

## LAMPIRAN I

### Data analisa XRD

#### 1. Sampel I (NaOH 0% b/v)

no. puncak	2 Teta (derajat)	d (Å)	I/I1	FWHM	Intensitas (Counts)
1	14,3618	6,16228	53	2,32360	2595
2	16,5200	5,36177	24	0,00000	1200
3	20,3600	4,35835	37	3,80000	1841
4	22,4359	3,95956	100	1,66190	4934
5	25,7800	3,45302	5	2,10660	265

#### 2. Sampel IV (NaOH 15% b/v)

no. puncak	2 Teta (derajat)	d (Å)	I/I1	FWHM	Intensitas (Counts)
1	14,3019	6,18795	47	2,15040	3334
2	16,5400	5,35533	18	0,00000	1311
3	20,3800	4,35412	34	2,34460	2398
4	22,4505	3,95702	100	1,62140	7092
5	25,7800	3,45302	4	2,13340	280

#### 3. Sampel V (NaOH 20% b/v)

no. puncak	2 Teta (derajat)	d (Å)	I/I1	FWHM	Intensitas (Counts)
1	14,4728	6,11526	38	2,49430	1328
2	16,5800	5,34250	22	0,00000	754
3	20,3800	4,35412	35	2,74400	1218
4	22,4509	3,95695	100	1,64680	3494
5	26,0000	3,42430	4	1,88000	141

## LAMPIRAN II

### PERUBAHAN KRISTALINITAS

$$\% \text{ Perubahan Kristalinitas} = \frac{\sum \text{Luas sampel dengan penambahan NaOH}}{\sum \text{Luas sampel tanpa penambahan NaOH}} \times 100 \%$$

Luas sampel tanpa penambahan NaOH (NaOH 0 % (b/v))

$$= 2,32360 \times 2595 + 0,00000 \times 1200 + 3,80000 \times 1841 + 1,66190 \times 2,10660 + 2,10660 \times 265$$
$$= 21783,6056$$

1. sampel IV: NaOH 15 % (b/v)

$$\% \text{ perubahan kristalinitas sampel IV} = \frac{\sum \text{luas sampel IV}}{\sum \text{luas sampel I}} \times 100 \%$$

$$= \frac{2,15040 \times 3334 + 0,00000 \times 1311 + 2,34460 \times 2398 + 1,62140 \times 7092 + 2,13340 \times 280}{21783,6056} \times 100 \%$$

$$= \frac{24888,1520}{21783,6056} \times 100 \%$$

$$= 11,6 / 515415 \%$$

$$= 11,5 \%$$
 (pembulatan)

## 2. sampel V: NaOH 20 % (b/v)

$$\% \text{ perbandingan kristalinitas sampel V} = \frac{\sum \text{luas sampel V}}{\sum \text{luas sampel I}} \times 100 \%$$

$$= \frac{2,457430 \times 1328 + 0,00000 \times 754 + 2,74400 \times 1218 + 1,64680 \times 3494 + 3494 + 1,88000 \times 141}{21783,6056} \times 100 \%$$

$$= \frac{12277,6216}{21783,6056} \times 100 \%$$

$$= 58 \%$$

$$= 58 \%$$
 (pembulatan)

### LAMPIRAN III

Tabel 4. Kekuatan tarik lembaran bioselulosa *nata de coco* hasil mercerisasi

kode sampel	Gramatur (gr/m <sup>2</sup> )	konsentrasi NaOH (%)	kekuatan tarik (kgf/10 cm <sup>2</sup> )			kekuatan tarik rata-rata ( 10 <sup>-2</sup> MPa)
			1	2	rata-rata	
I	40	0	1,72	1,10	1,410	1,383
II	56	5	1,81	2,20	2,005	1,849
III	52	10	3,12	3,31	3,215	2,964
IV	56	15	6,89	7,50	7,195	6,634
V	64	20	2,50	2,71	2,605	2,402

#### Perhitungan konversi satuan kekuatan tarik

$$1 \text{ kgf} = 9,807 \times 10^5 \text{ dyne}$$

$$1 \text{ dyne.cm}^{-2} = 0,1 \text{ Pa}$$

$$1 \text{ Pa} = 10^{-6} \text{ MPa}$$

Contoh:

$$\begin{aligned} \text{Kekuatan tarik sampel I} &= 1,410 \text{ kgf/10 cm}^2 \\ &= \frac{1,410 \times 9,807 \times 10^5 \text{ dyne}}{10 \text{ cm}^2} \\ &= 138278,7 \text{ dyne.cm}^{-2} \\ &= 138278,7 \times 0,1 \text{ Pa} \\ &= 13827,87 \text{ Pa} \\ &= 1,383 \times 10^{-2} \text{ MPa} \end{aligned}$$

Tabel 5. Porositas lembaran bioselulosa *nata de coco* hasil mercerisasi

kode sampel	konsentrasi NaOH (%)	porositas (mL.s <sup>-1</sup> )		
		1	2	rata-rata
I	0	9	7	8
II	5	63	95	79
III	10	23	15	19
IV	15	4	5	4,5
V	20	700	800	750