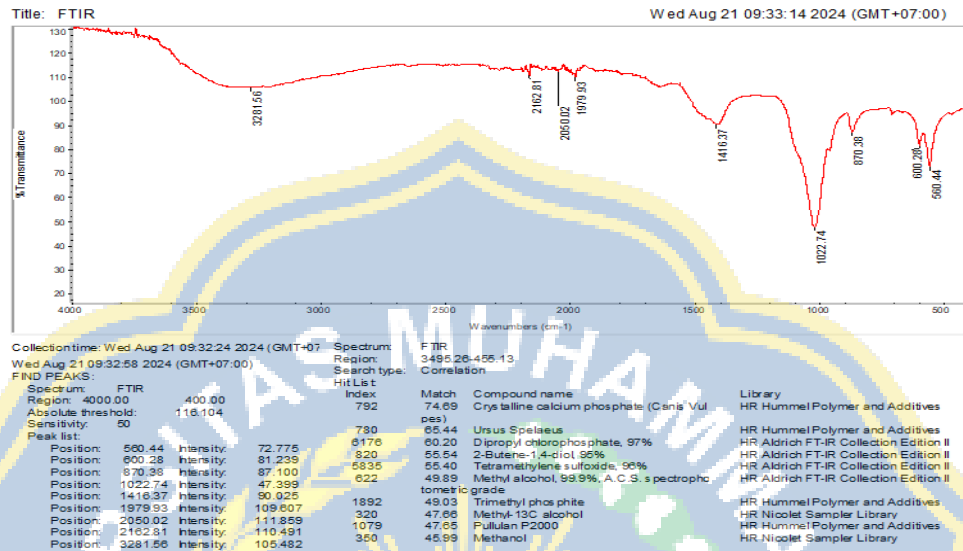


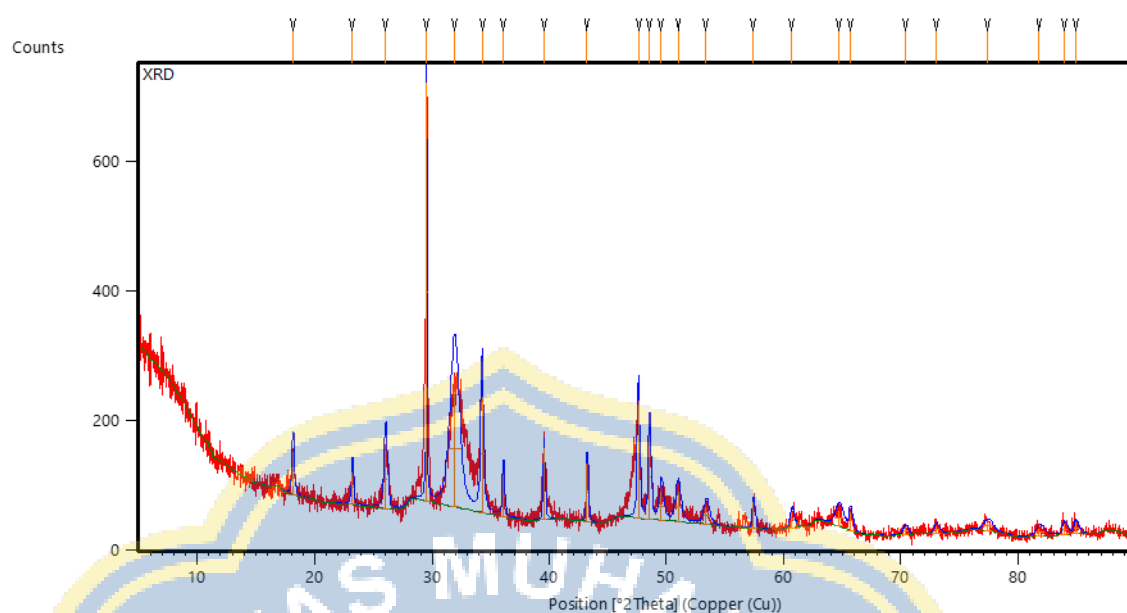
LAMPIRAN

Lampiran 1. Hasil uji karakterisasi sintesis hidroksiapatit cangkang kerang simping metode FTIR



