Phenol-Contaminated Water Treatment Using Clay Nano Particles in Continuous and Batch Process and Survey the Factors Affected

Supplementary Information
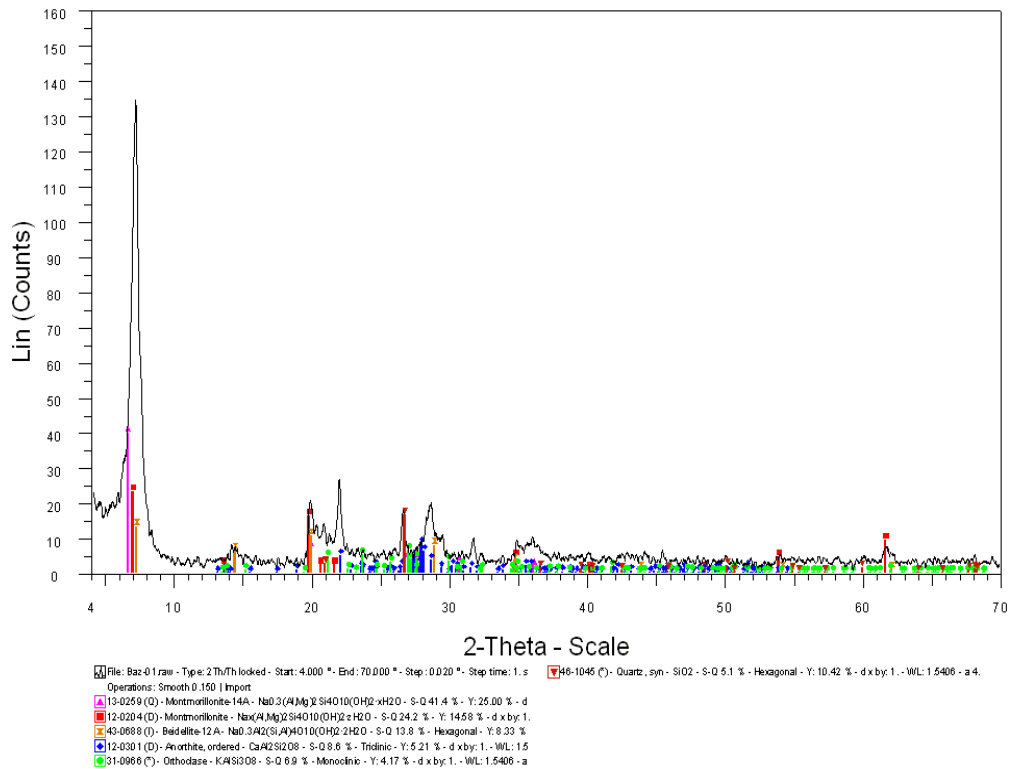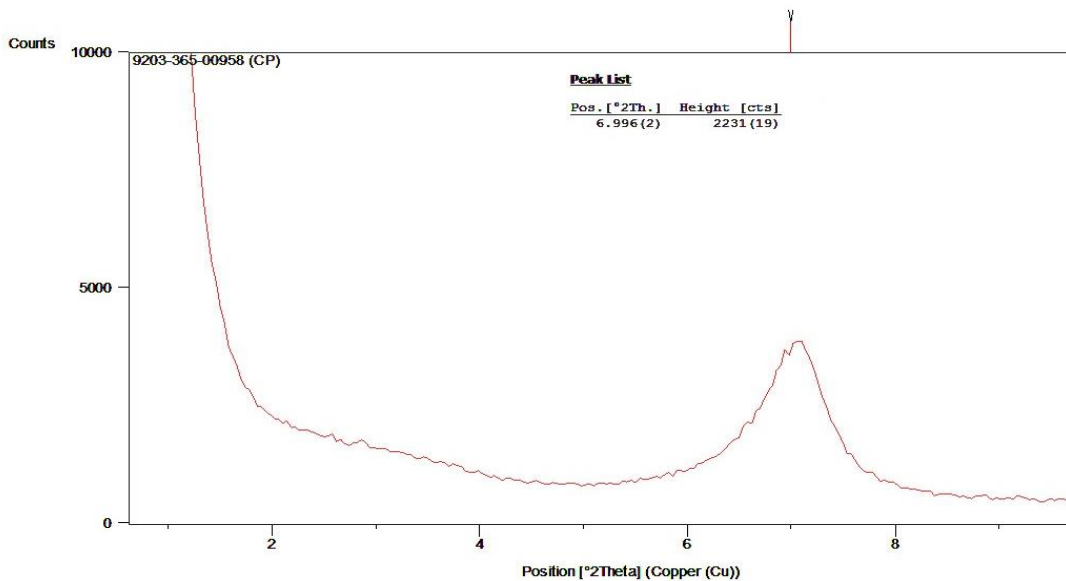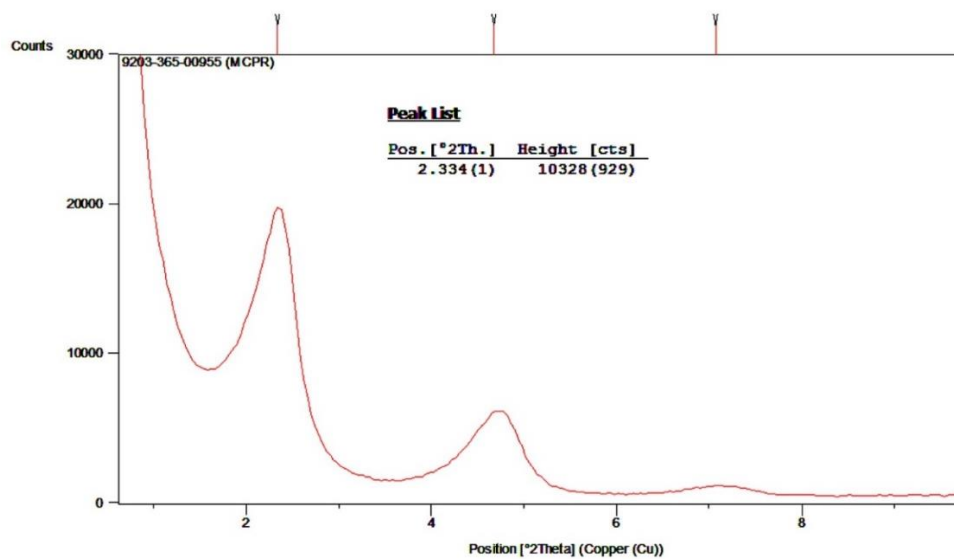

