LAMPIRAN

Lampiran 1 Jenis-jenis Gugus Fungsi FTIR

functional group wavenumbers		
bond	wave#	intensity
O—H	3650-3200	strong, broad
C—H	3300-2700	medium
N—H	3500-3300	medium, broad
C≡N	2260-2220	medium
C≡C	2260-2100	weak-medium
C=C	1680-1600	medium
C=N	1650-1550	medium
C=O	1780-1650	strong
C—O	1250-1050	strong

Functional Group	Frequency (cm-1)	intensity
water OH Stretch	3700-3100	strong
alcohol OH stretch	3600-3200	strong
carboxylic acid OH stretch	3600-2500	strong
N-H stretch	3500-3350	strong
≡C–H stretch	~3300	strong
=C-H stretch	3100-3000	weak
-C-H stretch	2950-2840	weak
-C-H aldehydic	2900-2800	variable
C≡N stretch	~2250	strong
C=C stretch	2260-2100	variable
C=O aldehyde	1740-1720	strong
C=O anhydride	1840-1800, 1780-1740	weak, strong
C=O ester	1750-1720	strong
C=O ketone	1745-1715	strong
C=O amide	1700-1500	strong
C=C alkene	1680-1600	weak
C=C aromatic	1600-1400	weak
CH_2 bend	1480-1440	medium
CH_3 bend	1465-1440, 1390-1365	medium
C-O-C stretch	1250-1050 several	strong
C-OH stretch	1200-1020	strong
NO_2 stretch	1600-1500 and 1400-1300	strong
C-F	1400-1000	strong
C-Cl	800-600	strong
C-Br	750-500	strong
C-I	~500	strong

Lampiran 2 Data Pengujian *Moisture Content* dan *Moisture Regain*

A. Data Pengujian MC MR

Tabel 1 Data Pengujian MC MR

Sampel	Berat Botol (A)	Berat Basah (B)	Berat Kering (C)
Kain kontrol	90,949 gram	92,15 gram	92,108 gram
Kain Plasma Jarak Optimal	99,367 gram	100,7165 gram	100,663 gram
Kain Plasma Jarak Optimal + Ekstrak 15 gram	64,9 gram	66,335 gram	66,272 gram
Kain Plasma Waktu Optimal	103,0087 gram	103,774 gram	103,746 gram
Kain Plasma Waktu Optimal + Ekstrak20 gram	67,46 gram	68,8735 gram	68,809 gram

B. Perhitungan MC MR

1. Kain Kontrol

Perhitungan MC Kain Kontrol :

$$\text{MC (\%)} = \frac{(\text{B gram} - \text{A gram}) - (\text{C gram} - \text{A gram})}{(\text{B gram} - \text{A gram})} \times 100\% \quad (1)$$

$$\text{MC (\%)} = \frac{(92{,}15\ \text{gram} - 90{,}949\ \text{gram}) - (92{,}108\ \text{gram} - 90{,}949\ \text{gram})}{(92{,}15\ \text{gram} - 90{,}949\ \text{gram})} \times 100\% \quad (2)$$

$$\text{MC (\%)} = \frac{(1{,}201\ \text{gram}) - (1{,}159\ \text{gram})}{(1{,}201\ \text{gram})} \times 100\% \quad (3)$$

$$\text{MC (\%)} = \frac{(0{,}042\text{gram})}{(1{,}201\ \text{gram})} \times 100\% \quad (4)$$

$$\text{MC (\%)} = 3{,}497\% \quad (5)$$

Perhitungan MR Kain Kontrol :

$$\text{MR(\%)} = \frac{(\text{B gram} - \text{A gram}) - (\text{C gram} - \text{A gram})}{(\text{C gram} - \text{A gram})} \times 100\% \quad (1)$$

$$\text{MR (\%)} = \frac{(92{,}15\ \text{gram} - 90{,}949\ \text{gram}) - (92{,}108\ \text{gram} - 90{,}949\ \text{gram})}{(92{,}108\ \text{gram} - 90{,}949\ \text{gram})} \times 100\% \quad (2)$$

$$\text{MR (\%)} = \frac{(1{,}201\ \text{gram}) - (1{,}159\ \text{gram})}{(1{,}159\ \text{gram})} \times 100\% \quad (3)$$

$$\text{MR (\%)} = \frac{(0{,}042\text{gram})}{(1{,}159\ \text{gram})} \times 100\% \quad (4)$$

$$\text{MR (\%)} = 3{,}624\% \quad (5)$$

2. Kain Plasma Jarak Optimal

Perhitungan MC Kain Plasma Jarak Optimal :

$$\text{MC (\%)} = \frac{(\text{B gram} - \text{A gram}) - (\text{C gram} - \text{A gram})}{(\text{B gram} - \text{A gram})} \times 100\% \quad (1)$$

