

	Reflectivity/small angle Scattering	Rocking Curve
Speciment alignment	Speciment alignment	Speciment alignment
Sacn sequence	omega->Z	omega->Z
Repeat	續作精確校正：1，否則：2	續作精確校正：1，否則：2
threshold	1/10 of incident X-ray intensity	1/10 of incident X-ray intensity
peak search method	Peak top	Peak top
ATT	incident X-ray:10,000~300,000	incident X-ray:10,000~300,000
DS	01~0.2	1
SS	same as DS or twice of DS	1
RS	same as SS	1
Start/end	由SET決定	由SET決定
Sampling step	由SET決定	由SET決定
Speed	由SET決定	由SET決定
Back	由SET決定	由SET決定
Precise alignment	Precise alignment	Precise alignment
Sacn sequence	omega->Z->Rx	omega->Rx,Phi=0
for In Plane	orthogonal:Omega->Z(fine) simplified:Rx,Ry->Z	omega(fine)
Repeat	2	2~3
threshold	1/10 of Peak intensity	1/10 of peak intensity
peak search method	Peak top or FWHM	Peak top or FWHM
2theta/Omega	twice the total reflection angle 密度1~3：0.4，4~10：0.5，10以上：0.6	Diffraction angle(移到理論值,作omega Scan,移到最高值,再作2Theta Scan找到2Theta最高值)
ATT	incident X-ray:10,000~300,000	peak intensity:10,000~200,000
DS	01~0.2	1
SS	same as DS or twice of DS	1
RS	same as SS	1
Start/end	如範例(Z:-0.5~0.5,Omega:-0.5~0.5,Rx:-3~3)	如範例(Omega:-0.5~0.5,Rx:-3~3)
Sampling step	如範例(Z:0.01,Omega:0.01,Rx:0.05)	如範例(Omega:0.01,Rx:0.05)
Speed	如範例(Z:2,Omega:2,Rx:15)	如範例(Omega:2,Rx:15)
Back	如範例(Z:0.5,Omega:0.5,Rx:3)	如範例(Omega:0.5,Rx:3)
Profile measurement	Profile measurement	Profile measurement
Scan axis	2theta/omega	2theta/omega
Scan method	continuous/FT	continuous/FT
range setting	Absolute	Absolute/Relative
Start/end	0-10	依需要
Sampling step	0.001~0.01(需小於1/10 frequency of oscillation) 依膜厚決定1~50nm:0.01，~200:0.004，>200:0.001;小角散射0.01	1/5 of FWHM
Speed	1~5, 必須小於step的500倍	1~5, 必須小於step的500倍
ATT	incident X-ray:10,000~300,000 cps	peak intensity:10,000~200,000
DS	與精確校正時相同	1
SS	與精確校正時相同	1
RS	與精確校正時相同	1
Origin-2theta	small angle Scattering設為0	不用
Origin-omega	small angle Scattering設為0	不用
Origin-2thetaChi	small angle Scattering設為Off set	不用
Origin-Phi	smallangle Scattering設為0	不用

	Out of plane(XRD pattern)	Preferred orientation/Crystal	Thin film
Speciment alignment	Speciment alignment	Speciment alignment	Speciment alignment
Sacn sequence	omega->Z	omega->Z	omega->Z
Repeat	2	2	2
threshold	1/10 of incident X-ray intensity	1/10 of incident X-ray intensity	1/10 of incident X-ray intensity
peak search method	Peak top	Peak top	Peak top
ATT	incident X-ray: 10,000~300,000	incident X-ray: 10,000~300,000	incident X-ray: 10,000~300,000
DS	1	1	01~0.2
SS	receiving soller slit in:open, out:1	receiving soller slit in:open, out:1	receiving soller slit in:open, out:1
RS	same as SS	same as SS	same as SS
Start/end	由SET決定	由SET決定	由SET決定
Sampling step	由SET決定	由SET決定	由SET決定
Speed	由SET決定	由SET決定	由SET決定
Back	由SET決定	由SET決定	由SET決定
Precise alignment	Precise alignment	Precise alignment	Precise alignment
Sacn sequence			omega->Z->Rx
for In Plane			orthogonal:Omega->Z(fine) simplified:Rx,Ry->Z
Repeat			2
threshold			1/10 of Peak intensity
peak search method			Peak top or FWHM
2theta/Omega			twice the total reflection angle 密度1~3 : 0.4 , 4~10 : 0.5 , 10以上 : 0.6