Lampiran 2. Hasil uji karakterisasi sintesis hidroksiapatit cangkang kerang simping metode XRD

Dataset Name: XRD
 File name: D:\Pengujian XRD 2024\Agustus\Nuri-XRD\XRD.xrdml
 Configuration=Reflection-Transmission Spinner, Owner=User-1, Creation date=1/15/2016 11:44:36 AM
 Goniometer=PW3050/60 (Theta/Theta); Minimum step size 2Theta:0.001; Minimum step size Omega:0.001
 Sample stage=Reflection-Transmission Spinner PW3064/60; Minimum step size Phi:0.1
 Diffractometer system=XPRT-PRO
 Measurement program=C:\PANalytical\Data Collector\Programs\Scan 5-90.xrdmp, Identifier={748FED38-4AEA-495D-84C0-04EBA43A401B}
 Measurement Date / Time: 8/21/2024 9:35:22 AM
 Operator: Institut Teknologi
 Raw Data Origin: XRD measurement (*XRDML)
 Scan Axis: Goniometer
 Start Position [°2Th]: 5.0084
 End Position [°2Th]: 39.9744
 Step Size [°2Th]: 0.0170
 Scan Step Time [s]: 10.1600
 Scan Type: Continuous
 PSD Mode: Scanning
 PSD Length [°2Th]: 2.12
 Offset [°2Th]: 0.0000
 Divergence Slit Type: Fixed
 Divergence Slit Size [°]: 1.0000
 Specimen Length [mm]: 10.00
 Measurement Temperature [°C]: 25.00
 Anode Material: Cu
 K-Alpha1 [Å]: 1.54060
 K-Alpha2 [Å]: 1.54443
 K-Beta [Å]: 1.39225
 K-A2 / K-A1 Ratio: 0.50000
 Generator Settings: 30 mA, 40 kV
 Diffractometer Type: 0000000011119014
 Diffractometer Number: 0
 Goniometer Radius [mm]: 240.00
 Dist. Focus-Diverg. Slit [mm]: 91.00
 Incident Beam Monochromator: No
 Spinning: No



Pos. [°2Th.]	Height [cts]	FWHM Left [°2Th.]	d-spacing [Å]	Rel. Int. [%]
18.1633	66.76	0.2342	4.88423	10.30
23.1979	51.86	0.2007	3.83437	8.00
26.0311	91.42	0.3346	3.42311	14.11
29.5097	648.10	0.0836	3.02703	100.00
31.8969	178.39	0.9368	2.80573	27.53
34.2352	178.68	0.2676	2.61926	27.57
36.0727	65.53	0.2007	2.48994	10.11
39.5211	111.52	0.1338	2.28027	17.21
43.2700	91.28	0.1673	2.09101	14.08
47.5971	181.65	0.2007	1.91052	28.03
48.5734	129.47	0.2342	1.87438	19.98
49.5644	45.24	0.4015	1.83920	6.98
50.9867	46.26	0.5353	1.79119	7.14
53.3913	27.99	0.5353	1.71605	4.32
57.4343	42.38	0.2007	1.60449	6.54
60.6948	24.95	0.3346	1.52588	3.85

64.7118	25.71	0.8029	1.44053	3.97
65.6722	30.17	0.2676	1.42177	4.66
70.3435	11.66	0.4015	1.33836	1.80
72.9932	11.44	0.4015	1.29618	1.77
77.3551	13.97	0.8029	1.23362	2.16
81.7426	12.35	0.8029	1.17815	1.91
83.8673	16.25	0.4015	1.15363	2.51
84.8436	18.01	0.4015	1.14283	2.78

Insert Measurement:

- File name = "XRD.xrdml"
- Modification time = "8/22/2024 9:22:37 AM"
- Modification editor = "its"

Default properties:

- Measurement step axis = "None"
- Internal wavelengths used from anode material: Copper (Cu)
- Original K-Alpha wavelength = "1.54060"
- Used K-Alpha wavelength = "1.54060"
- Original K-Alpha2 wavelength = "1.54443"
- Used K-Alpha2 wavelength = "1.54443"
- Original K-Beta wavelength = "1.39225"
- Used K-Beta wavelength = "1.39225"
- Divergence slit type = "Fixed"
- Irradiated length = "10.00000"
- Fixed div. slit size = "1.00000"
- Dist. focus to div. slit = "91.00000"
- Spinner used = "No"
- Receiving slit size = "0.10000"
- Step axis value = "0.00000"
- Offset = "0.00000"
- Sample length = "10.00000"
- Modification time = "8/22/2024 9:22:37 AM"
- Modification editor = "its"

Interpolate Step Size:

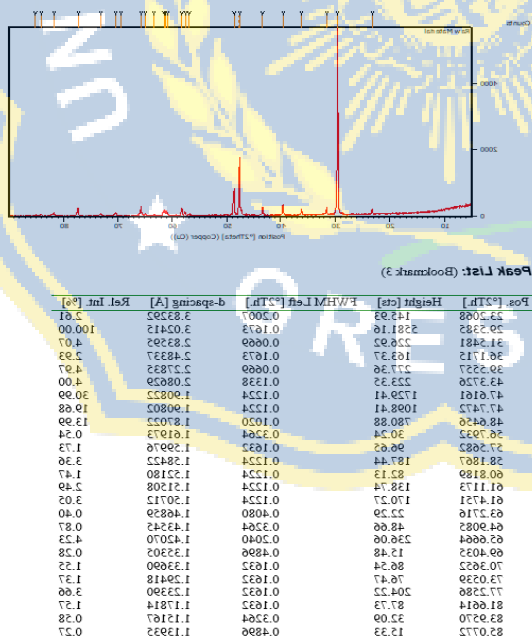
- Derived = "Yes"
- Step Size = "0.01"
- Modification time = "8/22/2024 9:22:37 AM"
- Modification editor = "PANalytical"

Search Peaks:

- Minimum significance = "2"
- Minimum tip width = "0.01"
- Maximum tip width = "1"
- Peak base width = "2"
- Method = "Minimum 2nd derivative"
- Modification time = "2/20/2001 11:55:18 AM"
- Modification editor = "PANalytical"

Lampiran 3. Hasil uji karakterisasi hidroksiapatit *Raw Material* metode XRD

Dataset Name Raw Material
File name E:\DATA PENGUJIAN-XRD\Pengujian
2023\Oktober\Rilo\Raw Material\Raw Material.rd
Comment Configuration=Reflection-Transmission Sp
Goniometer=PW3050/60 (Theta/Theta); Mini
10/23/2023 12:04:00 PM
Measurement Date / Time PHILIPS-binary (scan) (.RD)
Raw Data Origin
Scan Axis Gonio
Start Position [°2Th.] 5.0084
End Position [°2Th.] 89.9744
Step Size [°2Th.] 0.0170
Scan Step Time [s] 10.1500
Scan Type Continuous
Offset [°2Th.] 0.0000
Divergence Slit Type Fixed
Divergence Slit Size [°] 1.0000
Specimen Length [mm] 10.00
Receiving Slit Size [mm] 12.7500
Measurement Temperature [°C] -273.15
Anode Material Cu
K-Alpha1 [Å] 1.54060
K-Alpha2 [Å] 1.54443
K-Beta [Å] 1.39225
K-A2 / K-A1 Ratio 0.50000
Generator Settings 30 mA, 40 kV
Diffractometer Type XPert MPD
Diffractometer Number 1
Goniometer Radius [mm] 200.00
Dist. Focus-Diverg. Slit [mm] 91.00
Incident Beam Monochromator No
Spinning Yes