$$\text{MC (\%)} = \frac{(100{,}7165\ \text{gram} - 99{,}367\ \text{gram}) - (100{,}663\ \text{gram} - 99{,}367\ \text{gram})}{(100{,}7165\ \text{gram} - 99{,}367\ \text{gram})} \times 100\% \quad (2)$$

$$\text{MC (\%)} = \frac{(1{,}3495\ \text{gram}) - (1{,}296\ \text{gram})}{(1{,}3495\ \text{gram})} \times 100\% \quad (3)$$

$$\text{MC (\%)} = \frac{(0{,}0535\ \text{gram})}{(1{,}3495\ \text{gram})} \times 100\% \quad (4)$$

$$\text{MC (\%)} = 3{,}964\% \quad (5)$$

Perhitungan MR Kain Plasma Jarak Optimal :

$$\text{MR(\%)} = \frac{(\text{B gram} - \text{A gram}) - (\text{C gram} - \text{A gram})}{(\text{C gram} - \text{A gram})} \times 100\% \quad (1)$$

$$\text{MR (\%)} = \frac{(100{,}7165\ \text{gram} - 99{,}367\ \text{gram}) - (100{,}663\ \text{gram} - 99{,}367\ \text{gram})}{(100{,}663\ \text{gram} - 99{,}367\ \text{gram})} \times 100\% \quad (2)$$

$$\text{MR (\%)} = \frac{(1{,}3495\ \text{gram}) - (1{,}159\ \text{gram})}{(1{,}296\ \text{gram})} \times 100\% \quad (3)$$

$$\text{MR (\%)} = \frac{(0{,}0535\ \text{gram})}{(1{,}296\ \text{gram})} \times 100\% \quad (4)$$

MR (%) = 4,128% (5)

3. Kain Plasma Jarak Optimal + Ekstrak 15 gram

Perhitungan MC Kain Plasma Jarak Optimal + Ekstrak 15 gram :

$$\text{MC (\%)} = \frac{(\text{B gram} - \text{A gram}) - (\text{C gram} - \text{A gram})}{(\text{B gram} - \text{A gram})} \times 100\% \quad (1)$$

$$\text{MC (\%)} = \frac{(66{,}335\ \text{gram} - 64{,}9\ \text{gram}) - (66{,}272\ \text{gram} - 64{,}9\ \text{gram})}{(66{,}335\ \text{gram} - 64{,}9\ \text{gram})} \times 100\% \quad (2)$$

$$\text{MC (\%)} = \frac{(1{,}435\ \text{gram}) - (1{,}372\ \text{gram})}{(1{,}435\ \text{gram})} \times 100\% \quad (3)$$

$$\text{MC (\%)} = \frac{(0{,}063\ \text{gram})}{(1{,}435\ \text{gram})} \times 100\% \quad (4)$$

MC (%) = 4,39% (5)

Perhitungan MR Kain Plasma Jarak Optimal + Ekstrak 15 gram :

$$\text{MR(\%)} = \frac{(\text{B gram} - \text{A gram}) - (\text{C gram} - \text{A gram})}{(\text{C gram} - \text{A gram})} \times 100\% \quad (1)$$

$$\text{MR (\%)} = \frac{(66{,}335\ \text{gram} - 64{,}9\ \text{gram}) - (66{,}272\ \text{gram} - 64{,}9\ \text{gram})}{(66{,}272\ \text{gram} - 64{,}9\ \text{gram})} \times 100\% \quad (2)$$

$$\text{MR (\%)} = \frac{(1{,}435\ \text{gram}) - (1{,}372\ \text{gram})}{(1{,}372\ \text{gram})} \times 100\% \quad (3)$$

$$\text{MR (\%)} = \frac{(0{,}063\ \text{gram})}{(1{,}372\ \text{gram})} \times 100\% \quad (4)$$

MR (%) = 4,592% (5)

4. Kain Plasma Waktu Optimal

Perhitungan MC Kain Plasma Waktu Optimal :

$$\text{MC (\%)} = \frac{(\text{B gram} - \text{A gram}) - (\text{C gram} - \text{A gram})}{(\text{B gram} - \text{A gram})} \times 100\% \quad (1)$$

$$MC\ (\%) = \frac{(103{,}774\ \text{gram} - 103{,}0087\ \text{gram}) - (103{,}746\ \text{gram} - 103{,}0087\ \text{gram})}{(103{,}774\ \text{gram} - 103{,}0087\ \text{gram})} \times 100\% \quad (2)$$

$$MC\ (\%) = \frac{(0{,}7653\ \text{gram}) - (0{,}7373\ \text{gram})}{(0{,}7653\ \text{gram})} \times 100\% \quad (3)$$

$$MC\ (\%) = \frac{(0{,}028\ \text{gram})}{(0{,}7653\ \text{gram})} \times 100\% \quad (4)$$

