

# 國立清華大學貴重儀器使用中心之掃描探針顯微鏡(SPM)系統功能列表

多功能大樣品掃描探針顯微鏡			掃描探針顯微鏡整合共軛焦光學分析系統			
Dimension Icon AFM			Catalyst AFM	Optical Analysis	Integrated Analysis	
基本量測功能	1. Contact Mode AFM (接觸式原子力顯微鏡)	力量分析量測	13. Force modulation	1. Contact Mode AFM (接觸式原子力顯微鏡)	1. Inverted Microscope (倒立式光學顯微鏡)	1. AFM / Confocal PL images mapping
	2. Tapping Mode AFM (輕敲式原子力顯微鏡)		14. Force Volume mapping (力曲線容積顯微術)	2. Tapping Mode AFM (輕敲式原子力顯微鏡)	2. Confocal Raman spectrum (共軛焦微拉曼光譜)	2. AFM / Confocal Raman images pping
	3. ScanAsyst Mode(自動掃瞄模式)		15. Force Curve (單點式力場曲線)	3. Lateral Force AFM, LFM (側向力原子力顯微鏡)	3. Confocal PL spectrum (共軛焦微螢光光譜)	3. AFM / FLIM images mapping
	4. Lateral Force AFM, LFM (側向力原子力顯微鏡)		16. Thermal tuning for k calibration (探針力常數校正)	4. Interleave control (線重複提升掃瞄模式)	4. Confocal PL image (共軛焦微螢光影像)	4. AFM image / Single point confocal PL spectrum analysis
	5. Interleave control (線重複提升掃瞄模式)		17. Picoforce interface	5. Electrostatic Force Microscopy, EFM (靜電力顯微鏡)	5. Time-Related Single Photon Counting , TCSPC (時間相關單光子計數系統)	5. AFM image / Single point confocal Raman spectrum
	6. Electrostatic Force Microscopy, EFM (靜電力顯微鏡)		18. PeakForce QNM (全自動掃瞄參數控制之材料性質分析)	6. Magnetic Force Microscopy, MFM (磁力顯微鏡)	6. Fluorescence lifetime imaging microscopy, FLIM (螢光生命週期顯微術)	6. AFM image / Single point fluorescence lifetime spectrum

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Dimension Icon AFM			Catalyst AFM	Dimension Icon AFM	Catalyst AFM	
基本量測功能	7. Magnetic Force Microscopy, MFM (磁力顯微鏡)	電性分析量測	19. Scanning Tunneling Microscopy, STM (掃描式穿隧電流顯微鏡)	7. Force Curve (單點式力場曲線)	7. Femtosecond pulse laser (飛秒級超快脈衝雷射)	7. AFM image / Single point up-conversion analysis
	8. Piezoresponse Force Microscopy, PFM (壓電力顯微鏡)		20. Peak Force Tunneling AFM, PF-TUNA (導電輕敲型原子力顯微鏡)	8. Thermal tuning for k calibration (探針力常數校正)	8. Up-conversion (飛秒時間解析上轉換光譜)	
	9. Torsional Resonance Mode AFM (扭轉共振式原子力顯微鏡)	環境控制	21. 昇溫 (室溫至 250°C)	9. ScanAsyst Mode (自動掃描模式)		
	10. Digital Q control (Q 因子控制加強 EFM/MFM/SKM)		22. 降溫 (室溫至-35°C)	10. PeakForce QNM (全自動掃描參數控制之材料性質分析)		
	11. Surface Potential Microscopy , SPoM (表面電位顯微鏡)		23. Enviromental cell (Scan in N <sub>2</sub> /Air / Liquid)	11. Scanning in liquid-cell (液態掃描)		
	12. Nano-Lithography (奈米微影術)			12. MIRO 光學整合介面		