Insert Measurement:

- File name = Raw Material.rd
- Modification time = "10/23/2023 2:26:03 PM"
- Modification editor = "Teknik Material"

Interpolate Step Size:

- Derived = "Yes"
- Step Size = "0.01"
- Modification time = "10/23/2023 2:26:03 PM"
- Modification editor = "PANalytical"

Search Peaks:

- Minimum significance = "2"
- Minimum tip width = "0.02"
- Maximum tip width = "1.5"
- Peak base width = "2"
- Method = "Minimum 2nd derivative"
- Modification time = "7/21/2023 9:24:35 AM"
- Modification editor = "Teknik Material"

More items... (Bookmark 6)

More items... (Bookmark 7)

More items... (Bookmark 8)

More items... (Bookmark 9)

More items... (Bookmark 10)

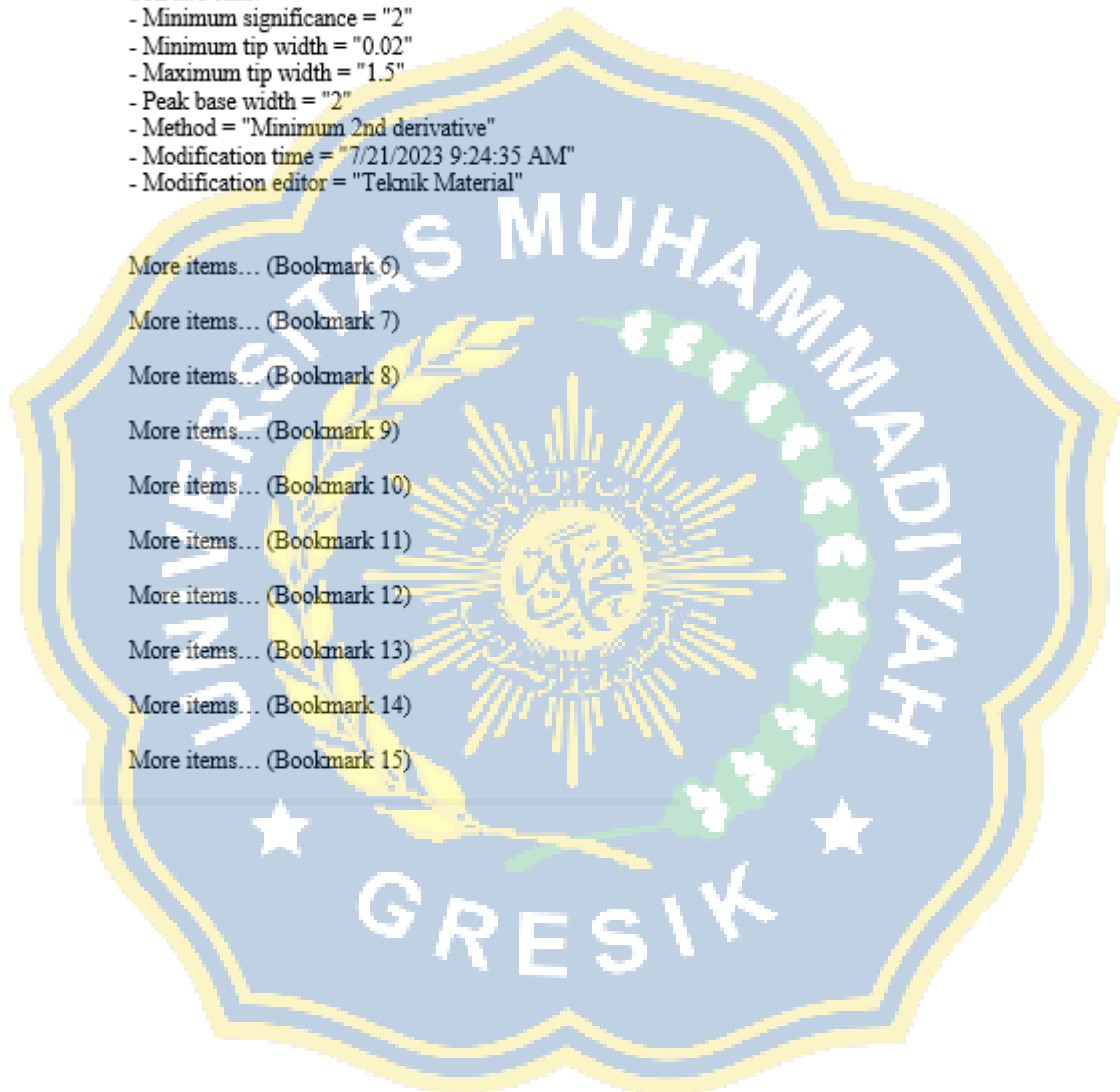
More items... (Bookmark 11)

