

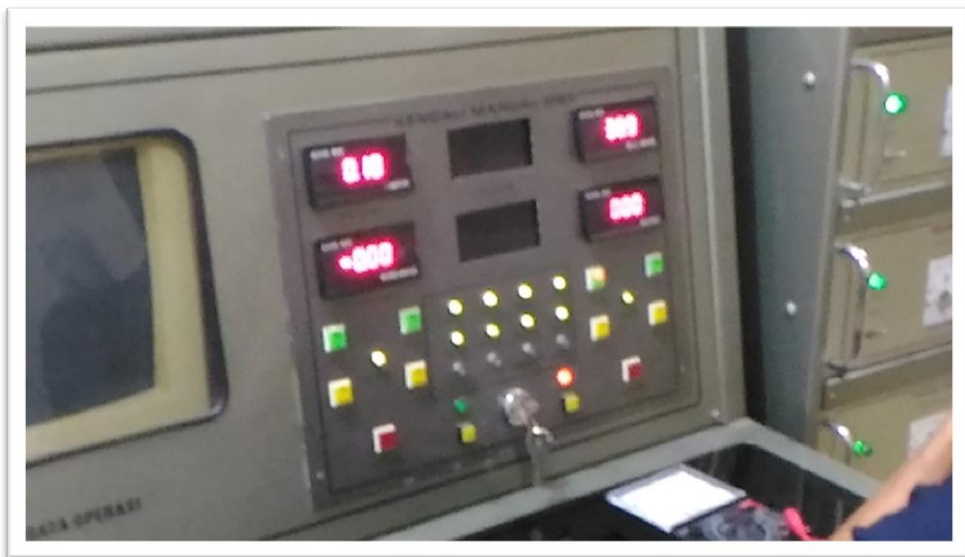
LAMPIRAN

Lampiran 1

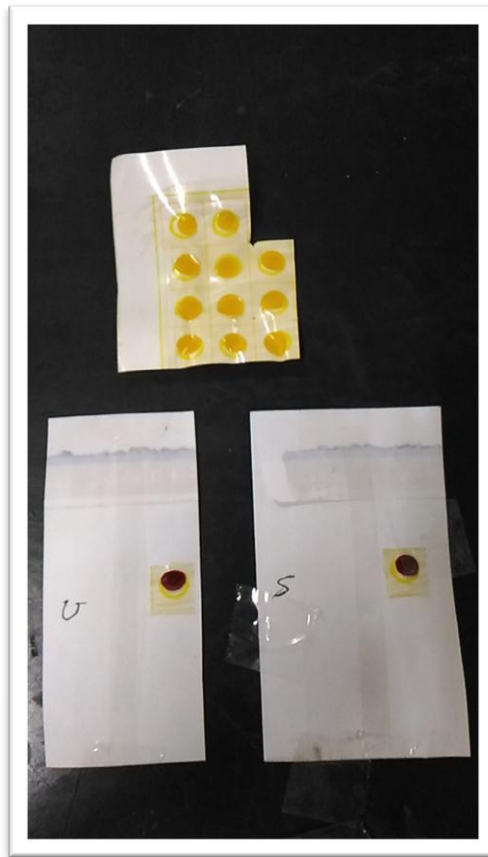
Dokumentasi



Gambar 1. Mesin Operator MBE



Gambar 2. Mesin Operator MBE



Gambar 3. Indikator Radiasi MBE



Gambar 4. Proses Iradiasi MBE



Gambar 5. Mesin Berkas Elektron (MBE)