ATT			incident X-ray:10,000~300,000
DS			01~0.2
SS			same as DS or twice of DS
RS			same as SS
Start/end			如範例(Z:-0.5~0.5,Omega:- 0.5~0.5,Rx:-3~3)
Sampling step			如範例 (Z:0.01, Omega:0.01, Rx:0.05)
Speed			如範例(Z:2, Omega:2, Rx:15)
Back			如範例(Z:0.5, Omega:0.5, Rx:3)
Profile measurement	Profile measurement	Profile measurement	Profile measurement
Scan axis	2theta/omega	omega	2theta
Scan method	continuous/FT	continuous/FT	continuous/FT
range setting	Absolute	relative	relative
Start/end	無機5~90 (有機2~60)	±5~10	無機5~90 (有機2~60)
Sampling step	1/5~1/10 receiving-side resolution(SS=1, RS=1時為0.2 , 或=soller slit resolution)	0.1	1/5~1/10 receiving-side resolution(SS=1, RS=1時為0.2 , 或=soller slit resolution)
Speed	1~5, 必須小於step的500倍	1~5, 必須小於step的500倍	1~5, 必須小於step的500倍
ATT	其他open, peak 處 : 1/10 or 1/100	其他open, peak 處 : 1/10 or 1/100	其他open, peak 處 : 1/10 or 1/100
DS	1	1	1
SS	receiving soller slit in:open, out:1	receiving soller slit in:open, out:1	receiving soller slit in:open, out:1
RS	same as SS	same as SS	same as SS
Origin-2theta	不用	diffraction angle	0
Origin-omega	不用	1/2 diffraction angle	incident angle
Origin-2thetaChi	不用	0	0
Origin-Phi	不用	0	0

	In Plane	In Plane orientation
Speciment alignment	Speciment alignment	Speciment alignment
Sacn sequence	omega->Z	omega->Z
Repeat threshold	作精確校正設為1，否則設為2 1/10 of incident X-ray intensity	作精確校正設為1，否則設為2 1/10 of incident X-ray intensity
peak search method	Peak top	Peak top
ATT	incident X-ray:10,000~300,000	incident X-ray:10,000~300,000
DS	01~0.2	01~0.2
SS	same as DS or twice of DS	same as DS or twice of DS
RS	same as SS	same as SS
Start/end	由SET決定	由SET決定
Sampling step	由SET決定	由SET決定
Speed	由SET決定	由SET決定
Back	由SET決定	由SET決定
Precise alignment	Precise alignment	Precise alignment
Sacn sequence		
for In Plane	orthogonal:Omega->Z(fine) simplified:Rx,Ry->Z	orthogonal:Omega->Z(fine) simplified:Rx,Ry->Z
Repeat threshold	2 1/10 of Peak intensity	2 1/10 of Peak intensity
peak search method	Peak top or FWHM	Peak top or FWHM
2theta/Omega	twice the total reflection angle 密度1~3 : 0.4 , 4~10 : 0.5 , 10以上 : 0.6	twice the total reflection angle 密度1~3 : 0.4 , 4~10 : 0.5 , 10以上 : 0.6
ATT	incident X-ray:10,000~300,000	incident X-ray:10,000~300,000
DS	01~0.2	01~0.2
SS	same as DS or twice of DS	same as DS or twice of DS
RS	same as SS	same as SS
Start/end	如範例(Z:-0.5~0.5,Omega:-0.5~0.5,Rx:-3~3)	如範例(Z:-0.5~0.5,Omega:-0.5~0.5,Rx:-3~3)
Sampling step	如範例(Z:0.01,Omega:0.01,Rx:0.05)	如範例(Z:0.01,Omega:0.01,Rx:0.05)
Speed	如範例(Z:2,Omega:2,Rx:15)	如範例(Z:2,Omega:2,Rx:15)
Back	如範例(Z:0.5,Omega:0.5,Rx:3)	如範例(Z:0.5,Omega:0.5,Rx:3)
Profile measurement	Profile measurement	Profile measurement
Scan axis	2thetaChi/Phi	Phi
Scan method	continuous/FT	continuous/FT
range setting	Absolute	relative
Start/end	無機5~90 (有機2~60)	±5~10 or -180~180
Sampling step	1/5~1/10 receiving-side resolution(SS=1,RS=1時為0.2,或=soller slit resolution)	1/5~1/10 incident-side resolution (=soller slit resolution)
Speed	1~5, 必須小於step的500倍	1~5, 必須小於step的500倍