More items... (Bookmark 12)

More items... (Bookmark 13)

More items... (Bookmark 14)

More items... (Bookmark 15)



Lampiran 4. Hasil uji karakterisasi hidroksiapatit *Raw Material* metode FTIR

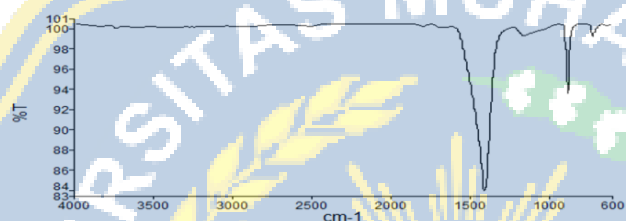
Report
 Filename Rilo_Raw-Material_1
 Analyst Administrator
 Description Sample Raw Material By Administrator Date Tuesday, November 28 2023

Sample Details
 Creation Date 11/28/2023 3:59:09 PM
 X-Axis Units cm-1
 X-Axis start value 4000
 X-Axis end value 600
 Data interval -1
 Number of points 3401
 Y-Axis Units %T

Instrument
 Instrument Model Frontier FT-IR
 Instrument Serial Number 96681
 Software Revision CPU32 Main 00.09.9951 07-September-2011 11:49:41
 Number of Scans 4
 Resolution 4

History				
Who	What	When	Parameters	Comment
Administrator	Created as New Dataset	11/28/2023 3:59:09 PM		Sample Raw Material By Administrator Date Tuesday, November 28 2023
Administrator	Atmospheric Correction	11/28/2023 3:59:09 PM		
Administrator	Data Tune Up	11/28/2023 3:59:17 PM	"Rilo_Raw-Material", "AutoSmooth", "AutoFlat2", "4000", "500"	
Administrator	Smooth	11/28/2023 3:59:23 PM	"Rilo_Raw-Material_1", 35.00, 1, "Result.sp"	

