Supplementary Materials

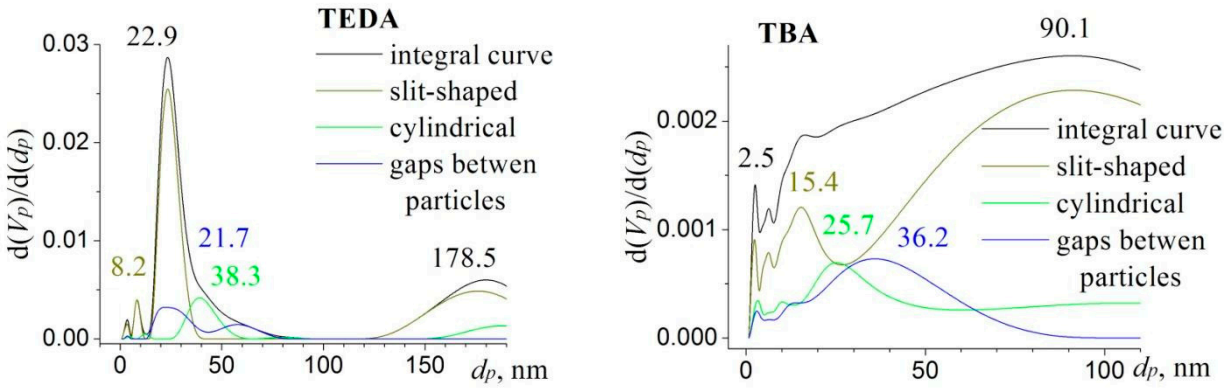

Figure S1. Pore-size distribution curves for the porous samples: **TEDA** and **TBA** plotted based on the SCV/SCR method.

The pore-size distributions were estimated and plotted based on the SCV/SCR method, which is a self-consistent regularization (SCR) procedure applied to integral adsorption equations based on a complex model (SCV model), with slit-shaped and cylindrical pores and voids between spherical nonporous particles packed in random aggregates. Thus, the SCV/SCR method covers the mixed pores (slit-like, cylindrical, and with gaps between spherical particles) [1].

Table S1. Structural and adsorption characteristics of the synthesised porous samples.

Sample	S_{BET}, $m^2\ g^{-1}$	V_Σ, $cm^3 g^{-1}$	V_{pores}, %			V_{pores}, $cm^3\ g^{-1}$			d_{ef}, nm
			nano	meso	macro	slits	cylinder	gaps	
TEDA	174	0.78	1.9	88.2	9.9	0.584	0.085	0.115	18
TBA	179	0.29	7.2	59.8	33	0.190	0.056	0.046	6.5

Moreover, the Gurvich formula was used to calculate the pore diameter (nm): $d_{ef} = 4V_\Sigma/S_{BET} *1000$, where V_Σ is adsorption pore volume ($cm^3\ g^{-1}$) estimated at the highest P/Ps of low-temperature nitrogen adsorption-desorption isotherms; S_{BET} is the specific surface area ($m^2\ g^{-1}$).

