

**LAMPIRAN A**  
**PERHITUNGAN**

### A.1 Perhitungan Pembuatan Garam

Total berat NaCl + KCl = 12 gram

Ar Na = 22,989769

Ar K = 39,0983

Ar Cl = 35,453

$$\text{Berat NaCl} = \frac{58,442769}{58,442769+74,5513} \times 12 \text{ gram} = 5,27326 \text{ gram}$$

$$\text{Berat KCl} = \frac{74,5513}{74,5513+58,442769} \times 12 \text{ gram} = 6,72673 \text{ gram}$$

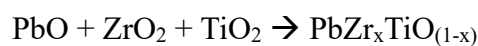
### A.2 Perhitungan Pembuatan Bahan Dasar PbO, ZrO<sub>2</sub>, dan TiO<sub>2</sub>

Ar Pb = 207,2      Mr PbO = 223,199      mol PbO = 1 mol

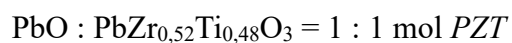
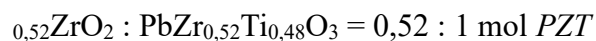
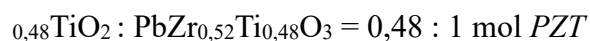
Ar Zr = 91,224      Mr ZrO<sub>2</sub> = 123,222      mol ZrO<sub>2</sub> = 0,52 mol

Ar Ti = 47,867      Mr TiO<sub>2</sub> = 79,865      mol TiO<sub>2</sub> = 0,48 mol

Ar O = 15,999      Mr PZT = 325,609      mol PZT = 1 mol



Nilai x = (0 ≤ x ≤ 1)



1 : 0,52 : 0,48

### A.3 Perhitungan Pembuatan Bahan Dasar 10 gram

$$\text{mol } PZT = \frac{10}{325,609} = 0,030712$$

$$\text{mol PbO} = \frac{1}{1} \times 0,030712 = 0,030712$$

$$\text{mol ZrO}_2 = \frac{0,52}{1} \times 0,030712 = 0,01597$$

$$\text{mol TiO}_2 = \frac{0,48}{1} \times 0,030712 = 0,014742$$

$$\text{Berat PbO} = 0,030712 \times 223,199 = 6,854803 \text{ gram}$$

$$\text{Berat ZrO}_2 = 0,01597 \times 123,222 = 1,967861 \text{ gram}$$

$$\text{Berat TiO}_2 = 0,014742 \times 79,865 = 1,177336 \text{ gram}$$

$$\text{Total Berat PbO} + \text{ZrO}_2 + \text{PbO} + \text{TiO}_2 = 10 \text{ gram}$$