ATT	open	open
DS	與精確校正時相同	與精確校正時相同
SS	與精確校正時相同	與精確校正時相同
RS	與精確校正時相同	與精確校正時相同
Origin-2theta	incident angle	incident angle
Origin-omega	incident angle	incident angle
Origin-2thetaChi		diffraction angle
Origin-Phi		0

	Pole Figure step1	Pole Figure step2
Speciment alignment	Speciment alignment	Speciment alignment
Sacn sequence	omega->Z	
Repeat	作精確校正設為1，否則設為2	
threshold	1/10 of incident X-ray intensity	
peak search method	Peak top	
ATT	incident X-ray:10,000~300,000	
DS	0.1~0.2	
SS	same as DS or twice of DS	
RS	same as SS	
Start/end	由SET決定	
Sampling step	由SET決定	
Speed	由SET決定	
Back	由SET決定	
Precise alignment	Precise alignment	Precise alignment
Sacn sequence		
for In Plane	orthogonal:Omega->Z(fine) simplified:Rx,Ry->Z	omega(fine)
Repeat	2	2~3
threshold	1/10 of Peak intensity	1/10 of peak intensity
peak search method	Peak top or FWHM	Peak top or FWHM
2theta/Omega	twice the total reflection angle 密度1~3 : 0.4 , 4~10 : 0.5 , 10以上 : 0.6	Diffraction angle(移到理論值,作omega Scan,移到最高值,再作2Theta Scan找到2Theta最高值)
ATT	incident X-ray:10,000~300,000	peak intensity:10,000~200,000
DS	01~0.2	1
SS	same as DS or twice of DS	soller slit in:open, out:1
RS	same as SS	same as SS
Start/end	如範例(Z:-0.5~0.5,Omega:-0.5~0.5,Rx:-3~3)	如範例(Omega:-0.5~0.5,Rx:-3~3)
Sampling step	如範例(Z:0.01,Omega:0.01,Rx:0.05)	如範例(Omega:0.01,Rx:0.05)
Speed	如範例(Z:2,Omega:2,Rx:15)	如範例(Omega:2,Rx:15)
Back	如範例(Z:0.5,Omega:0.5,Rx:3)	如範例(Omega:0.5,Rx:3)
Profile measurement		Profile measurement
Whole		alpha=0~90,beta=0~360全範圍分析
Omega Min.		0.5
Alpha		range setting:Absolute ;Start:0 ;end:360 ;sampling step:3
Beta		Scan mode:Continue Range setting:Absolute Start:0 ;end:360 sampling step:3 ;speed:180
Pole orientation		2ThetaB:繞射角,alpha:0,beta:0
ATT		peak intensity:10,000~200,000
DS		1
SS		soller slit in:open, out:1
RS		same as SS
Origin-2theta		不用
Origin-omega		不用
Origin-2thetaChi		不用
Origin-Phi		不用

	Reciprocal Space Map	Reciprocal Space Map(In Plane)
Speciment alignment	Speciment alignment	Speciment alignment
Sacn sequence	omega->Z	omega->Z
Repeat	續作精確校正：1，否則：2	續作精確校正：1，否則：2
threshold	1/10 of incident X-ray intensity	1/10 of incident X-ray intensity
peak search method	Peak top	Peak top
ATT	incident X-ray:10,000~300,000	incident X-ray:10,000~300,000
DS	01~0.2	01~0.2
SS	same as DS or twice of DS	same as DS or twice of DS
RS	same as SS	same as SS
Start/end	由SET決定	由SET決定
Sampling step	由SET決定	由SET決定
Speed	由SET決定	由SET決定
Back	由SET決定	由SET決定
Precise alignment	Precise alignment	Precise alignment
Sacn sequence	omega->Rx	orthogonal:Omega->Z(fine) simplified:Rx,Ry->Z
for In Plane		
Repeat	2~3	2
threshold	1/10 of Peak intensity	1/10 of peak intensity
peak search method	Peak top or FWHM	Peak top or FWHM
2theta/Omega	Diffraction angle(移到理論值,作 omega Scan,移到最高值,再作 2Theta Scan找到2Theta最高值)	twice the total reflection angle 密度1~3 : 0.4 , 4~10 : 0.5 , 10以上 : 0.6
ATT	peak intensity:10,000~200,000	peak intensity:10,000~200,000
DS	1	01~0.2
SS	1	same as DS or twice of DS
RS	1	same as SS