Spectrum Graph



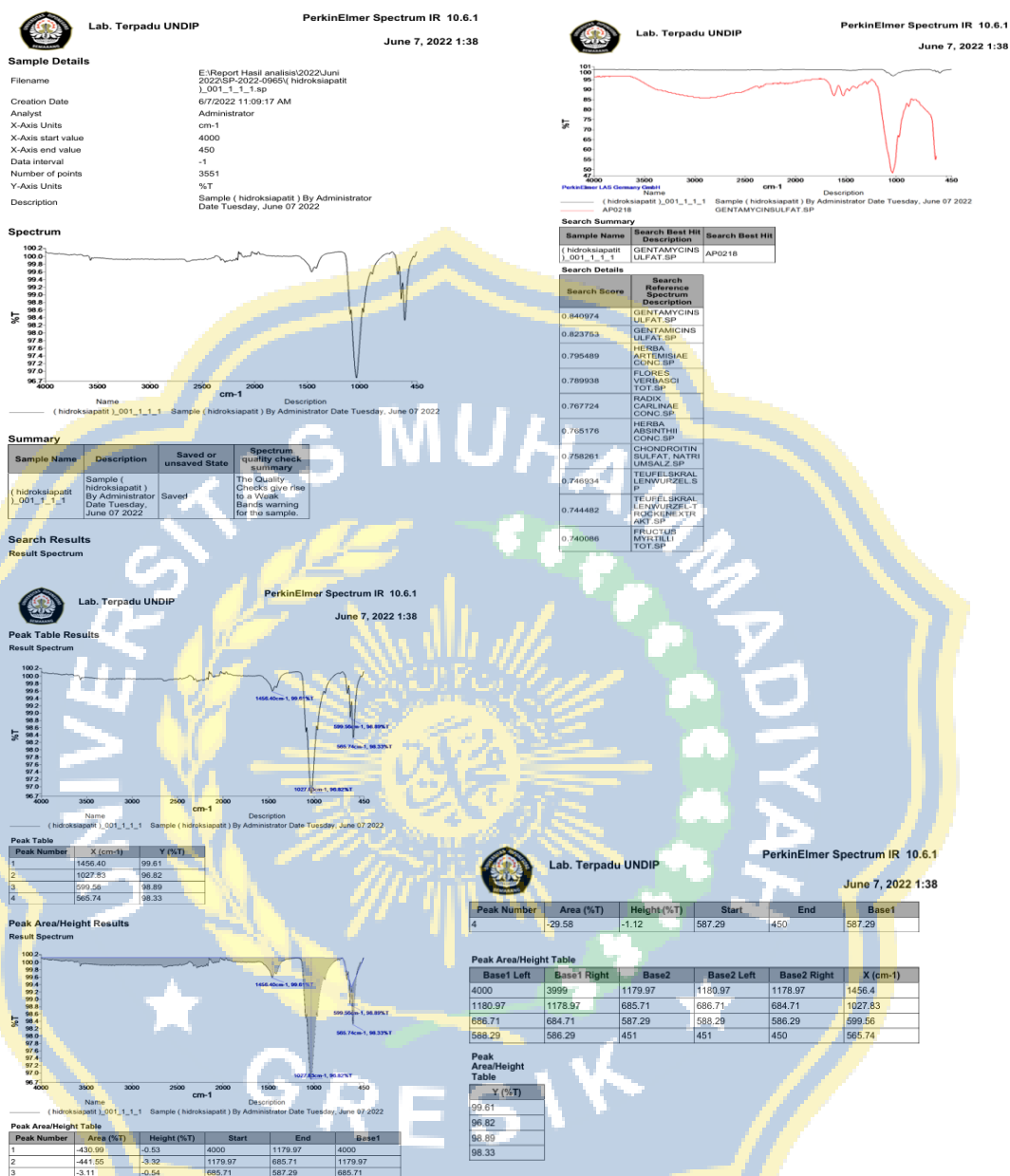
Name	Description
Rilo_Raw-Material_1	Sample Raw Material By Administrator Date Tuesday, November 28 2023

Summary			
Sample Name	Description	Saved or unsaved State	Quality
Rilo_Raw-Material_1	Sample Raw Material By Administrator Date Tuesday, November 28 2023	☒	The Quality Checks give rise to a Weak Bands warning for the sample.

Peak Table Results

SpectrumName			
Rilo_Raw-Material_1			
PeakName	X	Y	
2	874.71	93.61	
1	1401.46	83.87	

Lampiran 5. Hasil uji karakterisasi sintesis hidroksiapatit PT. Phapros metode FTIR