Fig. S1. X-ray diffraction (XRD) pattern of the uncorrected Nano-clay.

A) XRD Pattern before Nano Clay Modification

Fig. S2. The X-ray diffraction (XRD) pattern of the nano clay before and after modification.

Peak List

Pos. [°2Th.]	Height [cts]
2.334(1)	10328(929)

B) XRD Pattern after Nano Clay Modification

Fig. S2. The X-ray diffraction (XRD) pattern of the nano clay before and after modification.

Table S1. Changes in Morphological Characteristics of Clay

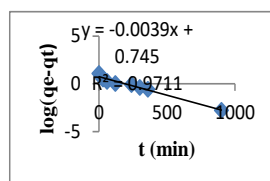| After Correction	Before Correction	Characteristics
37.6 nanometers Water-repellent	12.62 nanometers Water-friendly	Interlayer spacing Surface

Fig. S3. Kinetics of Phenol Adsorption by Modified Nano Clay_ Pseudo-first-order kinetics
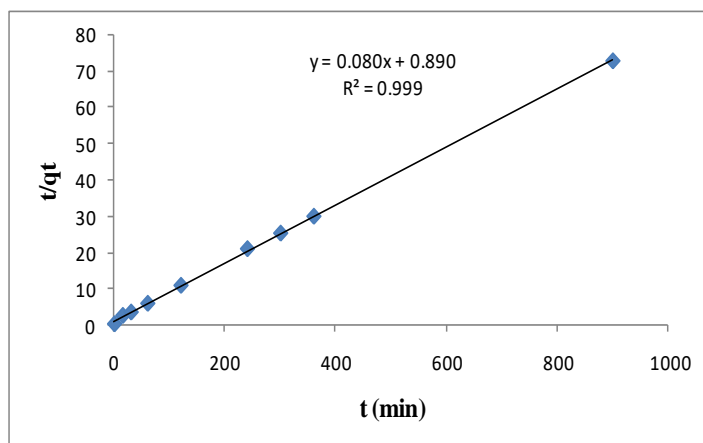
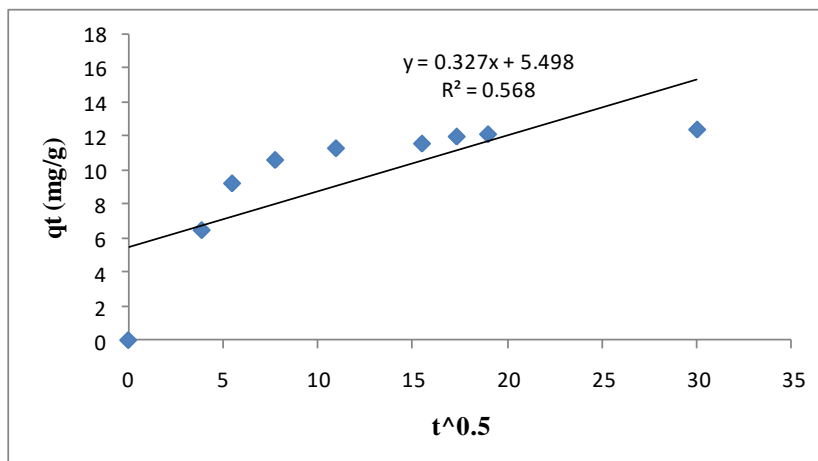**Fig. S3.** Kinetics of Phenol Adsorption by Modified Nano Clay_ Pseudo-second-order kinetics

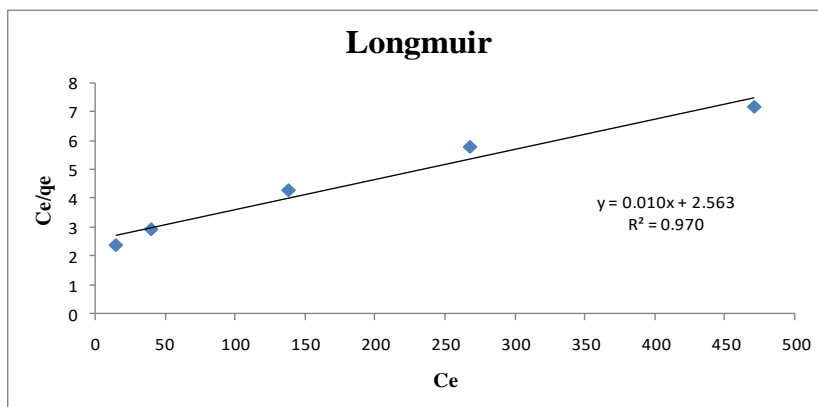**Fig. S3.** Kinetics of Phenol Adsorption by Modified Nano Clay_ Interstitial diffusion kinetics
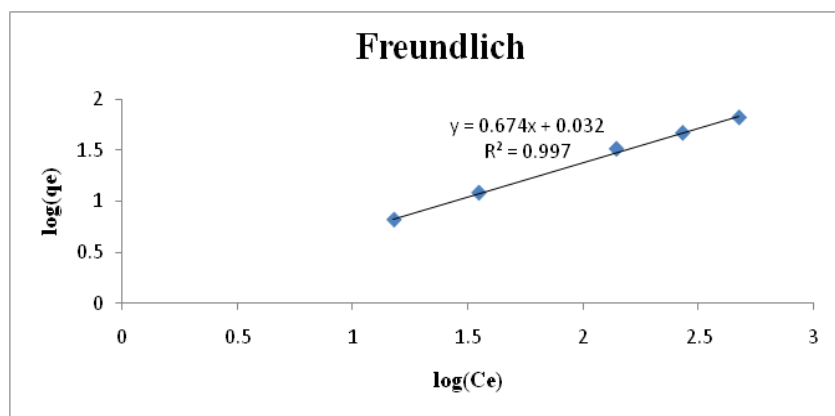

