ESI:

A Facile Sacrificial Template Method to Synthesize One-dimensional Porous CdO/CdFe2O4 Hybrid Nanoneedles with Superior Adsorption Performance

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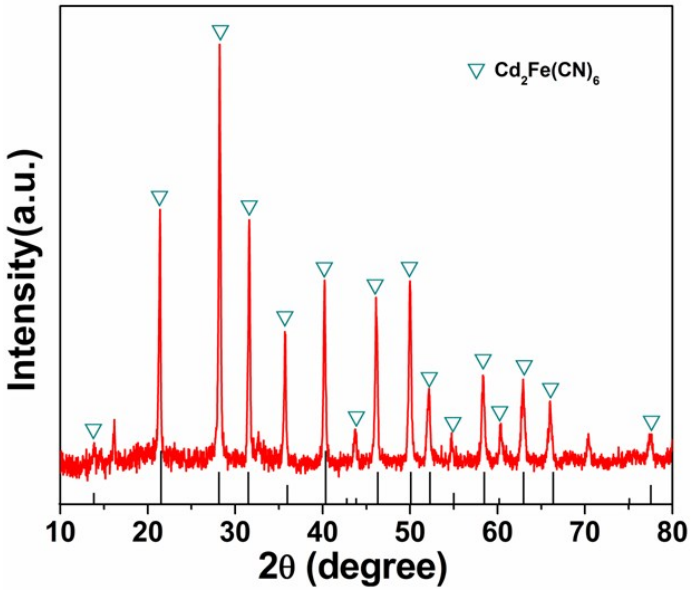

Fig. S1. XRD pattern of the as-prepared $Cd_2Fe(CN)_6$ NNs precursor.

Table S1. Adsorption capacities of CR on various adsorbents.

adsorbent	adsorption capacity ($mg\ g^{-1}$)	references
porous CdO/$CdFe_2O_4$ nanoneedle	1491	This work
Mesoporous MgO architectures	690	1
Mesoporous carbon-incorporated ZnO	162	10
MnO_2 Hierarchical Hollow Nanostructures	80	20
Urchin-like α-FeOOH hollow spheres	275	23
$NiFe_2O_4$/ZnO hybrids	222	33
$CoFe_2O_4$/ $NiFe_2O_4$/ $MnFe_2O_4$	244/97/92	34
Hierarchically porous NiO–Al_2O_3	357	35
Spindle-like boehmites	427	36
Hierarchical γ-AlOOH / γ-Al_2O_3 microspheres	214 /416	37
Fe_3O_4@meso C	1657	38

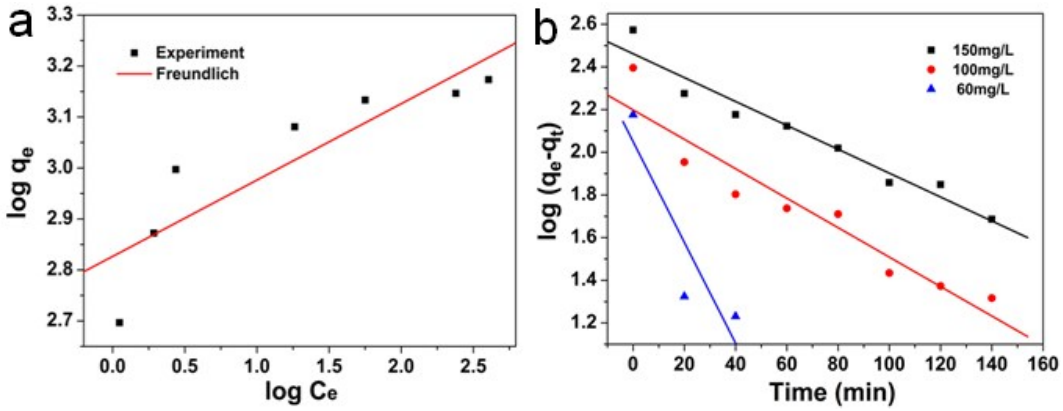

Fig. S2. (a) The values of log q_e against log C_e based on the Freundlich isotherm model. (b) the pseudo-first-order kinetics rates for adsorption of CR on the as-obtained porous CdO/$CdFe_2O_4$ HNNs.