Lampiran 6. Hasil uji karakterisasi sintesis hidroksiapatit PT. Phapros metode XRD

```

*** Basic Data Process ***
Group      : XRD2022
Data       : SP20220966

*** Basic Data Process ***

# Data Information
Group      : XRD2022
Data       : SP20220966
Sample Name : Powder
Comment    : Hidroksiapatit
Date & Time : 06-08-22 09:58:04

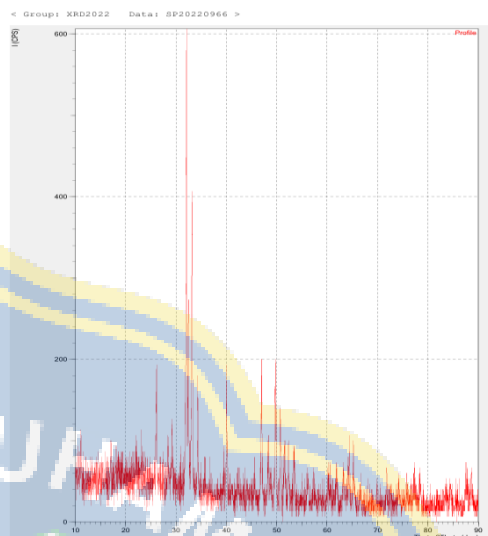
# Measurement Condition
X-ray tube : Cu
Voltage    : 30.0 (kV)
Current    : 30.0 (mA)

Slits
Auto Slit : not Used
Divergence slit : 1.00000 (deg)
Scatter slit : 1.00000 (deg)
Receiving slit : 0.15000 (mm)

Scanning
Drive axis : Theta-2Theta
Scan range : 10.0000 - 90.0000 (deg)
Scan mode  : Continuous Scan
Scan speed : 4.0000 (deg/min)
Sampling pitch : 0.0200 (deg)
Preset time : 0.30 (sec)

# Data Process Condition
Smoothing : [ AUTO ]
Smoother points : 0
B.G. Subtraction : [ AUTO ]
Sampling points : 0
Repeat times : 0
Kal-a2 Separate : [ MANUAL ]
Kal a2 ratio : 50 (%)
Peak Search : [ AUTO ]
Differential points : 0
FWHM threshold : 0.000 (deg)
Intensity threshold : 0 (par mil)
FWHM ratio (n-1)/n : 0
System error Correction : [ YES ]
Precise peak Correction : [ YES ]
y = b*x + c*x + d
b : 0.000000
c : 0.000000
d : 0.000000

```



Lampiran 7. Hasil uji karakterisasi sintesis hidroksiapatit peneliti sebelumnya metode XRD

This is the simple example template containing only headers for each report item and the bookmarks. The invisible bookmarks are indicated by text between brackets. Modify it according to your own needs and standards.

Measurement Conditions: (Bookmark 1)

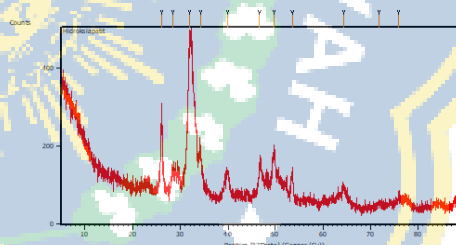
```

Dataset Name      : Hidroksiapatit
File name         : E:\DATA PENGUJIAN\XRD Pengujian
2023\Oktober\Rilo\Hidroksiapatit\Hidroksiapatit.xrdml
Comment          : Configuration=Reflection-Transmission Spinner, Owner=User-
1, Creation date=1/15/2016 11:44:36 AM
Goniometer=PW3050/60 (Theta/Theta); Minimum step size
2Theta:0.001; Minimum step size Omega:0.001
Sample stage=Reflection-Transmission Spinner PW3064/60;
Minimum step size Phi:0.1

Diffractometer system=XPERT-PRO
Measurement program=C:\PANalytical\
Collector Programs\Scan 5-90_spn4.xrdmp, Identifier=[EA1354A2-691F-46A9-86C1-
7E2BBE4F77A]
Measurement Date / Time : 10/23/2023 12:20:55 PM
Operator              : Insatit Teknologi
Raw Data Origin       : XRD measurement (*.XRDML)
Scan Axis             : Goni
Start Position [°2Th.] : 5.0084
End Position [°2Th.]  : 89.9744
Step Size [°2Th.]     : 0.0170
Scan Step Time [s]    : 10.1600
Scan Type             : Continuous
PSD Mode              : Scanning
PSD Length [°2Th.]    : 2.12
Offset [°2Th.]        : 0.0000
Divergence Slit Type  : Fixed
Divergence Slit Size [°] : 1.0000
Specimen Length [mm]  : 10.00
Measurement Temperature [°C] : 25.00
Anode Material         : Cu
K-Alpha1 [Å]          : 1.54060
K-Alpha2 [Å]          : 1.54443
K-Beta [Å]            : 1.39225
K-A2 / K-A1 Ratio     : 0.50000
Generator Settings    : 30 mA, 40 kV
Diffractometer Type   : 0000000011119014
Diffractometer Number : 0
Goniometer Radius [mm] : 240.00
Dist. Focus-Diverg. Slit [mm] : 91.00
Incident Beam Monochromator : No
Spinning              : Yes

