

Supporting Information

Table S1. The concentration level of NP in various Rivers of Asian Region

Country	Location	Amount of NP	Reference
China	Pearl river system	20.80 (ng/g dw)	[22]
	Huangpu River	10-338 µg/kg d.w.	[18]
	Huangpu Rivers and its tributaries	0.0202-0.1075 mg/m ³	[24]
	Jiaozhou Bay and surrounded rivers	3-39700 µg/kg d.w.	[15]
	Jiaozhou Bay in flowing rivers	0.0906-28.6 mg/m ³	[15]
	Lanzhou reach of the yellow river	34.2-599 ng/l	[14, 25]
	Yong River	140-3948 ng/l	[28]
	Pearl River Estuaries	1,740 -16,200 ng/l	[27]
	Songhua River	0.35-3.77 ng/l	[26]
	Hong Kong	Seawater Cape D' Aguilar Marine Reserve	0.14-0.50 mg/m ³
Marine sediments from Okinawa		5-46 µg/kg d.w.	[12]
Kurose River Water, Hiroshima		305 – 2000 ng/l (May 2001)	[9]
Japan	Edogawa River, Tokyo	0.24 µg/l	[23]
	Sakagawa River	0.87 µg/l	[23]
	Amur Bay (in sediment)	5-1000 ng/mL	[21]
	Kamo River (in sediment)	890-7900 ng/g	[17]
S-Korea	Han River	23-188 ng/l	[10,11]
	Shihwa Lake	48.1 ng/g dw	[19]
	Yeongsan and Seomjin rivers	0.266 ± 0.028 µg/l	[7]
	Kaoping River, Lanyang River, Houlung River, Taichia River, Wu River, Bajhang River, Fongshan River	0.7 to 5.1 µg/l	[16]
Taiwan	Donggang River,	93-511 ng/l	[20]
	Huang River, Tam-Sui River, Nan-Kan River, Fu-Hsing river, Tou-Chyan River, Ke-Hya River, Chung-Kang River, Hou-Lung River, Tai-An River, Tai-Chia River, Wu River, Lu-Kang River, Cho-Shi River, Pei-Kang River, Pu-Tsu River, Zeng-Wen River, Kao-Ping River and Dong-Kang River	0.7-3.2 µg/l	[13]
Malaysia	Salut River, Tuaran	0.814±0.089	[6,7]

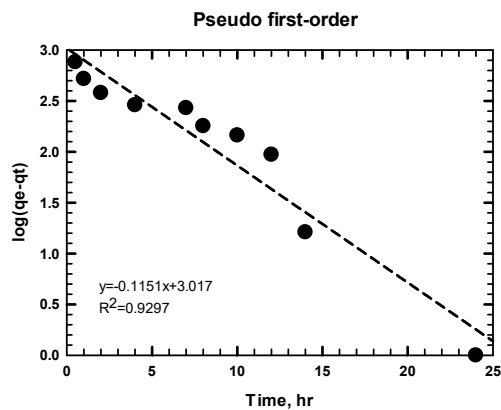
		$\mu\text{g/l}$	
Indonesia	Cikamasan, Cisarua	0.039 ± 0.005	[6]
		$\mu\text{g/l}$	
Thailand	Khong River, Thailand	0.918 ± 0.103	[6]
		$\mu\text{g/l}$	
Cambodia	Siem Reap River	Bellow Detection limit	[6]

Table S2. The concentration of Nonylphenol in Public Water Supply System (from 2009 to 2015)

