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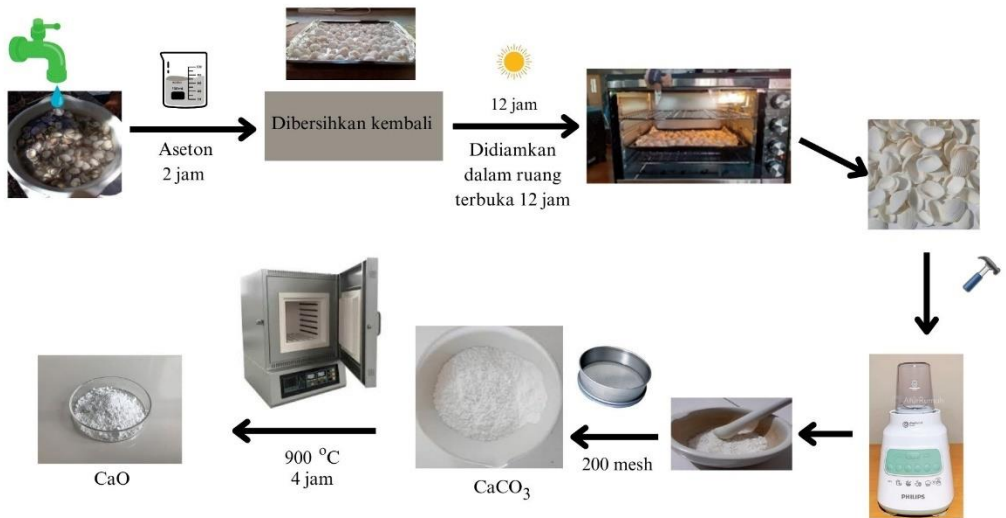
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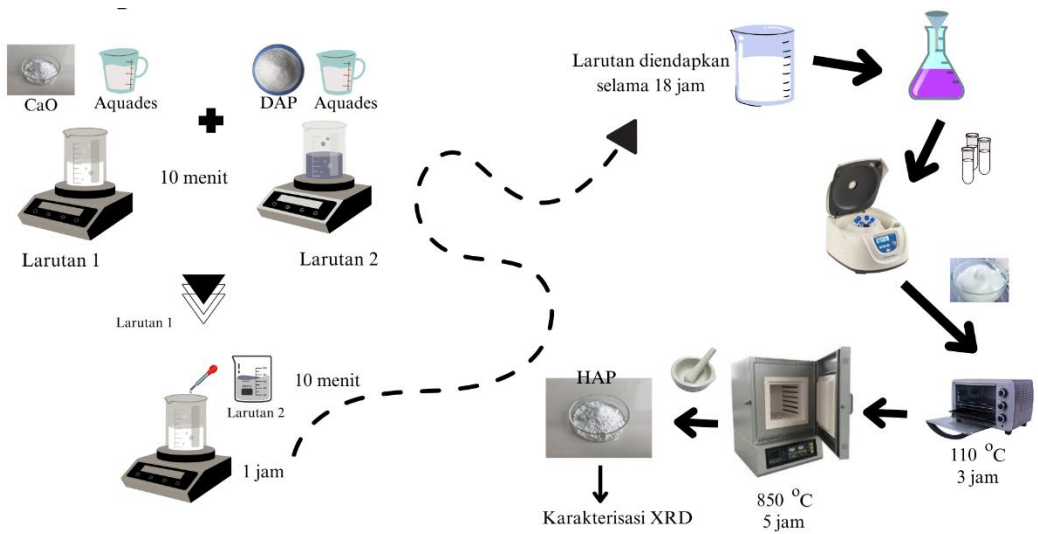
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LAMPIRAN

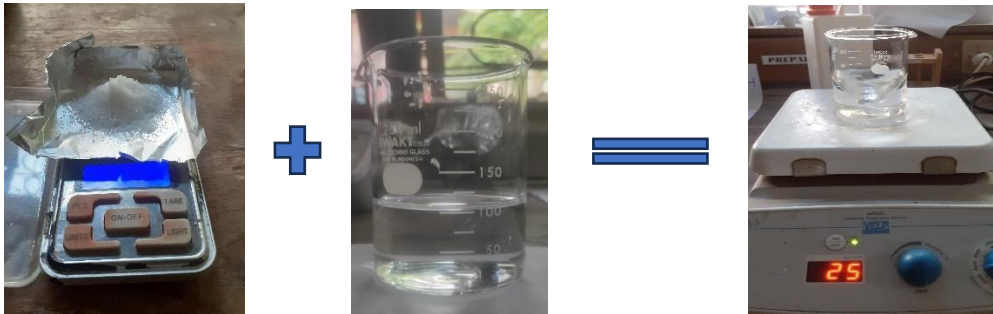
1. Persiapan CaO dari cangkang kerang *Anadara granosa*