Fig. S4. A) Langmuir Isotherm
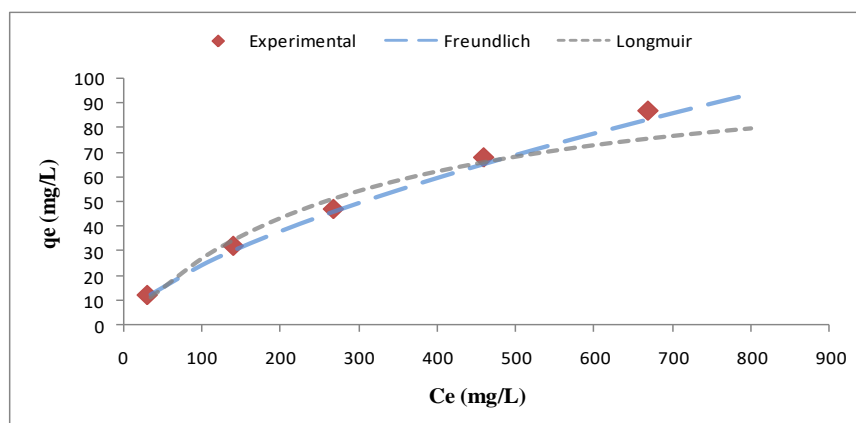
Fig. S4. B) Freundlich Isotherm

Fig. S4. Isotherm of Phenol Adsorption by HDTMA-Modified Nanoclay
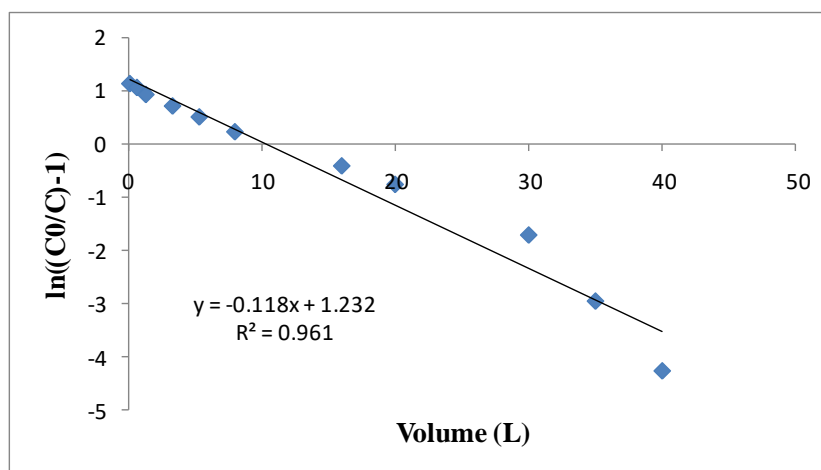

Fig. S5. Fitting of the Thomas model to continuous system data (Flow rate: 5 liters per hour)
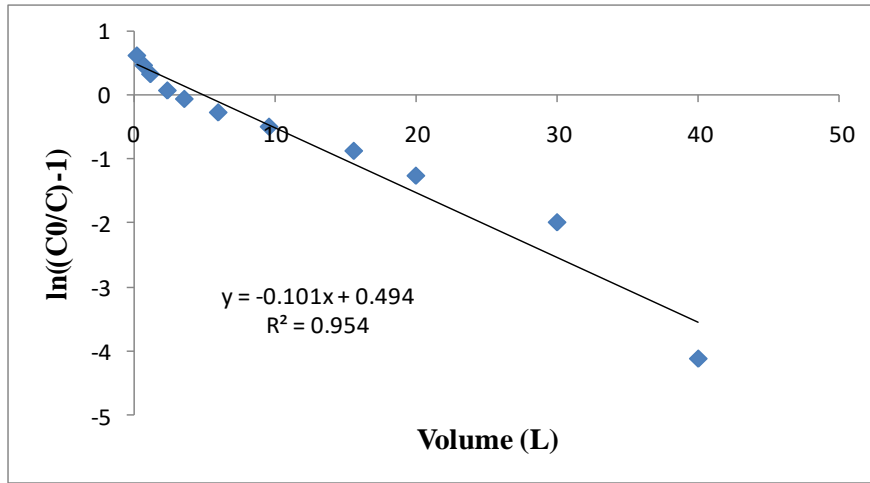
Fig. S5. Fitting of the Thomas model to continuous system data (Flow rate: 15 liters per hour)
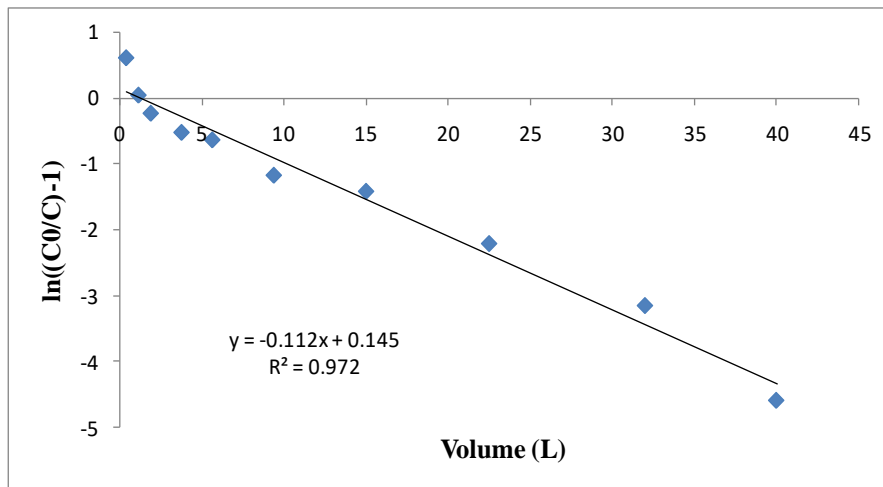