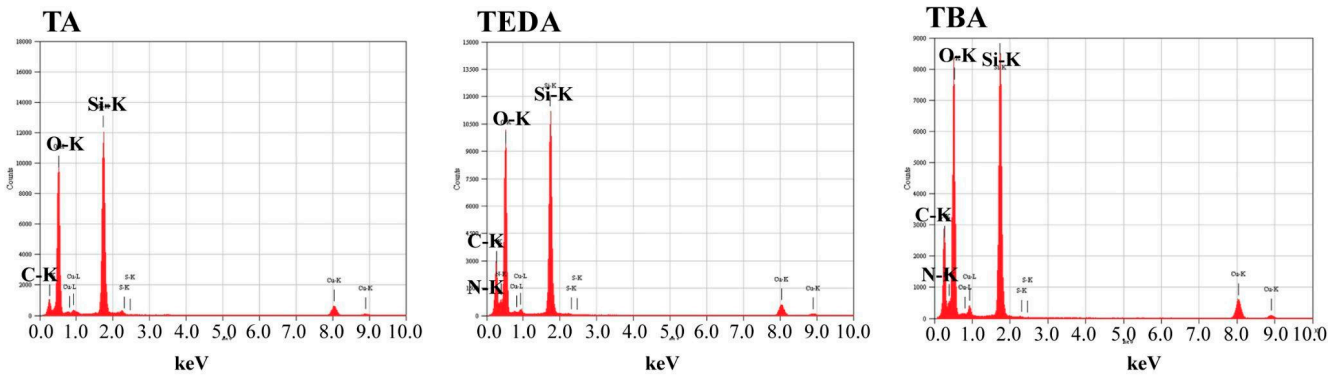

Figure S2. The EDX spectra of the synthesised samples

Table S2. Kinetic parameters of Cu(II) and Ni(II) ions adsorption by the **TEDA** sample

Kinetic sorption parameters for ***TEDA***		Ni(II)	Cu(II)
pseudo(I) order equation $\ln (A_{eq} - A_t) = \ln A_{eq} - k_1 t$	A_{eq}, mmol g^{-1}	0.21	0.67
	k_1, min^{-1}	0.0134	0.0165
	R^2	0.979	0.962
pseudo(II) order equation $t/A_t = 1/(k_2 A_{eq}^2) + t/A_{eq}$	A_{eq}, mmol g^{-1}	0.32	0.85
	k_2, g $mmol^{-1}$ min^{-1}	0.1091	0.0371
	h, mmol min^{-1} g^{-1}	0.011	0.027
	R^2	**0.990**	**0.990**

A_t and A_{eq} stand for adsorption (mmol g^{-1}) at any given time t (min) and at equilibrium; k_1 (min^{-1}) and k_2 (g $mmol^{-1}$ min^{-1}) are the rate constants of pseudo-first and pseudo-second order models. The initial rate of sorption h (mmol min^{-1} g^{-1}), in accordance with the pseudo-second order kinetic model, was calculated as: $h = k_2 A_{eq}^2$

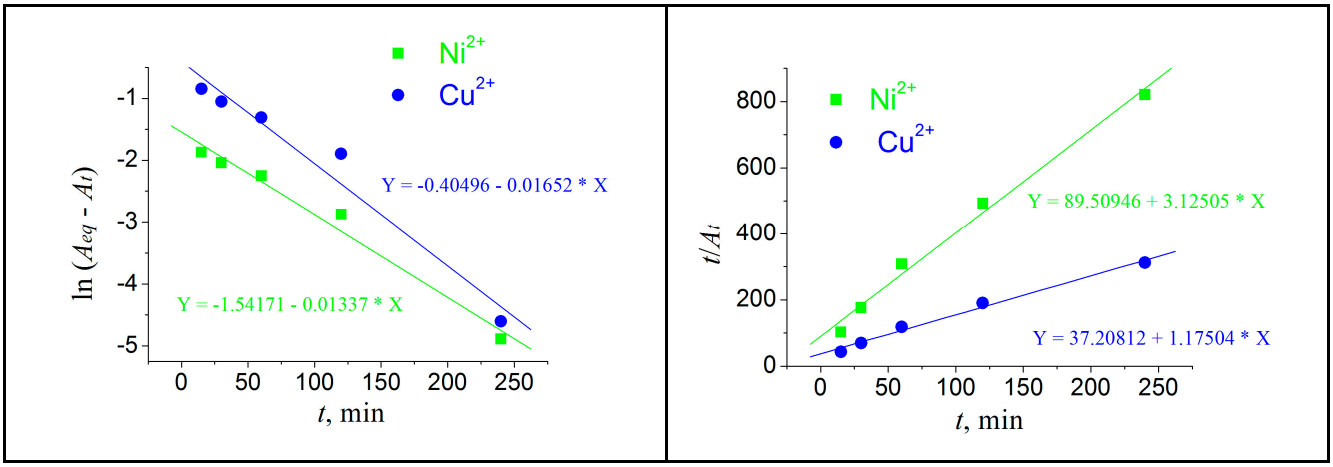

Figure S3. Kinetic curves of Ni(II) and Cu(II) sorption by **TEDA** silica in Lagergren equation coordinates for pseudo-first (left) and pseudo-second (right) order processes

References:

[1] Gun'ko, V.M. Composite materials: Textural characteristics. Applied Surface Science 2014, 307, 444-454. https://doi.org/10.1016/j.apsusc.2014.04.055