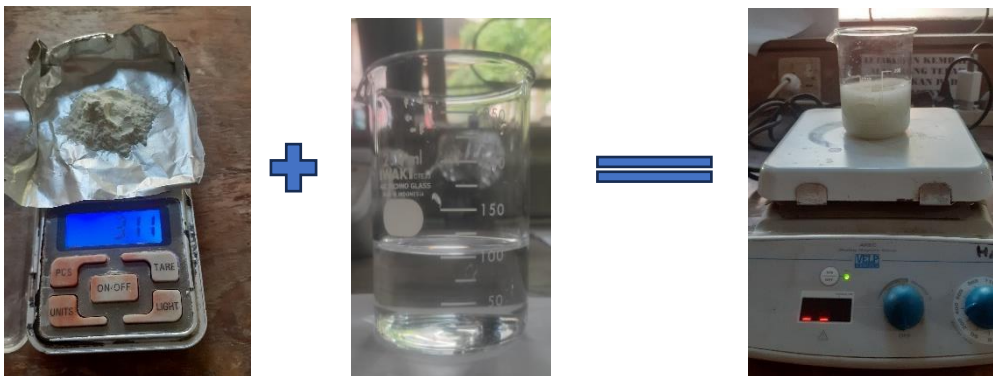
2. Sintesis hidroksiapatit dengan metode persipitasi



Larutan 1: diamonium hidroksida



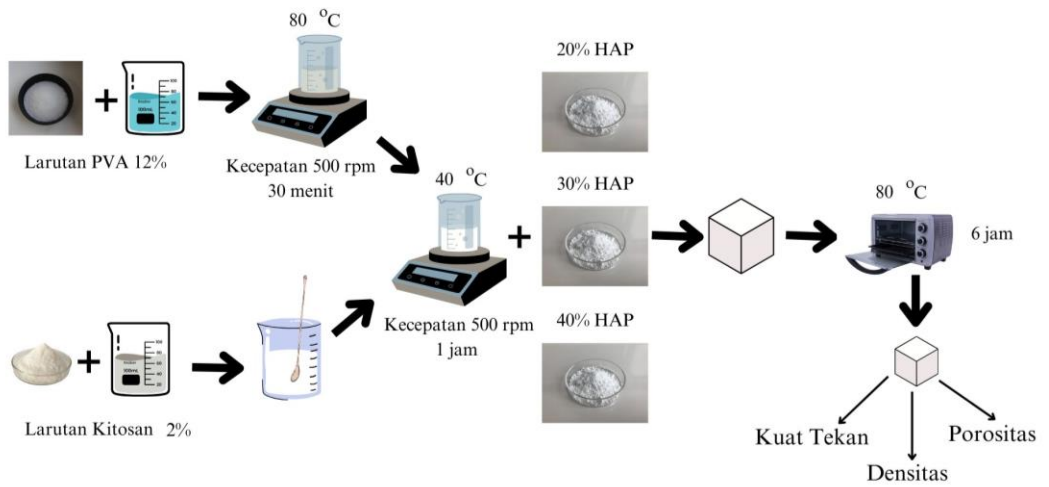
Larutan 2: Kalsium hidroksida



Larutan 1 dan 2 dicampurkan, kemudian diendapkan 18 jam dan setelah itu disaring dan dikeringkan dengan oven. Lalu disinter dengan menggunakan *furnance*.



3. Permbuatan komposit hidroksiapatit/kitosan/PVA



4. Analisis Hasil

5. Karakterisasi XRF

SAMPLE ANALYSIS REPORT
ARL QUANT'X EDXRF ANALYZER

THERMO FISHER SCIENTIFIC
UNIQUANT(TM) STANDARDLESS METHOD

C:\UQed\USER\Quant'X\Job\JOB.729 2023-08-03
fitr#s2 ok

Quant'X Rh end window 50kV

C:\UQed\USER\Quant'X\Appl\AnySampleAir.kap 2008-06-13

Calculated as : Oxides Matrix (Shape & ImpFc) : 4|Ca..

