

Supplementary Material

The Study of Surface Area and Pore Size of Moringa seed proteins (MSP)

The surface area and pore size of MSP were analyzed using the BET–Surface area and the BET–Isotherm plot. Figure S1 shows the adsorption of N₂ gas on MSP.

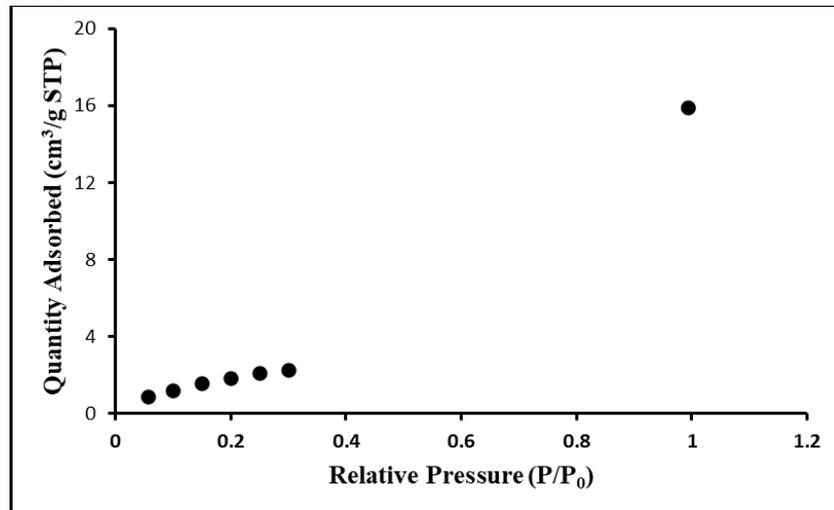


Figure S1: Adsorption isotherm of N₂ gas on MSP.

The adsorption isotherm of N₂ gas on MSP was obtained using the data calculated and tabulated in Table S1.

Table S1. BET analysis Isotherm linear plot (Moringa Adsorption).

Relative Pressure (P/P ₀)	Quantity Adsorbed (cm ³ /g STP)
0.06	0.89
0.10	1.22
0.15	1.56
0.20	1.87
0.25	2.11
0.30	2.29
0.99	15.89

* Partial pressure (P/P₀) applied to the MSP using the Brunaver-Emmett-Teller (BET) technique under the nitrogen gas.

From the surface area plot, a series of the equations was obtained:

$$\frac{P}{V_a(P_0 - P)} = \frac{1}{V_m C} + \frac{(C - 1)}{V_m C} \left(\frac{P}{P_0}\right) \tag{S1}$$

$$\frac{1}{V_m C} = \text{Intercept} \tag{S2}$$

$$\frac{(C - 1)}{V_m C} = \text{Slope} \tag{S3}$$

For the BET adsorption isotherm plot:

$$S_{BET} = \frac{4.355}{Slope + Intercept} \quad (S4)$$

$$C_{BET} = \frac{Slope}{Intercept} + 1 \quad (S5)$$

where V_m is a monolayer volume, V_a is the adsorbed volume $C = C_{BET}$, which is the BET constant, and S_{BET} is the surface area.

Table S2 presents the BET MSP surface area data obtained from the BET investigation of MPS adsorption.

Table S2: BET MSP Surface Area plot.

Relative Pressure (P/P ₀)*	P/[V _a (P ₀ - P)]
0.06	0.07
0.10	0.09
0.15	0.11
0.20	0.13
0.25	0.16
0.30	0.19

* Partial pressure (P/P₀) applied to the MSP using the Brunauer-Emmett-Teller (BET) technique under the nitrogen.

The analysis of the experimental results using the BET equation gave a good straight-line data fit, shown in Figure S2, over the partial pressure range 0.05–0.30.

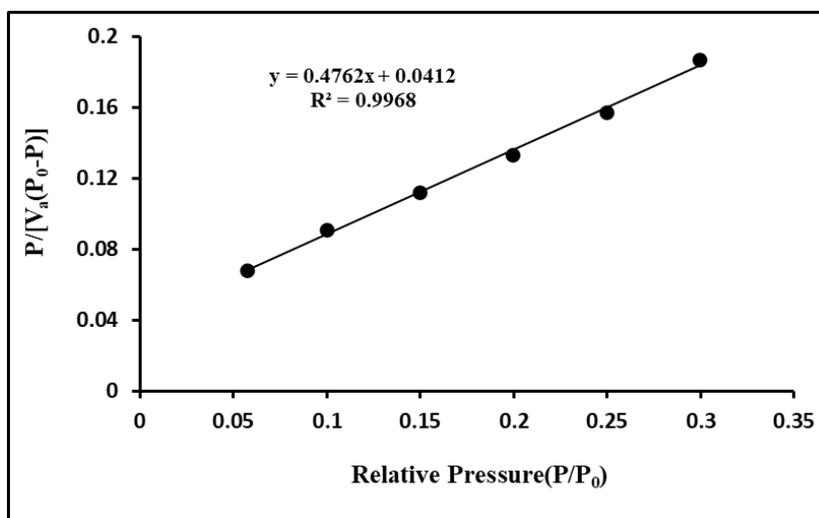


Figure S2: BET linear plot of the adsorption isotherm of N₂ gas on MSP.

Figure S3 shows the scanning electron microscope (SEM) image of CdSe-MSP50.

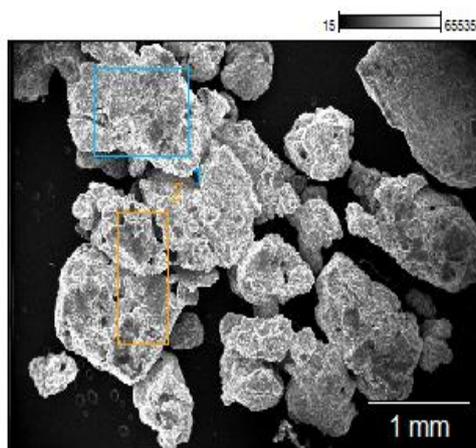


Figure S3: The SEM image of CdSe-MSP50.