASER (Gen 1 & 2) XRD Operation Qualification Exam)

## 一、申請條件Application Requirements

必須完成本校環安室舉辦之「輻射防護安全講習」，並取得結業證明。取得結業證明後，方可申請參加 X 光繞射儀操作資格考試。

Applicants must complete the "Radiation Protection and Safety Course" organized by the NTUST Environmental Safety Office and obtain a course completion certificate.

Only after obtaining the certificate can one apply for the X-ray diffractometer qualification examination.

## 二、考試內容Examination Contents

1. 儀器知識與安全 (Instrument Knowledge & Safety)：需具備相關專業知識與作業安全觀念。

凡修習以下任一相關課程並取得學分者，請檢附該課程之成績單，經單位審核確認後，方可正式生效。

1.Instrument Knowledge & Safety : Candidates must have knowledge of the instrument and operational safety.

Those who have completed any of the listed relevant courses and earned credits must submit the transcript. Upon review and approval by the unit, the qualification will become valid.

2.實際操作 (Operating Test)：測驗實際儀器操作能力與正確使用方式。

2.Operating Test : Evaluates practical operation skills and correct usage of the instrument.

課程名稱Course Title	學期semester	授課系所Department	教師姓名Instructor(s)
愛克斯光繞射與結晶學 Introduction to X-ray Crystallography and Diffraction	上學期 First	材料系(MSE)	Adhimoorthy
材料實驗方法 Experimental Methods of Materials	上學期 First	機械系(ME)	周振嘉 教授(Chen-Chia Chou)
結晶與繞射導論 Introduction to X-ray Crystallography and Diffraction	上學期 First	材料系(MSE)	施劭儒 教授(Shao-Ju Shih)、 周賢鎧 教授(Shyan-Kay Jou)
X 光繞射原理與應用 Principles and Applications of X-ray Diffraction	上學期 First	化工系(CHE)	葉旻鑫 教授(Min-Hsin Yeh)
愛克斯光繞射與結晶學 X-ray Diffraction and Crystallography	下學期 second	材料系(MSE)	梁鍵隴 教授(Chien-Lung Liang)、
愛克斯光繞射及結晶學 X-Ray Diffraction and Crystallography	下學期 second	機械系 (ME)/	黃彥瑞 教授(Yen-Jui Huang)
材料分析	下學期	材料系(MSE)	施劭儒 教授(Shao-Ju

Introduction to X-ray Crystallography and Diffraction	second		Shih)、陳詩芸 教授(Shih-Yun Chen)
高分子表徵與分析 Polymer Characterization and Analysis	下學期 second	材料系(MSE)	蕭育生 教授(Yu-Sheng Hsiao)
高等材料表面分析 Advanced Surface Characterizations for Materials	下學期 second	材料系(MSE)	朱瑾 教授(Jinn P. Chu)、Hairus教授

### 三、其他注意事項Additional Notes

1.如有課程名稱不同但內容相近者，請主動提供課綱供審核認定。

1. If the course title differs but the course content is similar, students are required to submit the syllabus for review.

### 四、聯絡方式Contact Information

如有相關疑問，請洽詢儀器技術員

For any inquiries, please contact the instrument technician.

●儀器負責技術員：吳盈瑩 小姐

Instrument Technician: Ms. Ying-Ying Wu

TEL: (02)2733-3141#7413

E-Mail: [ying22.wu@mail.ntust.edu.tw](mailto:ying22.wu@mail.ntust.edu.tw)

## D2 Phaser XRD 考核規則 Operating Exam Regulations

### 1. 事前訓練 (Pre-training)

申請測驗者，應請各實驗室已獲操作資格者先行指導與訓練。

Applicants must first receive guidance and training from laboratory members who are already qualified to operate the instrument.

### 2. 身分驗證 (ID Verification)

請攜帶學生證，嚴禁冒名頂替。若經查屬實，申請測驗者及代考者一律取消使用資格。

Applicants must bring their student ID. Impersonation is strictly prohibited. If verified, both the applicant and the surrogate test taker will be permanently disqualified from instrument usage.

### 3. 測驗時間 (Test Duration)

測試總時間為 30 分鐘。超時即視為未通過，請妥善掌控作答時間。

The total duration of the test is 30 minutes. Exceeding the time limit will result in an automatic failure. Please manage your time accordingly.

### 4. 評分標準與答題時間 (Scoring Criteria and Answering Time) :

判定標準：若任意兩題未能正確且完整回答，該次考核即判定為不通過。

●時間限制：每題思考時間為 1 分鐘；經考官提示後，該題可再延長 1 分鐘思考時間。

●只要有 2 題未能正確且完整回答，即判定不通過。

Evaluation Standard: If any two questions are not answered correctly and completely, the assessment will be considered failed.

●Time Limit: Each question allows 1 minute of thinking time. After receiving a hint from the examiner, an additional 1 minute is given for that question.

●If two questions are not answered correctly and completely, the assessment will be deemed unsuccessful.

### 5. 補考規定 (Retest Policy)

補考時間需至少間隔 1 週，方可再行安排。

A retest can only be scheduled at least one week after the current test date.

### 6. 考核次數限制 (Attempt Limit)

若考核 3 次未通過，該申請者即永久喪失本儀器的自行操作資格。

Applicants who fail the exam three times will permanently lose the qualification to operate this instrument independently.

## D2 Phaser XRD 考核內容 Operating Exam Content

姓名 Name	系所 Department	指導教授 Advisor	考核日期 Examination Date	
項次 No.	考核內容 Examination Content	合格 Pass	不合格 Fail	
1	操作前機台狀態檢查 (Google Form 填寫) Pre-operation instrument status check (Google Form submission)			
2	樣品載台類型之選用與正確使用方式 Selection and correct usage of sample holders			
模擬案例 (實際操作演練) Simulation case (hands-on practice)				
3	相關參數之設定操作 Parameter setting operations			
4	判讀圖譜：參數間距與時間之具體表現 Interpretation of diffraction patterns: specific performance of parameter increment and measurement time			
5	合理間距與量測時間之調整方式 Adjustment methods for appropriate increment and measurement time			
6	開始量測之步驟 (On、Start) Steps to start measurement (On, Start)			
7	辨識量測已開始之方式 (至少 3 項) Methods to confirm that measurement has started (at least 3 items)			
8	辨識量測已結束之方式 (至少 3 項) Methods to confirm that measurement has ended (at least 3 items)			
9	結束量測之步驟 (Off、Stop) Steps to end measurement (Off, Stop)			
10	檔案存放位置與格式設定 File storage location and format setting			
11	操作後機台狀態檢查 (Google Form 填寫) Post-operation instrument status check (Google Form submission)			
12	載臺借用規則說明 Regulations for sample holder borrowing			
13	自行操作時段之預約方式 Reservation method for independent operation sessions			