X-ray path = Air Film type = No supporting film

Case number = 0 All known

Eff.Diam. = 13.0 mm Eff.Area = 132.7 mm2

KnownConc = 0 %

Rest = 0 %

Viewed Mass = 1000.000 mg

Dil/Sample = 0

Sample Height = 7.54 mm

Compound	m/m%	StdErr	El	m/m%	StdErr
CaO	61.25	0.24	Ca	43.79	0.17
P2O5	38.53	0.24	Px	16.81	0.11
SrO	0.160	0.025	Sr	0.135	0.022
Nb2O5	0.0186	0.0017	Nb	0.0130	0.0012
MoO3	0.0139	0.0016	Mo	0.0093	0.0011
RuO4	0.0063	0.0011	Ru	0.0048	0.0008
Sb2O3	0.0053	0.0007	Sb	0.0044	0.0006

KnownConc= 0

REST= 0

D/S= 0

Sum Conc's before normalisation to 100% : 59.4 %

Total % stripped Oxygen: 39.212

Uji Densitas dan Porositas

Uji densitas dan porositas dilakukan:

- Mengukur Panjang, lebar, dan tinggi sampel menggunakan mikrometer sekrup dan jangka sorong



- Menimbang massa sampel dengan neraca digital
- Untuk Uji densitas hasil analisis dengan persamaan (3.1)

Sampel	Panjang (cm)	Lebar (cm)	Tinggi (cm)	V (cm ³)	m (g)	ρ (gcm ⁻³)
PVA/CS-20% HA	2,32	1,24	1,26	3,63	1,92	1,89
PVA/CS-30% HA	2,07	1,34	1,11	3,08	1,41	2,18
PVA/CS-40% HA	2,32	1,24	1,26	3,63	1,16	3,13
PVA/CS-50% HA	1,81	1,75	0,49	1,55	1,27	1,22

- Untuk Uji porositas hasil analisis dengan persamaan (3.2)

Material	V (cm ³)	W _p	W _s	ρ_{etanol} (gcm ⁻³)	Porositas (%)
PVA/CS-20% HA	3,63	1,92	2,05	0,789	4,55
PVA/CS-30% HA	3,08	1,41	1,49		3,29
PVA/CS-40% HA	3,63	1,16	1,26		3,50
PVA/CS-50% HA	1,55	1,27	1,47		16,33

6. Uji Kekerasan PVA/CS-20%HA



**Kementerian
Perindustrian**
REPUBLIK INDONESIA

BADAN STANDARDISASI DAN KEBIJAKAN JASA INDUSTRI
LABORATORIUM PENGUJI BBSPJIHPMM

Jalan Prof. Dr. H. Abdurrahman Basalamah, MA No.28 Makassar 90231
Telp: (0411) 441207 Fax: (0411) 441135 Website: www.bbhp.kemenperin.go.id E-mail: bbhp@kemenperin.go.id

LAPORAN PENGUJIAN

Nomor: 2.008/LU-BBSPJIHPMM/2024

Nomor Analisis : P. 7611
Tanggal Penerimaan : 28 November 2023
Nama Pelanggan : Nur Safitri
Alamat : Fisika, Universitas Hasanuddin
Nama Contoh : Biokeramik Hidroksiapatit
Keterangan Contoh : Kode 1851.2673.1, Keadaan Contoh Baik, Sampel A, Untuk Analisis Fisika
Pengambilan Contoh : -
Berita Acara : -
Tanggal Analisis : 01 Desember 2023
Tanggal Penerbitan : 08 Januari 2024



Setelah dilakukan pengujian, diperoleh hasil sebagai berikut :

Parameter	Satuan	Hasil		Metode Uji
		I	II	
Kekerasan	N/mm ²	7,1	7,0	ASTM D638-02a-20002

Wakil Manajer Puncak



MAMANG

ASLI ORIGINAL

Catatan :

- Hasil Uji hanya berlaku untuk contoh tersebut di atas
- Dilarang mengutip/menyalin sebagian isi hasil uji ini

Halaman 1 dari 1

PVA/CS-30% HA



**Kementerian
Perindustrian**
REPUBLIK INDONESIA

**BADAN STANDARDISASI DAN KEBIJAKAN JASA INDUSTRI
LABORATORIUM PENGUJI BBSPJIHPMM**

Jalan Prof. Dr. H. Abdurrahman Basalamah, MA No 28 Makassar 90231

Telp: (0411) 441207 Fax: (0411) 441135 Website: www.bbhp.kemiperin.go.id E-mail: bbhp@kemiperin.go.id