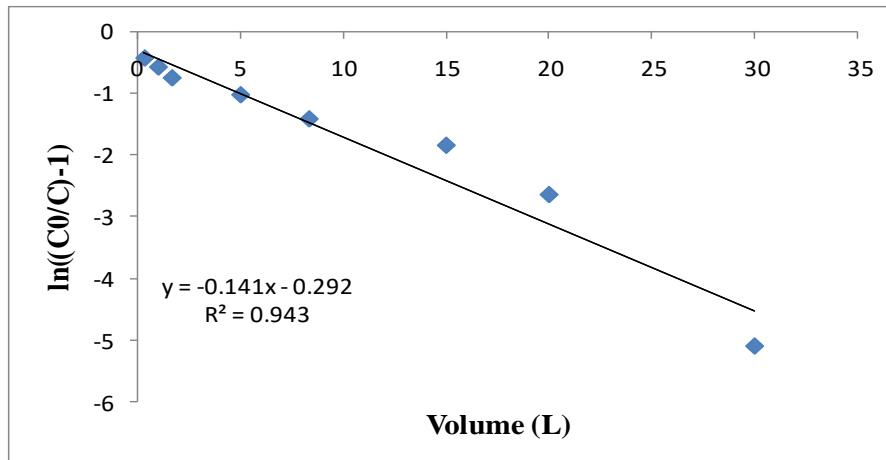**Fig. S5.** Fitting of the Thomas model to continuous system data (Flow rate: 23 liters per hour)

Fig. S6. A) The fitting of the Thomas model to the experimental data of the continuous system at different dosages (20 gr)
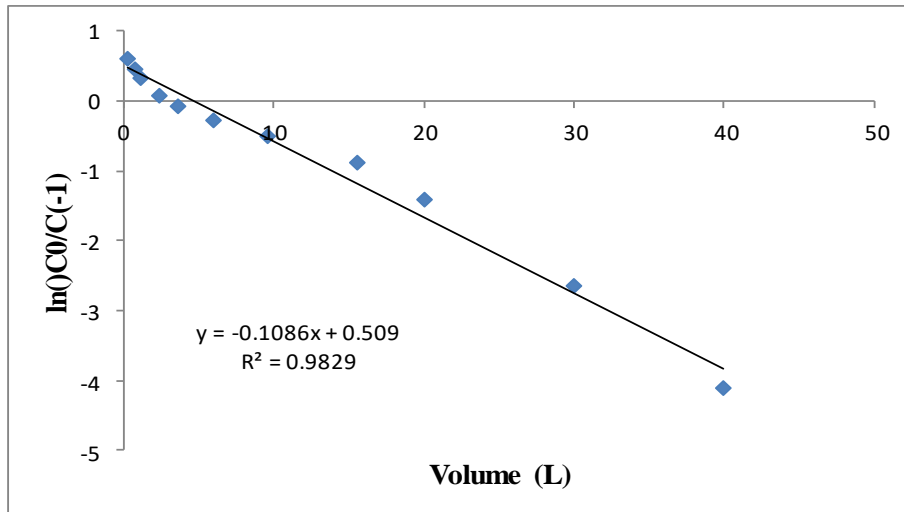
Fig. S6. B) The fitting of the Thomas model to the experimental data of the continuous system at different dosages (40 gr)
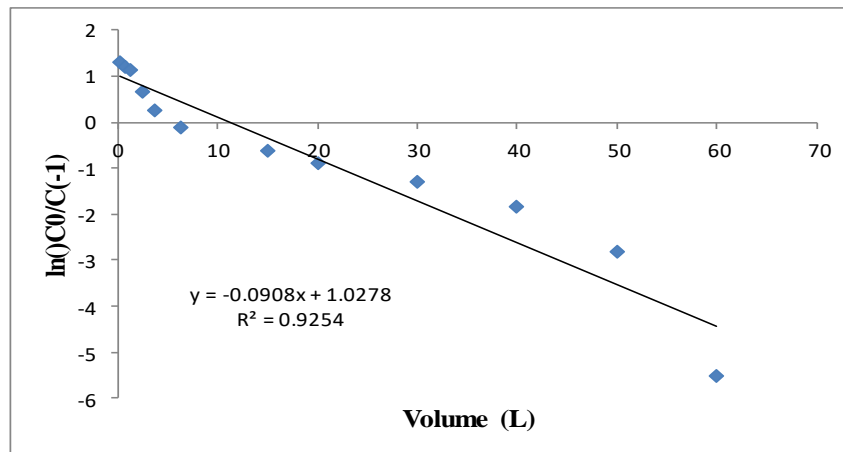

