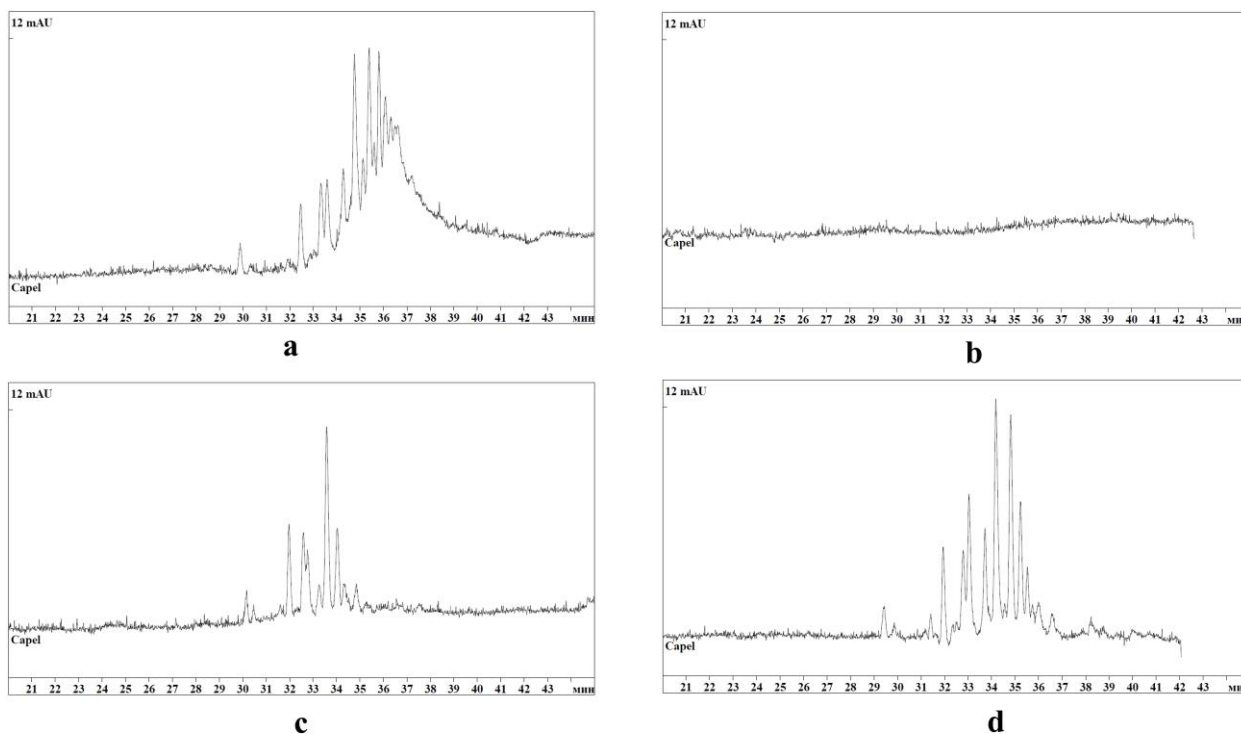


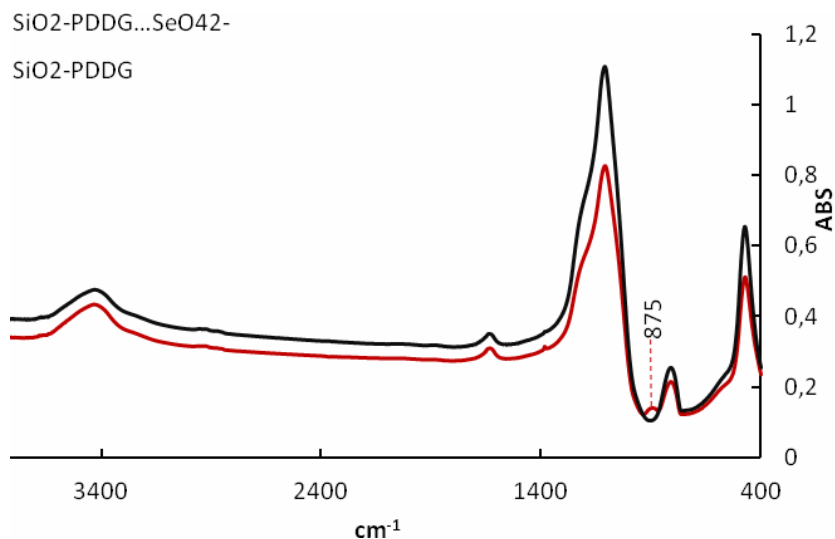
**Table S1.** Operational conditions for ICP-MS determination of Se

Parameter	Value
Plasma power	1300 W
Nebulizer argon flow rate	0.94 L min <sup>-1</sup>
Auxiliary argon flow rate	0.7 L min <sup>-1</sup>
Plasma argon flow rate	13 L min <sup>-1</sup>
Sampler orifice (nickel)	1.1 mm
Skimmer orifice (nickel)	0.7 mm
Acquisition mode	Peak-Jumping
Number of sweeps	100
Dwell time	10 ms
Acquisition time	6 s
Isotope	<sup>82</sup> Se
Internal standard	<sup>115</sup> In, <sup>103</sup> Rh