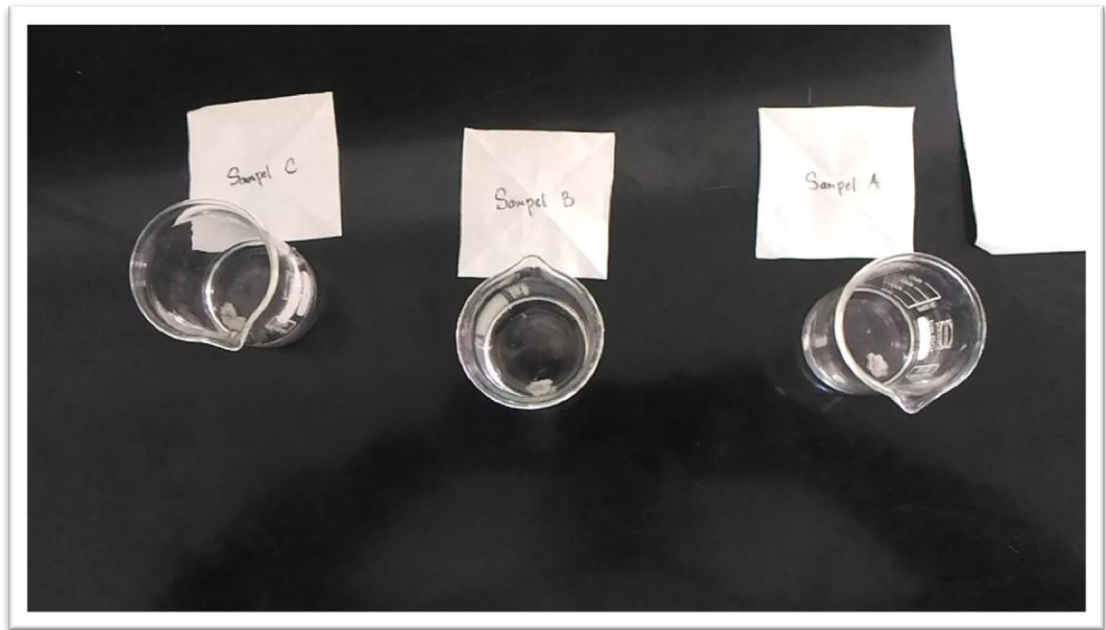
Gambar 6. Bagian Radiasi Elektron dari MBE



Gambar 7. SAP Sebelum Iradiasi



Gambar 8. SAP Sesudah Iradiasi



Gambar 9. Sampel Uji Grafting



Gambar 10. Timbangan Analitik



Gambar 11. Uji Grafting Cuplikan A



Gambar 12. Uji Grafting Cuplikan B



Gambar 13. Uji Grafting Cuplikan C

Lampiran 2

Prosedur Pekerjaan Penelitian

1. Penyiapan Umpan untuk Pembuatan Selulosa

Alat dan Bahan :

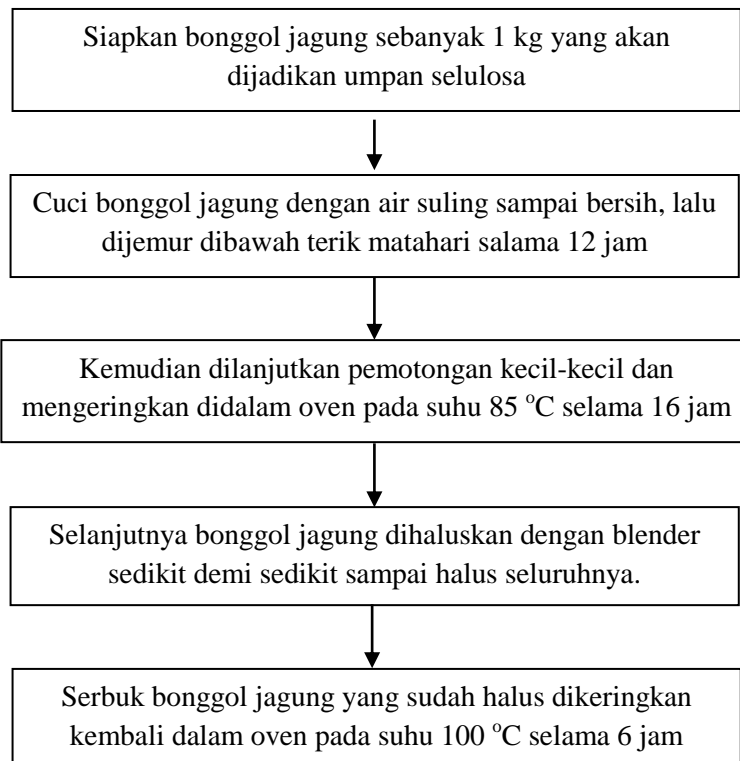
Alat

1. Oven
2. Blender
3. Gunting
4. Gelas Beker

Bahan

1. Bonggol jagung
2. Air Suling
3. Aquadest

Cara Kerja :