Start/end	如範例(Omega:-0.5~0.5,Rx:-3~3)	如範例(Z:-0.5~0.5,Omega:-0.5~0.5,Rx:-3~3)
Sampling step	如範例(Omega:0.01,Rx:0.05)	如範例(Z:0.01,Omega:0.01,Rx:0.05)
Speed	如範例(Omega:2,Rx:15)	如範例(Z:2,Omega:2,Rx:15)
Back	如範例(Omega:0.5,Rx:3)	如範例(Z:0.5,Omega:0.5,Rx:3)
Profile measurement	Profile measurement	Profile measurement
Reciprocal Space Map	omega step-2theta/omega continuous	phi step-2thetachi/phi continuous
range setting	Relative	Relative
omega or phi	-delta:-0.2,delta:0.2,sampling step:0.005	-delta:-1.5,delta:1.5,sampling step:0.1
2theta/Omega or 2thetachi/phi	-delta:-0.2,delta:0.2,sampling step:0.001,speed:1	-delta:-2.5,delta:1.5,sampling step:0.04,speed:1
ATT	peak intensity:10,000~200,000	peak intensity:10,000~200,000
DS	與精確校正時相同	與精確校正時相同
SS	與精確校正時相同	open
RS	與精確校正時相同	open
Origin-2theta	diffraction angle	不用
Origin-omega	1/2 diffraction angle	total reflaction angle
Origin-2thetaChi	不用	diffraction angle
Origin-Phi	0	1/2 diffraction angle

	Residual Stres(Out of plane/In plane)		
Speciment alignment	Speciment alignment	Stress masurement	Stress masurement
Sacn sequence	Z->omega	stress masurement method	Fixed Psi method
Repeat	續作精確校正：1，否則：2		
threshold	1/10 of incident X-ray intensity	Scan method	continuous/FT
peak search method	Peak top	range setting	Absolute
ATT	incident X-ray:10,000~300,000	scan condition	Oou of plane:2theta/omega In plane:2thetachi/phi
DS	01~0.2		
SS	same as DS or twice of DS	Scan method	continuous/FT
RS	same as SS	range setting	Absolute
Start/end	由SET決定	scan condition	Out of plane:2theta/omega In plane:2thetachi/phi
Sampling step	由SET決定		
Speed	由SET決定	Start/end	依據高角度之Peak訂定Start以及end
Back	由SET決定		
Precise alignment	Precise alignment(Out of plane不作)	Sampling step	0.01(1/10FWHM)
Sacn sequence		Speed	0.5
for In Plane	orthogonal:Omega->Z(fine) simplified:Rx,Ry->Z	Peak angle	高角度Peak(undistortion)
Repeat	2	Beta angle	0
threshold	1/10 of Peak intensity	psi step auto set	設定 Psi start/end:lim. -90~90), divide step:8, make the step of (sin psi)^2打勾
peak search method	Peak top or FWHM		
2theta/Omega	twice the total reflection angle 密度1~3 : 0.4, 4~10 : 0.5, 10以上 : 0.6		
ATT	incident 10,000~300,000	ATT	open
DS	01~0.2	DS	符合試片大小
SS	same as DS or twice of DS	SS	可以open
RS	same as SS	RS	可以open
Start/end	如範例(Z:-0.5~0.5, Omega:-0.5~0.5, Rx:-3~3)	Origin-2theta	Out of plane:不用 In plane:incident angle
Sampling step	如範例(Z:0.01, Omega:0.01, Rx:0.05)	Origin-omega	Out of plane:不用 In plane:incident angle
Speed	如範例(Z:2, Omega:2, Rx:15)		
Back	如範例(Z:0.5, Omega:0.5, Rx:3)	Origin-2thetaChi	不用, In plane:0
Profile measurement	Profile measurement	Origin-Phi	不用, In plane:0
Scan axis	2theta/omega, In plane:2thetachi/phi		
Scan method	continuous/FT		
range setting	Absolute		
Start/end	40-120, In plane:40-110		
Sampling step	0.01		
Speed	1~5, 必須小於step的500倍		
ATT	open		
DS	符合試片, In plane:同精確校正		
SS	open, In plane:同精確校正		
RS	open, In plane:同精確校正		
Origin-2theta	不用, In plane:incident angle		
Origin-omega	不用, In plane:incident angle		
Origin-2thetaChi	不用, In plane:0		
Origin-Phi	不用, In plane:0		