**LAMPIRAN B**  
**DATA PENELITIAN**

B.1 Data Sampel Hasil Pemanasan



**Gambar B.1** Sampel Hasil Pemanasan 1,1 Jam



**Gambar B.2** Sampel Hasil Pemanasan 3,1 Jam

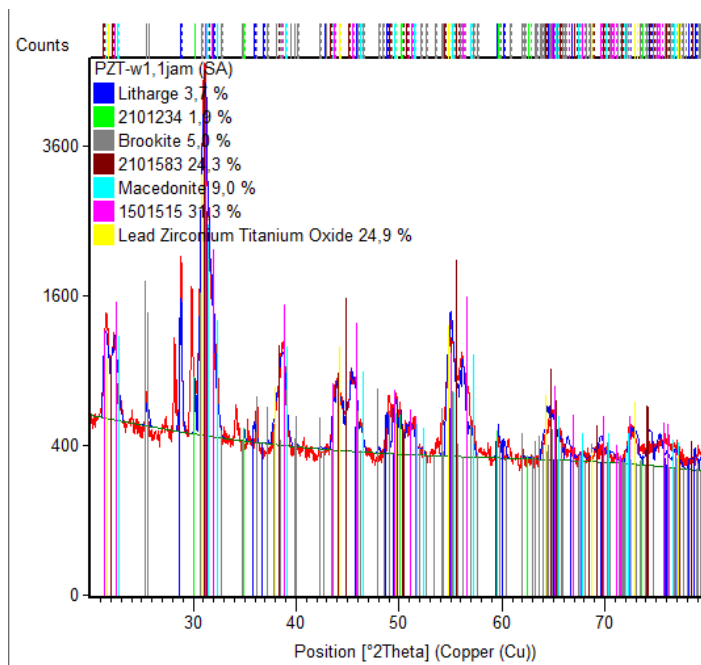


**Gambar B.3** Sampel Hasil Pemanasan 4,5 Jam

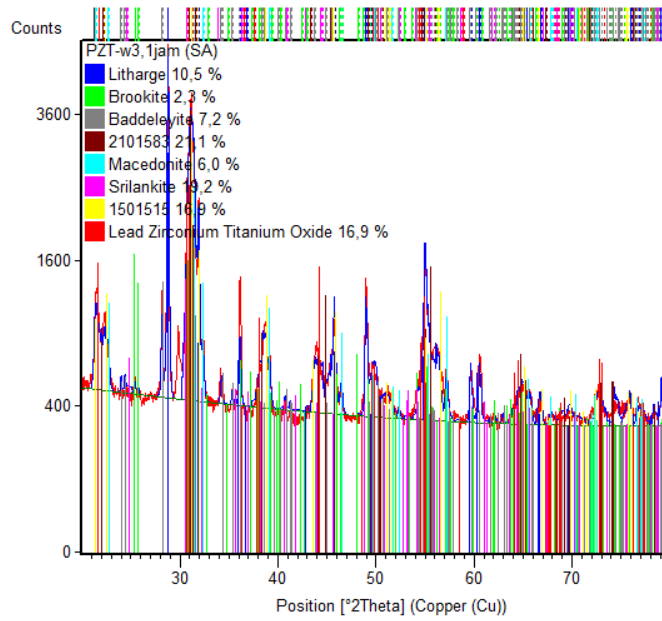


**Gambar B.3** Sampel Hasil Pemanasan 4,5 Jam

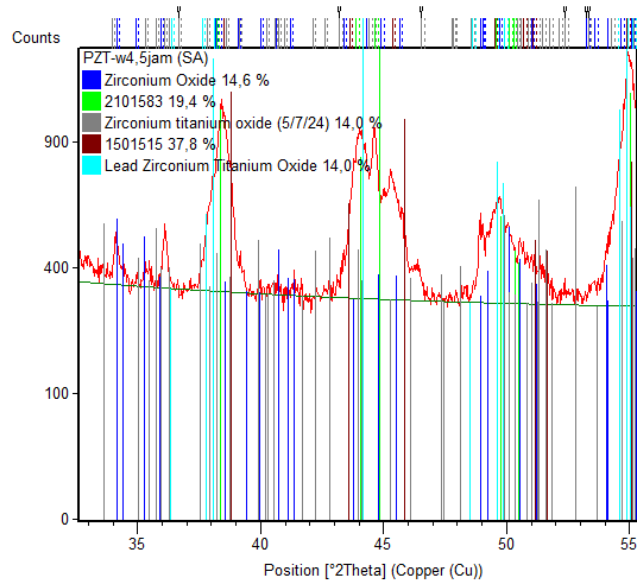
B.2 Data Analisa Hasil Pengolahan *Highscore Plus*



