Supplementary Data

Facile Preparation of MCM-41/Ag_2O Nanomaterials with High Iodide-Removal Efficiency

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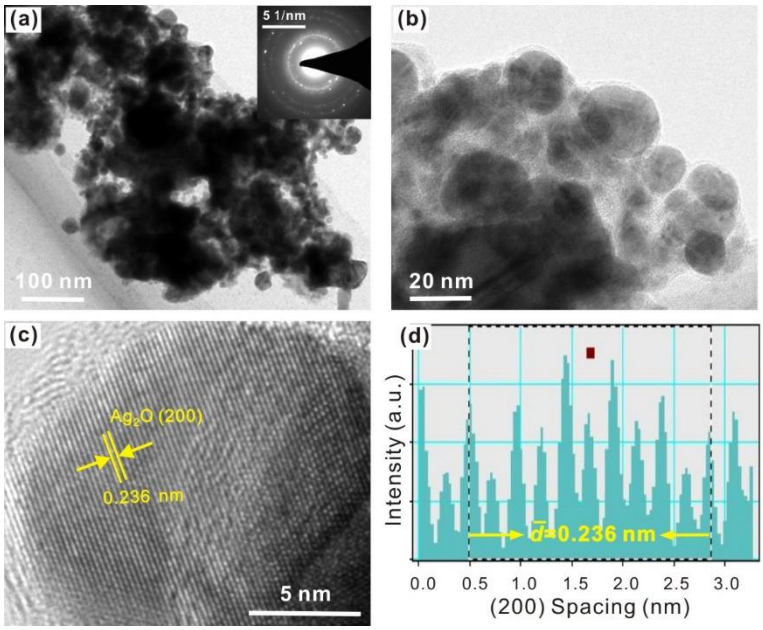

Figure. S1 (a-b) TEM images of pure Ag_2O nanoparticles, (c) HR-TEM image of a Ag_2O nanoparticles and (d) its integrated pixel intensities.

Table S1 Kinetics constants for I^- adsorption on various samples

Adsorbents	Kinetics model and related parameters											
	Pseudo-second-order model: $q_t = k_2 q_e^2 t/(1+k_2 q_e t)$			Pseudo-first-order model: $q_t = q_e(1-\exp(-k_1 t))$			Weber and Morris model: $q_t = k_d t^{1/2} + B$			Simplified Elovich model: $q_t = (1/\beta)\mathrm{Ln}(\alpha\beta t)$		
	q_e ($mg \cdot g^{-1}$)	k_2 ($g \cdot mg^{-1} \cdot min^{-1}$)	R^2	q_e ($mg \cdot g^{-1}$)	k_1 (min^{-1})	R^2	k_d ($mg \cdot g^{-1} \cdot min^{-1/2}$)	B ($mg \cdot g^{-1}$)	R^2	α ($mg \cdot g^{-1} \cdot min^{-1}$)	β ($g \cdot mg^{-1}$)	R^2
2-Ag_2O@MCM-41	30.5	0.005	0.760	28.6	0.125	0.667	0.599	15.98	0.438	305.7	0.35	0.809
5-Ag_2O@MCM-41	81.4	0.060	0.961	80.8	1.024	0.959	0.889	61.79	0.102	1.3E26	0.80	0.969
12.5-Ag_2O@MCM-41	134.6	0.0038	0.996	130.7	0.250	0.974	1.730	91.85	0.203	3.5E8	0.18	0.977

Table S2. Comparison of adsorption capacities of different adsorbents for I^-.

Adsorbents	I^- adsorption capacities	Ref.
2-Ag_2O@MCM-41	31.1 mg/g	This work
5-Ag_2O@MCM-41	83.2 mg/g	This work
12.5-Ag_2O@MCM-41	134.6 mg/g	This work
Black carbon	~2 mg/g	[1]
Activated Carbon	~12.7 mg/g	[2]
Chrysotile bundles	4.13 mg/g	[3]
Ferrihydrite	< 0.127 mg/g	[4]
Mg/Al LDH	5.8 mg/g	[5]
Halloysite/Ag_2O	57.7 mg/g	[6]
Cuprite (Cu_2O)	~0.15 mg/g	[7]

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