$$MC\ (\%) = 3{,}659\% \quad (5)$$

Perhitungan MR Kain Plasma Waktu Optimal :

$$MR(\%) = \frac{(\text{B gram} - \text{A gram}) - (\text{C gram} - \text{A gram})}{(\text{C gram} - \text{A gram})} \times 100\% \quad (1)$$

$$MR\ (\%) = \frac{(103{,}774\ \text{gram} - 103{,}0087\ \text{gram}) - (103{,}746\ \text{gram} - 103{,}0087\ \text{gram})}{(103{,}746\ \text{gram} - 103{,}0087\ \text{gram})} \times 100\% \quad (2)$$

$$MR\ (\%) = \frac{(0{,}7653\ \text{gram}) - (0{,}7373\ \text{gram})}{(0{,}7373\ \text{gram})} \times 100\% \quad (3)$$

$$MR\ (\%) = \frac{(0{,}028\ \text{gram})}{(0{,}7373\ \text{gram})} \times 100\% \quad (4)$$

$$MR\ (\%) = 3{,}798\% \quad (5)$$

5. Kain Plasma Waktu Optimal + Ekstrak 20 gram

Perhitungan MC Kain Plasma Waktu Optimal + Ekstrak 20 gram :

$$MC\ (\%) = \frac{(\text{B gram} - \text{A gram}) - (\text{C gram} - \text{A gram})}{(\text{B gram} - \text{A gram})} \times 100\% \quad (1)$$

$$MC\ (\%) = \frac{(68{,}8735\ \text{gram} - 67{,}46\ \text{gram}) - (68{,}809\ \text{gram} - 67{,}46\ \text{gram})}{(68{,}8735\ \text{gram} - 67{,}46\ \text{gram})} \times 100\% \quad (2)$$

$$MC\ (\%) = \frac{(1{,}4135\ \text{gram}) - (1{,}349\ \text{gram})}{(1{,}4135\ \text{gram})} \times 100\% \quad (3)$$

$$MC\ (\%) = \frac{(0{,}0645\ \text{gram})}{(1{,}4135\ \text{gram})} \times 100\% \quad (4)$$

MC (%) = 4,563% (5)

Perhitungan MR Kain Plasma Waktu Optimal + Ekstrak 20 gram :

$$MR(\%) = \frac{(\text{B gram} - \text{A gram}) - (\text{C gram} - \text{A gram})}{(\text{C gram} - \text{A gram})} \times 100\% \quad (1)$$

$$MR\ (\%) = \frac{(68{,}8735\ \text{gram} - 67{,}46\ \text{gram}) - (68{,}809\ \text{gram} - 67{,}46\ \text{gram})}{(68{,}809\ \text{gram} - 67{,}46\ \text{gram})} \times 100\% \quad (2)$$

$$MR\ (\%) = \frac{(1{,}4135\ \text{gram}) - (1{,}349\ \text{gram})}{(1{,}349\ \text{gram})} \times 100\% \quad (3)$$

$$MR\ (\%) = \frac{(0{,}0645\ \text{gram})}{(1{,}349\ \text{gram})} \times 100\% \quad (4)$$

MR (%) = 4,781% (5)

Lampiran 3 Data Pengujian kain rajut bermotif geometri fraktal (Penelitian Muhammad Ihsan, 2024)

Tabel 2 Hasil Pengujian Radiasi

Sumber Radiasi	Jarak (cm)	Tanpa Kain (V/m)	Kain Non Konduktif (V/m)	Kain Konduktif (V/m)
Layar Komputer	10	464.33	182,6	12,3
	20	120.33	118,3	6,3
	30	89	65,6	5
Layar Telepon Pintar	10	251,6	178,6	25
	20	166	122	2,3
	30	166,5	66	0

Tabel 3 Hasil Pengujian Gramasi

Pengujian	Kain Rajut Konduktif	Kain Rajut Non Konduktif
Mean	586	431
Sd	42	106
Cv%	7,16%	24,59%

Tabel 4 Hasil Pengujian CPI dan WPI

Hasil Pengujian	Kain Rajut Konduktif		Kain Rajut Non Konduktif	
	CPI	WPI	CPI	WPI
Mean	18	15	16,6	14,3
Sd	1	1	0,335	0,335
CV%	1,85%	1,85%	1,34%	1,34%

Tabel 5 TCR FTT

Variasi	Kain Rajut Konduktif	Kain Rajut Non Konduktif
Mean	91.42	79.56
Sd	4.35	2.87
CV	0.05	0.04

Tabel 6 Qmax FTT

Variasi	Kain Rajut Konduktif	Kain Rajut Non Konduktif
Mean	410.34	390.03
Sd	19.03	32.15
CV	0.05	0.08