LAPORAN PENGUJIAN

Nomor : 2.009/LU-BBSPJIHPMM/2024

Nomor Analisis : P. 7612
 Tanggal Penerimaan : 28 November 2023
 Nama Pelanggan : Nur Safitri
 Alamat : Fisika, Universitas Hasanuddin
 Nama Contoh : Biokeramik Hidroksilapatit
 Keterangan Contoh : Kode 1851.2673.2, Keadaan Contoh Baik, Sampel B, Untuk Analisis Fisika
 Pengambilan Contoh : -
 Berita Acara : -
 Tanggal Analisis : 01 Desember 2023
 Tanggal Penerbitan : 08 Januari 2024



Setelah dilakukan pengujian, diperoleh hasil sebagai berikut :

Parameter	Satuan	Hasil		Metode Uji
		I	II	
Kekerasan	N/mm ²	9,9	9,8	ASTM D638-02a-20002

Wakil Manajer Puncak



Catatan :

- Hasil Uji hanya berlaku untuk contoh tersebut di atas
- Dilarang mengutip/menyalin sebagian isi hasil uji ini

PVA/CS-40% HA



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Perindustrian**
REPUBLIK INDONESIA

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Telp: (0411) 441207 Fax: (0411) 441135 Website: www.bbihp.kemenperin.go.id E-mail: bbihp@kemenperin.go.id

LAPORAN PENGUJIAN

Nomor : 2.010/LU-BBSPJIHPMM/2024

Nomor Analisis : P. 7613
 Tanggal Penerimaan : 28 November 2023
 Nama Pelanggan : Nur Safitri
 Alamat : Fisika, Universitas Hasanuddin
 Nama Contoh : Biokeramik Hidroksiapatit
 Keterangan Contoh : Kode 1851.2673.3, Keadaan Contoh Baik, Sampel C, Untuk Analisis Fisika
 Pengambilan Contoh : -
 Berita Acara : -
 Tanggal Analisis : 01 Desember 2023
 Tanggal Penerbitan : 08 Januari 2024



Setelah dilakukan pengujian, diperoleh hasil sebagai berikut :

Parameter	Satuan	Hasil		Metode Uji
		I	II	
Kekerasan	N/mm ²	9,2	9,2	ASTM D638-02a-20002

Wakil Manajer Puncak

MAMANG

Catatan :

- Hasil Uji hanya berlaku untuk contoh tersebut di atas
- Dilarang mengutip/menyalin sebagian isi hasil uji ini

7. Lampiran SK Pembimbing dan Penguji



KEMENTERIAN PENDIDIKAN KEBUDAYAAN,
RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN
FAKULTAS MIPA
JL. PERINTIS KEMERDEKAAN KM. 10, MAKASSAR 90245
TELEPON (0411) 586200, (6 SALURAN), 584200, FAX (0411) 585188
Laman: www.unhas.ac.id

SURAT KEPUTUSAN
DEKAN FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS HASANUDDIN
NOMOR : 02139/UN4.11.7/KEP/2023

TENTANG
PENGANGKATAN KOMISI PENASEHAT TESIS BAGI MAHASISWA PROGRAM STUDI
MAGISTER A.N. NUR SAFITRI NOMOR INDUK MAHASISWA H03221011

DEKAN FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS HASANUDDIN

- Membaca** : Surat usulan Ketua Program Studi Magister Fisika Nomor : 26417/UN4.11.7/TD.05/2023 Tanggal 13 September 2023 perihal usulan komisi penasehat dan rencana judul tesis bagi Sdr. (i) Nur Safitri
- Menimbang** : a. Bahwa dalam rangka pelaksanaan bimbingan tesis bagi Sdr. (i) Nur Safitri Nomor Induk Mahasiswa H032221011 Program Studi Magister Fisika Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Hasanuddin, dipandang perlu mengangkat Ketua Komisi Penaschat dan Anggota Komisi Penasehat Tesis;
b. Bahwa untuk keperluan huruf (a) di atas, maka dipandang perlu menerbitkan surat keputusan.
- Mengingat** : 1. Keputusan Rektor UNHAS No. 7343/J04/P/2001
2. Keputusan Rektor UNHAS No. 1067/J04/P/2003
3. Keputusan Rektor UNHAS No. 824/H4/P/2007
- MEMUTUSKAN:**
- Menetapkan**
- Pertama** : Mengangkat Ketua dan Anggota Komisi Penaschat Tesis bagi Sdr. (i) Nur Safitri Nomor Induk Mahasiswa H032221011 Program Studi Magister Fisika Fakultas MIPA Unhas dengan susunan sebagai berikut:
1. Dr. Nurlaela Rauf, M.Sc (Ketua)
 2. Prof. Dr. Dahlang Tahir, M.Si (Anggota)
- Kedua** : Segala biaya yang timbul sehubungan dengan Surat Keputusan ini dibebankan pada DIPA Unhas alokasi Fakultas MIPA Unhas.
- Ketiga** : Surat Keputusan ini berlaku terhitung mulai tanggal ditetapkannya sampai dengan selesainya masa studi yang bersangkutan, dengan ketentuan apabila dikemudian hari ternyata terdapat kesalahan atau kekeliruan di dalamnya, akan diadakan perbaikan sebagaimana mestinya.

