Supplementary material:

Table S1 Comparison of adsorption capacity of Cd(II) and As(III) by the adsorbents in different literature.

Table S3 Characteristics of irrigation water sample.

Table S3 Superficial elemental composition and atomic ratios of SFC before and after adsorption of Cd(II) or As(III) by EDS analysis.

Table S1

Raw materials	pH	Adsorption capacity of Cd(II) ($mg \cdot g^{-1}$)	Adsorption capacity of As(III)($mg \cdot g^{-1}$)	References
Zeolite-nZVI	7.0	48.63	11.52	1
GB-nZVI	7.0	46.4	181.5	2
S-nZVI	7.0	11.37	230.29	3
biochar supported S-nZVI	5.0	162	276	4
α-FeOOH modified wheat straw biochar	4.0	62.9	78.3	5
Biochar-supported nZVI	4.0	67.9	291	6
calcium-based magnetic biochar	6.0	10.07	6.37	7
S-Fe-C composites	4.0	405	349	This study

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Table S2

Items	Value
pH	6.32
TOC ($mg \cdot L^{-1}$)	6.05
TC ($mg \cdot L^{-1}$)	17.3
Ca^{2+} ($mg \cdot L^{-1}$)	14.9
Mg^{2+} ($mg \cdot L^{-1}$)	12.2
K^{+} ($mg \cdot L^{-1}$)	10.0
Na^{+} ($mg \cdot L^{-1}$)	3.93
SO_4^{2-} ($mg \cdot L^{-1}$)	23.1
NO_3^{-} ($mg \cdot L^{-1}$)	15.1
PO_4^{3-} ($mg \cdot L^{-1}$)	17.1
Cd(II) ($mg \cdot L^{-1}$)	-
As(III) ($mg \cdot L^{-1}$)	-

Table S3

	Element content of SFC(%)								
	C	O	S	Fe	K	Na	Mg	Cd	As
Before reaction	37.4	39.6	0.7	15.1	2.79	3.12	0.91	-	-
Cd(II)	39.9	23.7	1.6	24.8	1.23	1.66	0.07	7.09	-
As(III)	31.5	44.0	1.51	17.3	-	-	-	-	5.72