2. Pembuatan Selulosa

Alat dan Bahan :

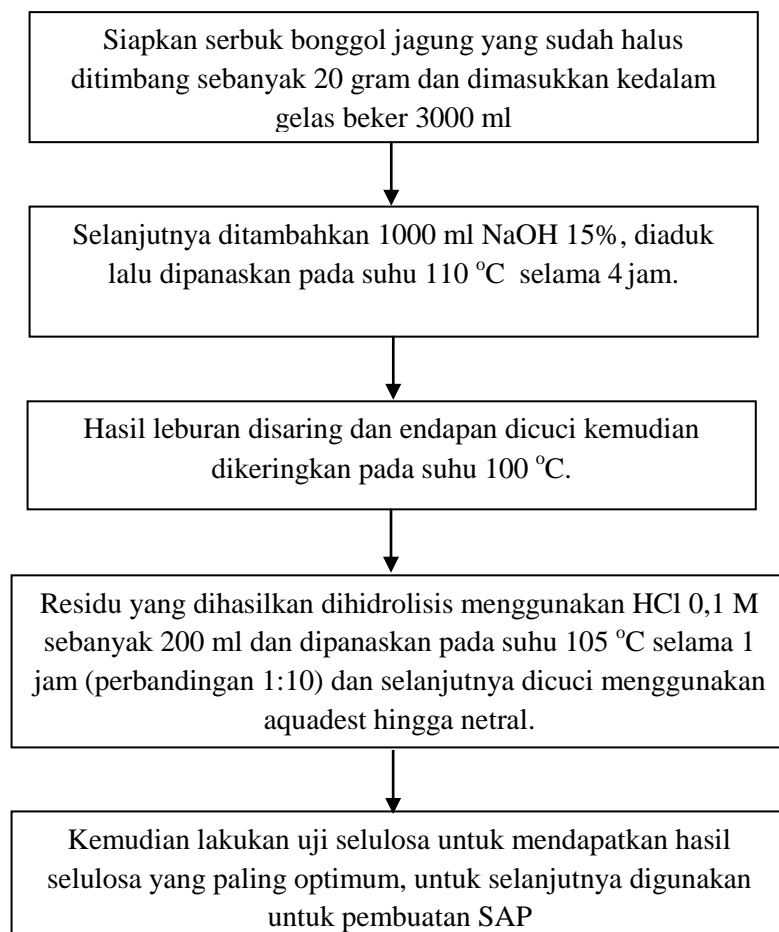
Alat

1. Oven
2. Stirer
3. Gelas Beker
4. Erlenmeyer
5. Timbangan
6. Corong
7. Kertas Saring

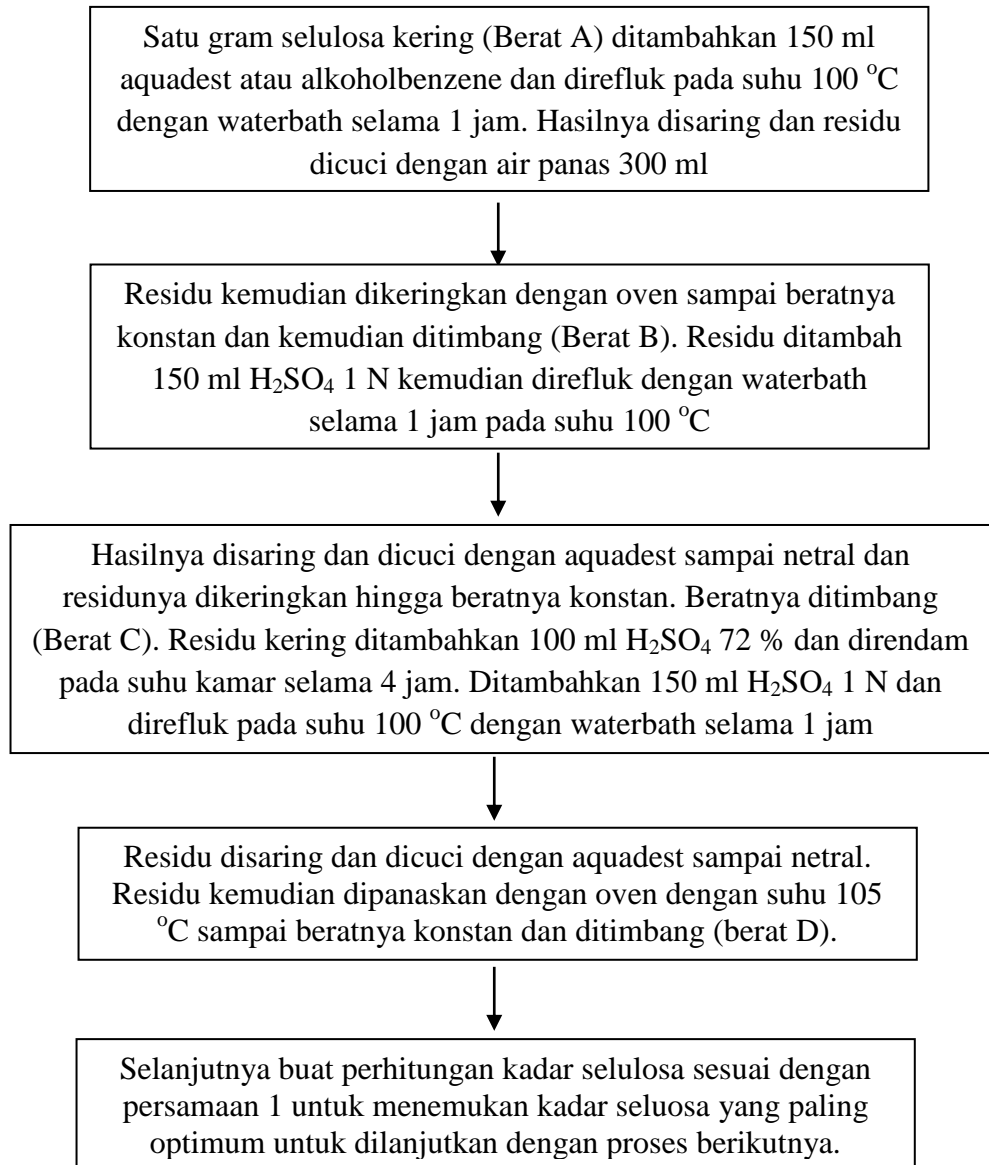
Bahan

1. Serbuk Bonggol Jagung
2. Aquadest
3. NaOH
4. HCl
5. H₂SO₄

Cara Kerja :



Uji kadar selulosa



$$\text{Kadar selulosa} = \frac{\text{Berat C} - \text{Berat D}}{\text{Berat A}} \times 100\% \dots\dots\dots (1)$$

3. Pembuatan SAP dengan Iradiasi Berkas Elektron menggunakan Mesin Berkas Elektron (MBE)

Alat dan Bahan :