```

Main Graphics, Analyze View: (Bookmark 2)



Peak List: (Bookmark 3)

Pos. [°2Th.]	Height [cts]	FWHM Left [°2Th.]	d-spacing [Å]	Rel. Int. [%]
26.0977	211.44	0.1673	3.41453	60.49
28.3473	35.35	0.4015	3.14846	10.26
31.5331	349.56	0.4015	2.80692	100.00
34.1827	99.69	0.2676	2.62316	28.52
39.9349	58.43	1.0706	2.25759	16.72
46.7001	58.57	0.4015	1.94510	16.75
49.7669	72.83	0.6022	1.83219	20.83
53.4947	66.09	0.3546	1.71298	18.91
64.2719	34.88	0.5353	1.44932	9.98
71.6779	7.59	0.9368	1.31670	2.17
75.8814	12.44	0.8029	1.25387	3.56
88.2203	25.79	0.6691	1.10760	7.38

Pattern List: (Bookmark 4)

Document History: (Bookmark 5)

Insert Measurement:
- File name = "Hidroksiapatit.xrdml"
- Modification time = "10/23/2023 2:24:03 PM"
- Modification editor = "Teknik Material"

Default properties:

- Measurement step axis = "None"
- Internal wavelengths used from anode material: Copper (Cu)
- Original K-Alpha1 wavelength = "1.54060"
- Used K-Alpha1 wavelength = "1.54060"
- Original K-Alpha2 wavelength = "1.54443"
- Used K-Alpha2 wavelength = "1.54443"
- Original K-Beta wavelength = "1.39225"
- Used K-Beta wavelength = "1.39225"
- Divergence slit type = "Fixed"
- Irradiated length = "10.00000"
- Fixed div. slit size = "1.00000"
- Dist. focus to div. slit = "91.00000"
- Receiving slit size = "0.10000"
- Step axis value = "0.00000"
- Offset = "0.00000"
- Sample length = "10.00000"
- Modification time = "10/23/2023 2:24:03 PM"
- Modification editor = "Teknik Material"

Interpolate Step Size:

- Derived = "Yes"
- Step Size = "0.01"
- Modification time = "10/23/2023 2:24:03 PM"
- Modification editor = "PANalytical"

Search Peaks:

- Minimum significance = "2"
- Minimum tip width = "0.02"
- Maximum tip width = "1.5"
- Peak base width = "2"
- Method = "Minimum 2nd derivative"
- Modification time = "7/21/2023 9:24:35 AM"
- Modification editor = "Teknik Material"

More items... (Bookmark 6)

More items... (Bookmark 7)

More items... (Bookmark 8)

More items... (Bookmark 9)

More items... (Bookmark 10)

More items... (Bookmark 11)

More items... (Bookmark 12)

More items... (Bookmark 13)

Lampiran 8. Hasil uji karakterisasi sintesis hidroksiapatit peneliti sebelumnya metode FTIR