Fig. S6. C) The fitting of the Thomas model to the experimental data of the continuous system at different dosages (60 gr)
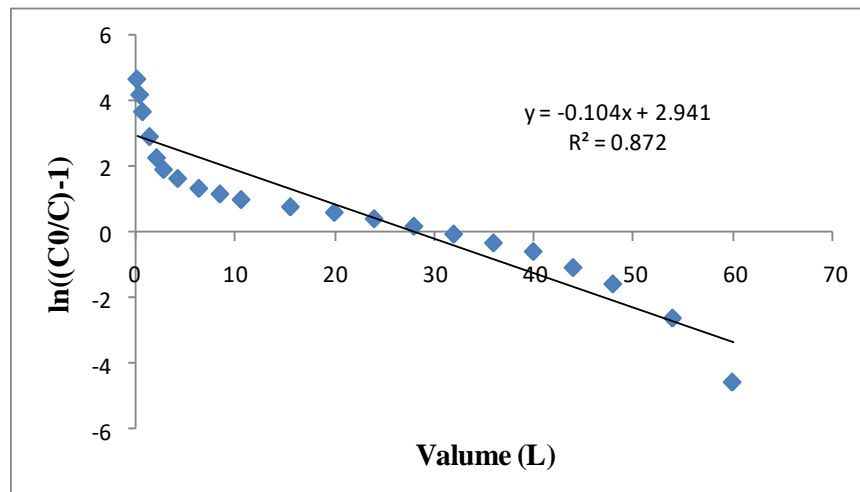

Fig. S7. The fitting of the Thomas model to the data obtained from the continuous series system (Series column)
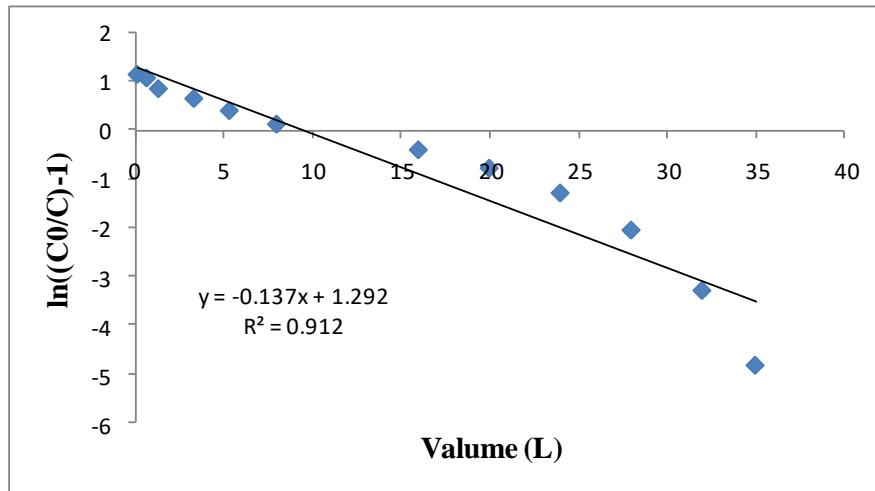
Fig. S7. The fitting of the Thomas model to the data obtained from the continuous series system (Single Column)