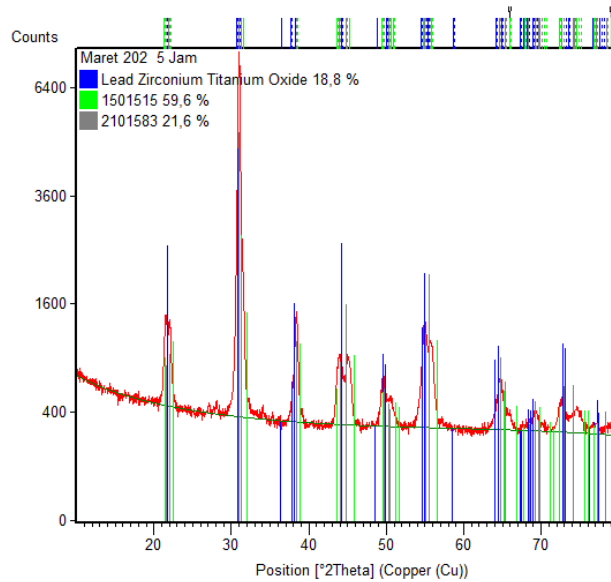
**Gambar B.4** Hasil Analisa Sampel Pemanasan 1,1 Jam



**Gambar B.5** Hasil Analisa Sampel Pemanasan 3,1 Jam



**Gambar B.6** Hasil Analisa Sampel Pemanasan 4,5 Jam



**Gambar B.7** Hasil Analisa Sampel Pemanasan 5 Jam

Agreement Indices	
Condition Number	7302997000000
R expected	4,16241
R profile	9,86985
Weighted R profile	14,39937
D-statistics	0,17507
Weighted D-statistics	12,79806
Goodness of Fit	11,96736

**Gambar B.8** Nilai Indikator *Refinement* Sampel dengan Pemanasan 1,1 Jam

Agreement Indices	
Condition Number	118894900000000
R expected	4,19404
R profile	7,95485
Weighted R profile	10,72597
D-statistics	0,30329
Weighted D-statistics	18,42715
Goodness of Fit	6,54046

**Gambar B.8** Nilai Indikator *Refinement* Sampel dengan Pemanasan 3,1 Jam



Agreement Indices	
Condition Number	1,837155E21
R expected	4,32581
R profile	6,68972
Weighted R profile	9,67001
D-statistics	0,23265
Weighted D-statistics	20,20569
Goodness of Fit	4,99712

**Gambar B.8** Nilai Indikator *Refinement* Sampel dengan Pemanasan 4,5 Jam

Agreement Indices	
Condition Number	4,697854E18
R expected	4,37188
R profile	5,54115
Weighted R profile	7,00443
D-statistics	0,40541
Weighted D-statistics	79,27265
Goodness of Fit	2,5669

**Gambar B.8** Nilai Indikator *Refinement* Sampel dengan Pemanasan 5 Jam

**LAMPIRAN C**  
**GAMBAR ALAT DAN BAHAN**

C.1 Gambar Alat dan Bahan



**Gambar C.1** Mesin *XRD* *Empyran* *Panalytical*



**Gambar C.2** *Oven*



**Gambar C.3** *Muffle Furnace*



**Gambar C.4 Neraca Digital**



**Gambar C.5 Mortar**



**Gambar C.6 Labu Erlenmeyer**



**Gambar C.7 Pemanas Air**



**Gambar C.8 Pipet**



**Gambar C.9 Spatula**



**Gambar C.10** Krusibel Keramik



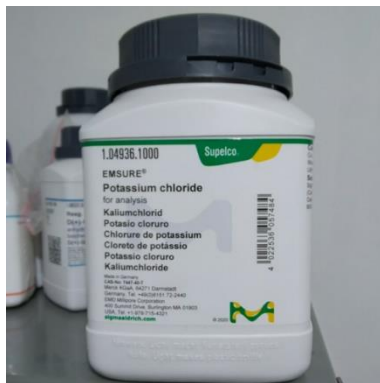
**Gambar C.11** Gelas Beker



**Gambar C.12** Corong Kaca



**Gambar C.13** Serbuk NaCl



**Gambar C.14** Serbuk KCl



**Gambar C.15** Serbuk TiO<sub>2</sub>