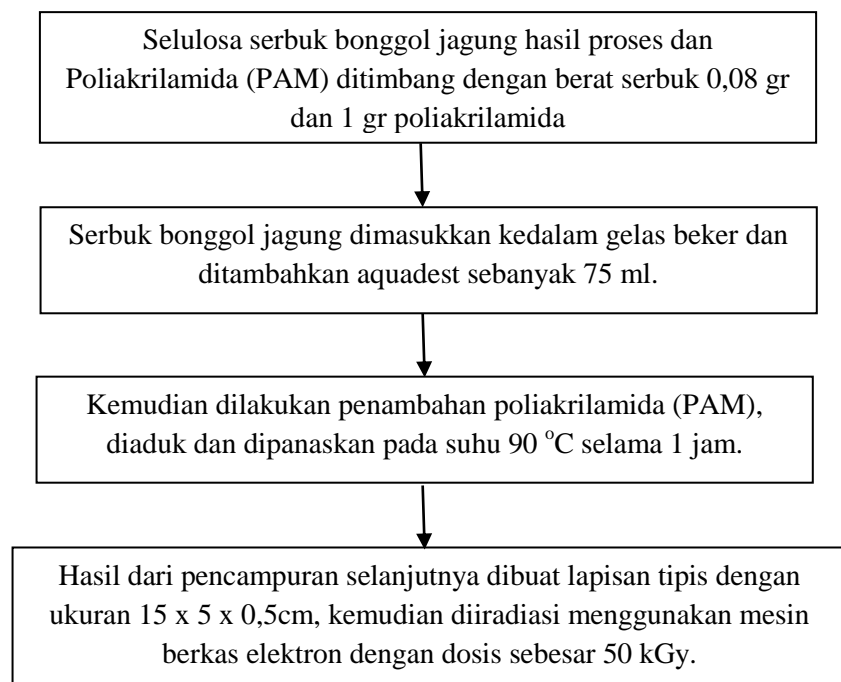
Alat

1. Mesin Berkas Elektron
2. Gelas Beker
3. Timbangan
4. Kompor
5. Cetakan
6. Spatula

Bahan

1. Selulosa Serat Aren
2. Poliakrilamida
3. Aquadest

Cara Kerja :



4. Pemurnian SAP

Alat dan Bahan :

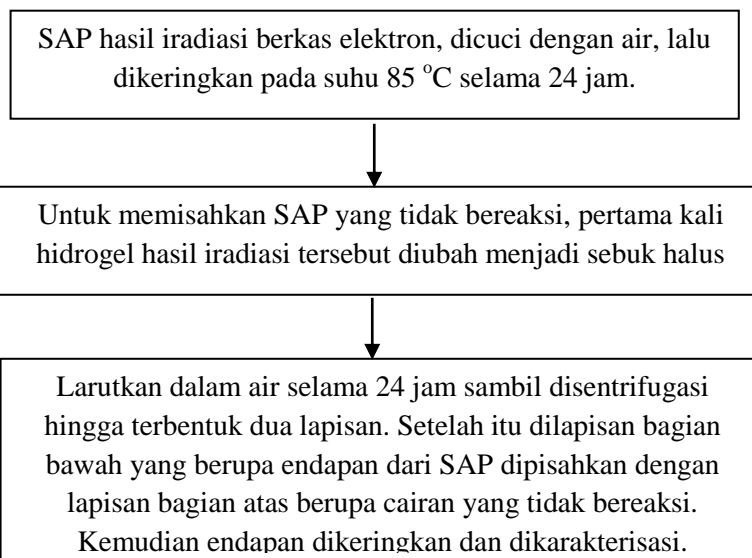
Alat

1. Oven
2. Cawan Penghalus
3. Gunting
4. Gelas Beker

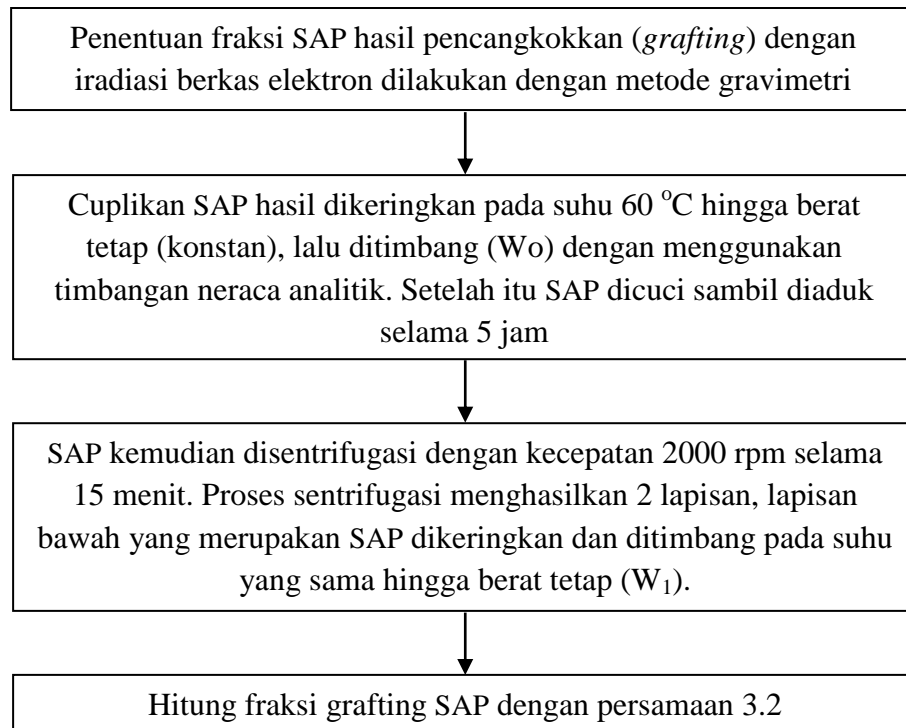
Bahan

1. SAP hasil iradiasi berkas elektron
2. Aquadest

Cara Kerja :