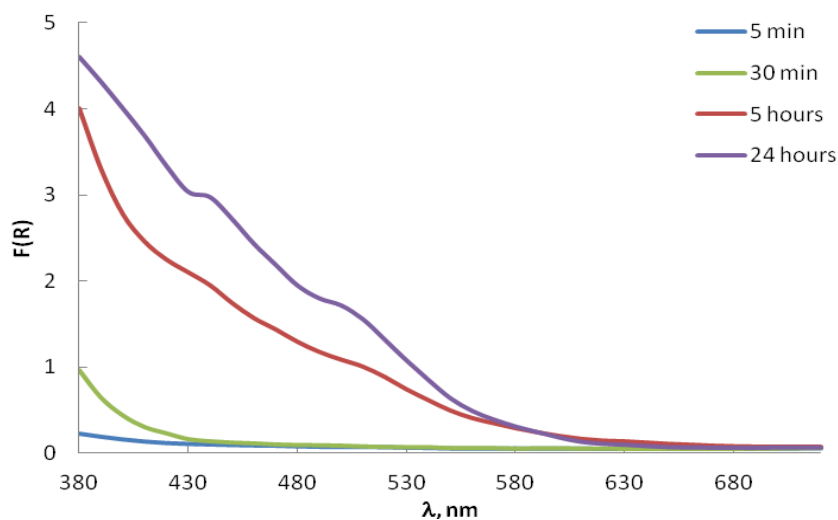


**Figure S1.** Electrophoregrams of the initial PDDG solution (a) and the effluent from the cartridge filled with silica after 0.5 mL (b), 5 mL (c), 10 mL (d)

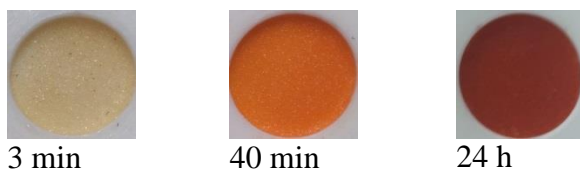
$C_{\text{PDDG}} = 1 \text{ g L}^{-1}$  (a),  $m_{\text{SiO}_2} = 0.2 \text{ g}$ ; sample injection - 30 mBar·10 s, 25 mM phosphate buffer + 200 mM potassium sulfate,  $U = +15 \text{ kV}$ , capillary diameter 50  $\mu\text{m}$



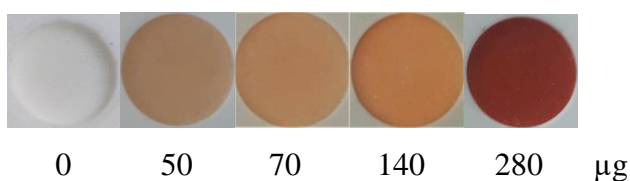
**Figure S2.** FT-IR spectra of SiO<sub>2</sub>-PDDG adsorbent before (black line) and after adsorption of Se(VI) (red line)



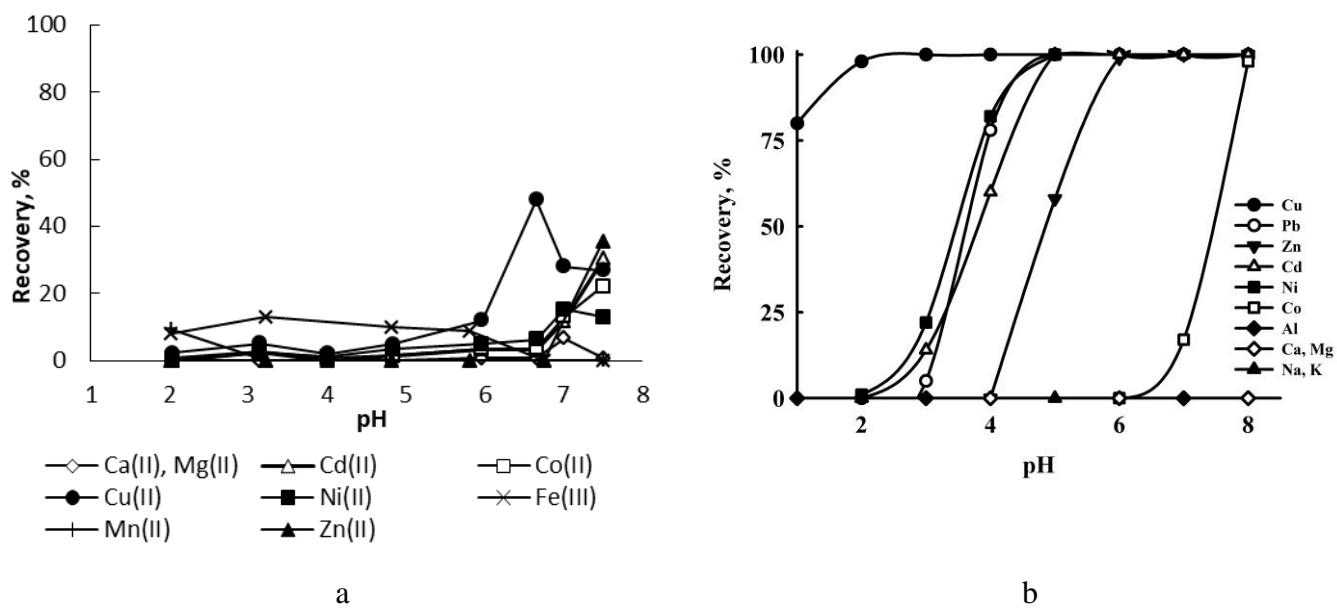
**Figure S3.** Diffuse reflectance spectra of the MPS adsorbent after Se(IV) loading vs. storage time.  $C_{Se} = 100 \mu\text{g mL}^{-1}$ ,  $V = 10 \text{ mL}$ ,  $m_{MPS} = 0.1 \text{ g}$



**Figure S4 a.** Photos of MPS adsorbent after loading of 280  $\mu\text{g}$  Se(IV) vs. storage time.



**Figure S4 6.** Photos of the MPS adsorbent after loading of Se(IV) vs. selenium concentration.



**Figure S5.** Extraction of ion metals by SiO<sub>2</sub>-PDDG (a) and MPS (b) adsorbent vs. pH