Upcycling Plastic Waste and Coconut Shell into Highly Efficient Adsorbents for Groundwater Decontamination of As(III) and Plant Growth Studies

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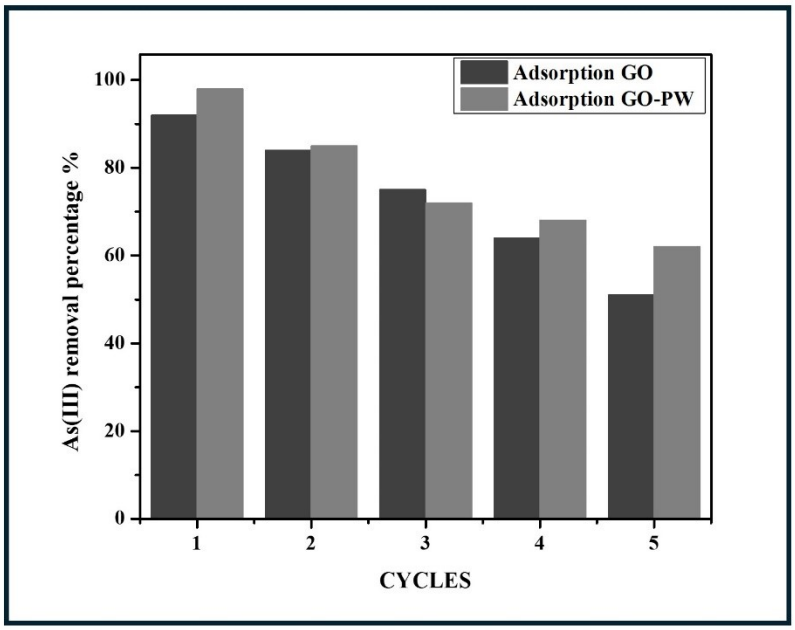


Fig S1. Recyclability study of GO and GO-PW

Table S1. Kinetic model parameters: a) pseudo-order, b) pseudo-second order

a)	**1st order kinetics**				
Metal Ion	**Intercept**	**R^2**	**qe**	**K1**	**R^2**
As(III)	0.80987	0.98	6.45461	-0.00014	0.98

b)	**2nd order kinetics**				
Metal Ion	**Intercept**	**R^2**	**qe**	**K2**	**R^2**
As(III)	4.6809	0.998	3.210067	2.201399	0.998

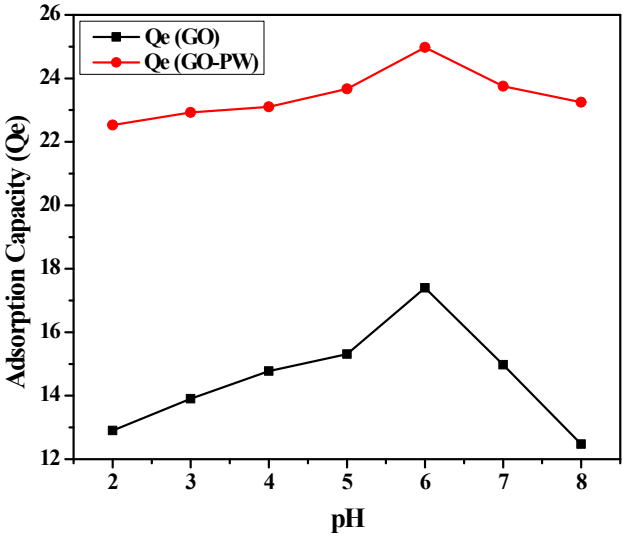
Table S2. Adsorption isotherm models and their parameter values

Metal Ion		**Langmuir Model**	**Freundlich Model**

	Adsorbent	q_{max} (mg/g)	R^2	k_f	1/n	R^2
As(III)	GO	195.3	0.953	4.986	0.14	0.949
	GO-PW	274.7	0.983	5.028	0.20	0.951

Table S3. Thermodynamic parameters of adsorption of As(III) by GO-PW

T(K)	ln K_L	△G° (kJ/mol)	△H° (kJ/mol)	△S° (kJ/mol)
298	124.50	-310.50	-0.0029	0.052
308	128.90	-330.75		
318	133.20	-350.90		


Qe (GO)
Qe (GO-PW)
Adsorption Capacity (Qe)
pH
26
24
22
20
18
16
14
12
2
3
4
5
6
7
8