500-30 min

40-125: 9.5% austenite (ok fit)

40-105: 9.64%

48-105: 9.67% (good fit still)

40-70: 10.95%

40-85: 9.31% (much worse fit)

Peak 1: 10.97% (9.64%)

Peak 2: 10.98% (9.65% the second time)

Peak 3: 10.92% (10.03%)

Peak 4: 10.87% (10.73%) Lattice parameters:

**File 1 : "Z:\Lucy Fielding\Sp10c\Sp10c\Tempered 500C\500-30m.rd"**

Range Number : 1

**R-Values**

Rexp : 2.02 Rwp : 12.48 Rp : 9.42 GOF : 6.19

Rexp`: 2.17 Rwp`: 13.43 Rp` : 10.22 DW : 0.11

**Quantitative Analysis - Rietveld**

Phase 1 : Austenite 9.43(42) %

Phase 2 : Ferrite 90.57(42) %

**Background**

One on X 20000(180000)

Chebychev polynomial, Coefficient 0 200(2500)

1 0(1400)

2 90(380)

3 0(100)

4 25(30)

**Instrument**

Primary radius (mm) 217.5

Secondary radius (mm) 217.5

Receiving slit width (mm) 0.3

Divergence angle (°) 1

**Corrections**

Zero Error -0.0064(37)

LP Factor 90

**Miscellaneous**

Start X 40

Finish X 125

**Structure 1**

Phase name Austenite

R-Bragg 3.759

Spacegroup Fm-3m

Scale 0.0217(11)

Cell Mass 223.387

Cell Volume (Å^3) 46.896(20)

Wt% - Rietveld 9.43(42)

Crystallite Size

Cry Size Lorentzian (nm) 40(110)

Strain

Strain G 0.74(55)

Crystal Linear Absorption Coeff. (1/cm) 2391.7(10)

Crystal Density (g/cm^3) 7.9098(34)

Preferred Orientation Spherical Harmonics

Order 8

k00 1

k41 -0.350(36)

k61 0.071(49)

k81 0.084(44)

PV\_MOD peak type: a + b Tan(Th) + c / Cos(Th)

FWHM a 0.1(79)

b 0.0(42)

c 0.1(87)

Lorentzian mix a 0(17)

b 0(12)

c 0(21)

Lattice parameters

a (Å) 3.60617(52)

Site Np x y z Atom Occ Beq

Fe1 4 0.00000 0.00000 0.00000 Fe 1 1

**Structure 2**

Phase name Ferrite

R-Bragg 2.133

Spacegroup Im-3m

Scale 0.8243(57)

Cell Mass 111.693

Cell Volume (Å^3) 23.7148(46)

Wt% - Rietveld 90.57(42)

Crystallite Size

Cry Size Lorentzian (nm) 85(62)

Strain

Strain G 0.721(26)

Crystal Linear Absorption Coeff. (1/cm) 2364.84(46)

Crystal Density (g/cm^3) 7.8209(15)

Preferred Orientation Spherical Harmonics

Order 8

k00 1

k41 0.144(33)

k61 -0.289(23)

k81 -0.223(25)

PV\_MOD peak type: a + b Tan(Th) + c / Cos(Th)

FWHM a 0.00(40)

b 0.38(38)

c 0.00(51)

Lorentzian mix a 0(340000)

b 2(180000)

c 0(380000)

Lattice parameters

a (Å) 2.87303(19)

Site Np x y z Atom Occ Beq

Fe1 2 0.00000 0.00000 0.00000 Fe 1 1