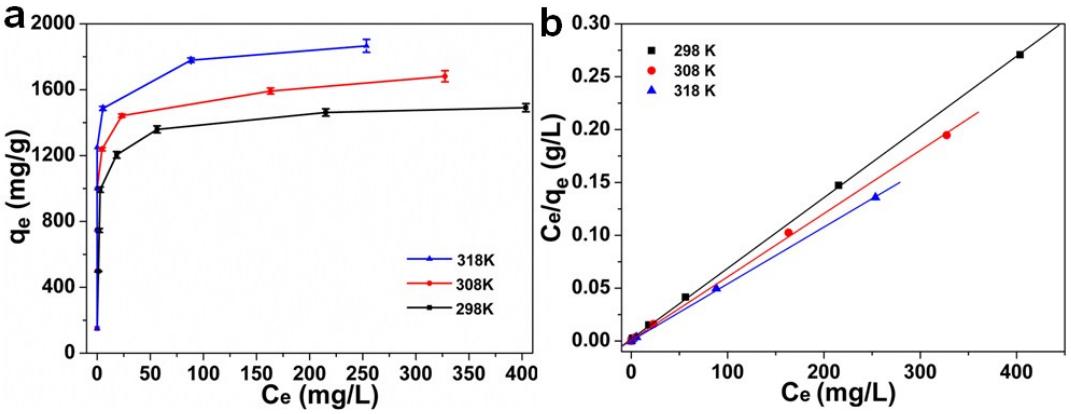

Fig. S3. (a) Effects of temperature for different CR concentrations on the adsorption performance of porous CdO/$CdFe_2O_4$ (b) the linear dependence based on the Langmuir isotherm model for different temperature. The error bar represents the standard deviations (n = 3).

Table S2. Parameters and standard deviations of Langmuir and Freundlich isotherm equations for the adsorption of CR on porous $CdO/CdFe_2O_4$ HNNs.

Langmuir				Freundlich			
q_m, (mg g^{-1})	K_L	R^2	S.D.(%)	K_f	n	R^2	S.D.(%)
1494	0.37	0.99978	0.35	667	6.47	0.75854	8.86

Table S3. The linear correlation coefficients and standard deviations of Langmuir isotherm equations for different temperature.

Temperature(K)	q_m(mg g^{-1})	K_L ($\times 10^3$L mol^{-1})	R^2	S.D.(%)
298	1490.8	259.2	0.99978	0.15
308	1672.4	494.6	0.99919	0.20
318	1862.3	1158.6	0.99967	0.08

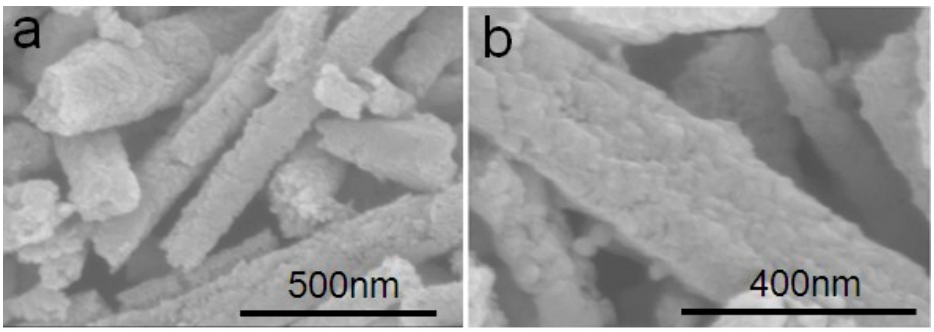

Fig. S4. (a, b) SEM images of the CR-adsorbed $CdO/CdFe_2O_4$ HNNs.