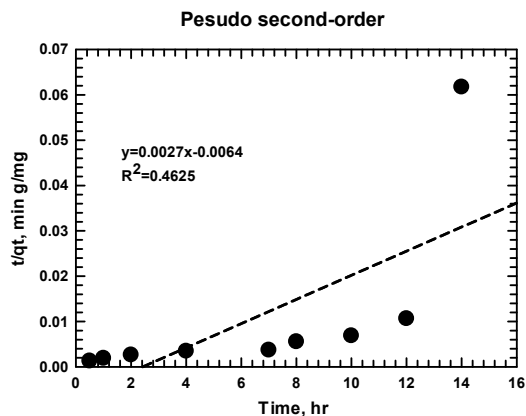
Water treatment plant	Capacity (CMD)	Conventional treatment process ^a	From Source(ng/L)						After conventional treatment (ng/L)					
			Number of taken	Average	Standard Deviation	Maximum	Minimum	Median	Number of taken	Average	Standard Deviation	Maximum	Minimum	Median
Shin-shan	200,000	Pre-Cl, CS, RF, Post-Cl	19	319.7	263.2	986	46.1	272.0	19	81.8	54.9	177	ND*	69.5
Ban-shin	1,200,000	Pre-Cl, CS, RF, Post-Cl	19	224.0	183.1	672	ND*	165.0	19	88.8	93.0	314	ND*	60
Chan-shin	500,000	Pre-Cl, CS, RF, Post-Cl	6	109.4	51.0	180	31.1	119.0	6	109.3	57.9	209	36	112
Bao-shan	110,000	Pre-Cl, CS, RF, Post-Cl	7	352.1	265.2	812	107	319.0	7	129.4	135.9	332	ND*	88
Dong-shin	240,000	Pre-Cl, CS, RF, Post-Cl	4	157.3	66.4	255	110	132.0	4	221.4	193.8	508	97	140.2
Carp Lake	1,600,000	Pre-Cl, CS, RF, Post-Cl	4	202.0	171.9	456	85	133.5	4	163.0	107.7	322	95	117.5
Feng-yuan	1,000,000	Pre-Cl, CS, RF, Post-Cl	19	188.2	176.6	683	ND*	118.4	19	107.1	109.9	333	ND*	50
Bei-dou	130,000	Pre-Cl, CS, RF, Post-Cl	6	251.2	294.3	848	81	141.5	6	94.0	64.7	176	19	74
Nan-hua	800,000	Pre-Cl, CS, RF, Post-Cl	15	117.6	88.6	340	ND*	117.0	15	46.2	44.9	135	ND*	41
Chen-chin Lake	450,000	Pre-Cl, Pre-O ₃ , CS, RF, GAC, Post-Cl	10	360.7	248.1	884	100	348.5	10	138.4	94.3	290	24	104.5
Feng-shan	400,000	Pre-Cl, CS, RF, Post-Cl	15	214.3	201.4	837	29.8	150.0	15	85.4	171.1	548	ND*	22.2
Kao-tan	225,000	CS, RF, UF,LPRO, Post-Cl	2	206.0	149.9	312	100	206.0	2	73.5	16.3	85	62	73.5

Kin-men	12,000	CS, RE, Post-Cl, UF, RF	10	396.7	219.3	650	150	420.0	10	95.0	37.3	140	50	85
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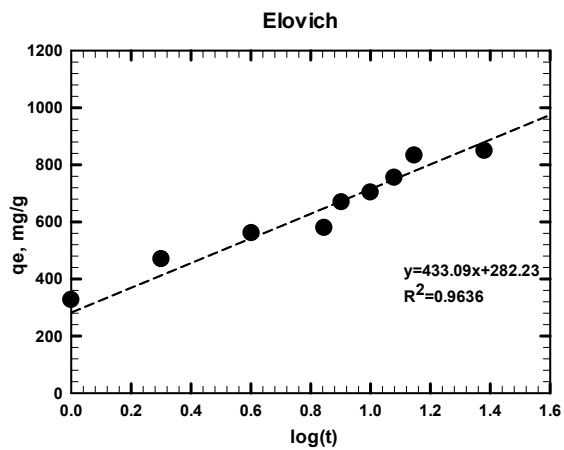
a: Pre-Cl: pre-chlorination; CS: coagulation/sedimentation; RF: rapid filtration; Post-Cl: post-chlorination; Pre-O₃: pre-ozonation; GAC: granular activated carbon, UF: ultrafiltration, LPRO: low pressure reverse osmosis, ND*: lower than method detection limit