5. Pengujian fraksi pencangkokan (*Grafting*) SAP.



$$\text{Fraksi Grafting} = \frac{W_1}{W_0} \times 100\% \dots\dots\dots (3.2)$$

Lampiran 3

Data Hasil Penelitian

Uji Selulosa

Persamaan kadar selulosa setelah didapatkannya berat A, B, C dan D :

$$\begin{aligned} \text{Kadar selulosa 1} &= \frac{\text{Berat C} - \text{Berat D}}{\text{Berat A}} \times 100\% \\ &= \frac{0.847 - 0.207}{1} \times 100\% \\ &= 64\% \end{aligned}$$

$$\begin{aligned} \text{Kadar selulosa 2} &= \frac{\text{Berat C} - \text{Berat D}}{\text{Berat A}} \times 100\% \\ &= \frac{0.761 - 0.191}{1} \times 100\% \\ &= 57\% \end{aligned}$$

Uji Grafting

Persamaan fraksi *grafting* :

$$\text{Grafting} = \frac{W_1}{W_0} \times 100\%$$

$$\begin{aligned} \text{Cuplikan 1} &= \frac{0.008}{0.02} \times 100\% \\ &= 40\% \end{aligned}$$

$$\begin{aligned} \text{Cuplikan 2} &= \frac{0.009}{0.02} \times 100\% \\ &= 45\% \end{aligned}$$

$$\begin{aligned} \text{Cuplikan 3} &= \frac{0.015}{0.02} \times 100\% \\ &= 75\% \end{aligned}$$

Lampiran 4

Tabel Korelasi Spektrofotometri FT-IR

TABLE 2.3
A SIMPLIFIED CORRELATION CHART

Type of Vibration			Frequency (cm ⁻¹)	Intensity	Page Reference
C-H	Alkanes	(stretch)	3000-2850	s	31
		-CH ₃ (bend)	1450 and 1375	m	
		-CH ₂ - (bend)	1465	m	
	Alkenes	(stretch)	3100-3000	m	33
		(out-of-plane bend)	1000-650	s	
	Aromatics	(stretch)	3150-3050	s	43
		(out-of-plane bend)	900-690	s	
	Alkyne	(stretch)	ca. 3300	s	35
	Aldehyde		2900-2800	w	56
			2800-2700	w	
C-C	Alkane	Not interpretatively useful			
C=C	Alkene	1680-1600	m-w	33	
	Aromatic	1600 and 1475	m-w	43	
C≡C	Alkyne	2250-2100	m-w	35	
C=O	Aldehyde	1740-1720	s	56	
	Ketone	1725-1705	s	58	
	Carboxylic acid	1725-1700	s	62	
	Ester	1750-1730	s	64	
	Anhydride	1680-1630	s	70	
	Amide	1810 and 1760	s	73	
	Acid chloride	1800	s	72	
C-O	Alcohols, ethers, esters, carboxylic acids, anhydrides	1300-1000	s	47, 50, 62, 64, and 73	
O-H	Alcohols, phenols	Free	3650-3600	m	47
		H-bonded	3400-3200	m	47
	Carboxylic acids	3400-2400	m	62	
N-H	Primary and secondary amines and amides	(stretch)	3500-3100	m	74
		(bend)	1640-1550	m-s	74
C-N	Amines	1350-1000	m-s	74	
C=N	Imines and oximes	1690-1640	w-s	77	
C≡N	Nitriles	2260-2240	m	77	
X=C=Y	Allenes, ketenes, isocyanates, isothiocyanates	2270-1940	m-s	77	
N=O	Nitro (R-NO ₂)	1550 and 1350	s	79	
S-H	Mercaptans	2550	w	81	
S=O	Sulfoxides	1050	s	81	
	Sulfones, sulfonyl chlorides, sulfates, sulfonamides	1375-1300 and 1150-1140	s	82	
C-X	Fluoride	1400-1000	s	85	
	Chloride	785-540	s	85	
	Bromide, iodide	< 667	s	85	