Ditetapkan di Makassar
pada Tanggal, 19 September 2023
Wakil Dekan Bidang Akademik dan
Kemahasiswaan Fakultas MIPA Unhas,



- Tembusan:**
1. Dekan FMIPA Unhas;
 2. Ketua Program Studi S2 Fisika FMIPA Unhas
 3. Sdr (i) ; Nur Safitri

Dr. Khaeruddin, M.Sc.
Nip. 196509141991031003



**KEMENTERIAN PENDIDIKAN KEBUDAYAAN,
RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN
FAKULTAS MIPA**
JL. PERINTIS KEMERDEKAAN KM. 10, MAKASSAR 90245
TELEPON (0411) 586200, (6 SALURAN), 584200, FAX (0411) 585188
Laman: www.unhas.ac.id

SURAT KEPUTUSAN
DEKAN FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS HASANUDDIN
NOMOR : 02136/UN4.11.7/KEP/2023

TENTANG

SURAT KEPUTUSAN PENGANGKATAN PANITIA PENILAI SEMINAR USUL, HASIL DAN
UJIAN AKHIR BAGI MAHASISWA PROGRAM MAGISTER A.N. NUR SAFITRI
NOMOR INDUK MAHASISWA H032221011

DEKAN FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS HASANUDDIN

- Membaca** : Surat usulan Ketua Program Studi Magister Fisika Nomor : 26416/UN4.11.7/TD.05/2023 tanggal 13 September 2023 Perihal Usulan Panitia Penilai Seminar Usul, Hasil dan Ujian Akhir Magister Sdr.(i) Nur Safitri
- Menimbang** : a. Bahwa dalam rangka Pelaksanaan Seminar Usul, Hasil dan Ujian Magister bagi Sdr.(i) Nur Safitri Nomor Induk Mahasiswa H032221011 Program Studi Magister Fisika Pada Program Studi Fisika Fakultas MIPA Unhas, dipandang perlu mengangkat Panitia Penilai Seminar Usul, Hasil dan Ujian Akhir Magister.
b. Bahwa untuk keperluan huruf (a) di atas, maka dipandang perlu menerbitkan Surat Keputusan.
- Mengingat** : 1. Keputusan Rektor UNHAS No. 7343/J04/P/2001
2. Keputusan Rektor UNHAS No. 1067/J04/P/2003
3. Keputusan Rektor UNHAS No. 824/H4/P/2007
- MEMUTUSKAN:**
- Menetapkan**
Pertama : Mengangkat Panitia Penilai Seminar Usul, Hasil dan Ujian Akhir Magister bagi Sdr. (i) Nur Safitri Nomor Induk Mahasiswa H032221011 Program Studi Magister Fisika Fakultas MIPA Unhas dengan susunan sebagai berikut :
- | | |
|---------------------------------------|--------------|
| 1. Dr. Nurlaela Rauf, M.Sc | (Ketua) |
| 2. Prof. Dr. Dahlang Tahir, M.Si | (Sekretaris) |
| 3. Prof. Dr. Paulus Lobo Gareso, M.Sc | (Anggota) |
| 4. Prof. Dr. Tasrief Surungan, M.Sc | (Anggota) |
| 5. Dr. Ir. Bidayatul Armynah, M.T | (Anggota) |
- Kedua** : Segala biaya yang timbul sehubungan dengan Surat Keputusan ini dibebankan pada DIPA Unhas alokasi Fakultas MIPA Unhas.
- Ketiga** : Surat Keputusan ini berlaku terhitung mulai tanggal ditetapkannya sampai dengan selesainya masa studi yang bersangkutan, dengan ketentuan apabila dikemudian hari ternyata terdapat kesalahan atau kekeliruan di dalamnya, akan diadakan perbaikan sebagaimana mestinya.

Ditetapkan di Makassar
pada Tanggal, 19 September 2023
Wakil Dekan Bidang Akademik dan
Kemahasiswaan Fakultas MIPA Unhas,



Dr. Khaeruddin, M.Sc.
Nip.196509141991031003

- Tembusan :**
1. Dekan FMIPA Unhas;
2. Kctua Program Studi S2 Fisika FMIPA Unhas
3. Sdr.(i) ; Nur Safitri