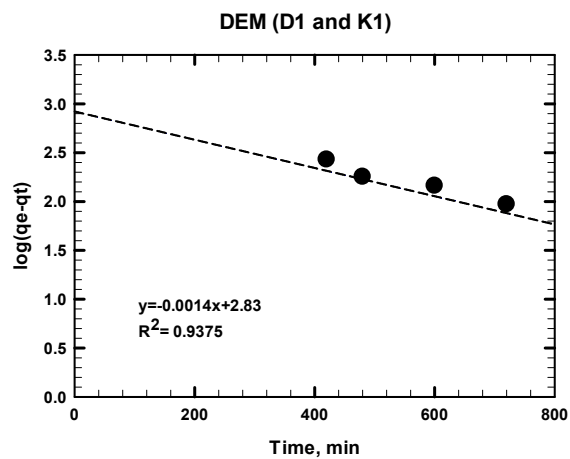
(a)



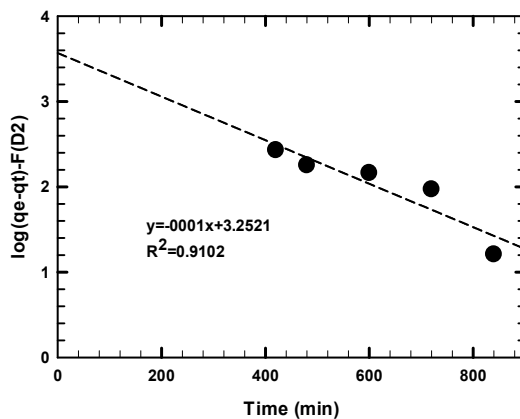
(b)



(c)



(d)



(e)

Figure S1. Adsorption kinetics equations used to describe NP adsorption on MWCNT. Experimental conditions: [NP]=2.5 mg/L, T=25°C, [MWCNTs]=0.5mg/L.

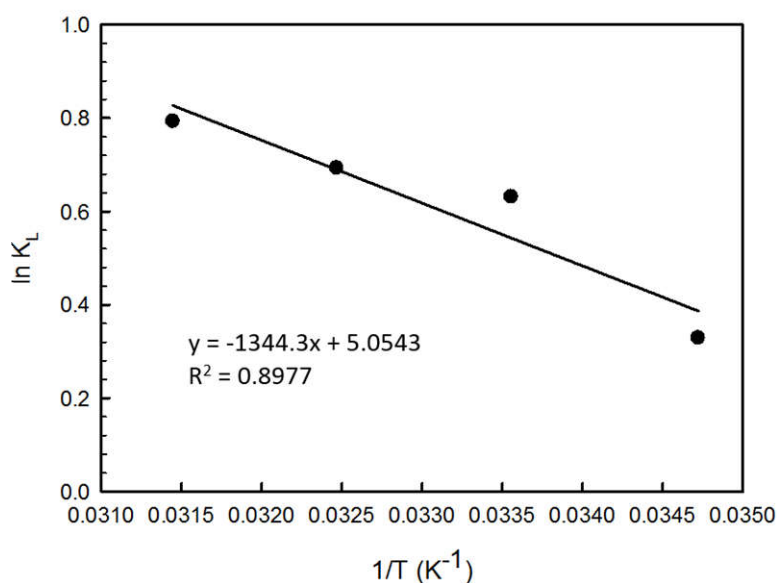


Figure S2. Plot of $\ln(K)$ versus $1/T$ (van't Hoff plot) for various temperature from 288 K to 318 K, $[NP] = 2.5$ mg/L and $[MWCNTs] = 0.5$ mg/L

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